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# CALIFORNIA CULTIVATOR

*THE LIVESTOCK* *Combined* *CALIFORNIA*  
*and DAIRY JOURNAL* *with* *CULTIVATOR*

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

January 5, 1918

SAN FRANCISCO





## This one-armed man Pulls big trees by hand

**F**RANK M. HANCE, a one-armed farmer of Bowie, Md., sent me this photo of himself and a "K" pulling a double silver maple, 3 ft. 8 in. in diameter at the ground. What he has done you can do. Clear your stump land cheaply—no digging, no expense for teams or powder. Your own right arm on the lever of the "K" Stump Puller can rip out any stump that can be pulled with the best inch steel cable. I guarantee it. I refer you to U. S. Government officials. I give highest banking references.



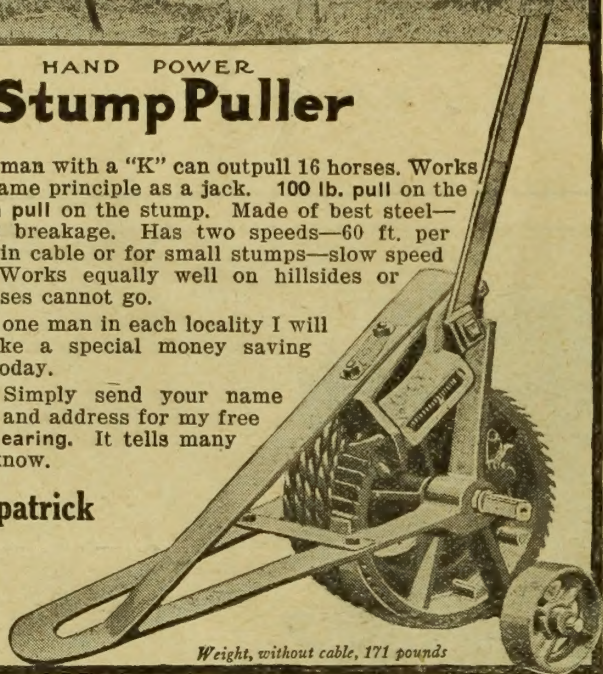
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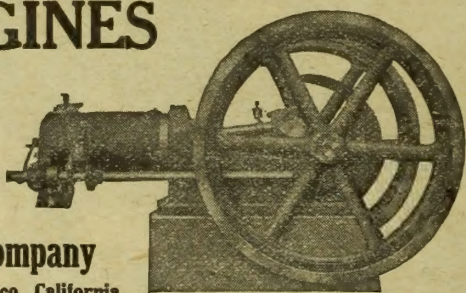
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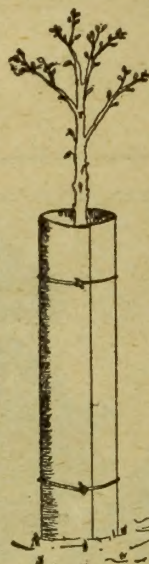
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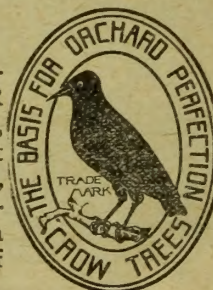
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# California Cultivator

Vol. L, No. 1

LOS ANGELES: January 5, 1918

One Dollar Yearly

## Make Returns for 1917 Income Tax Now

All Cash Transactions Between January 1 and December 31, 1917, Will be Basis for Payment.  
Get Blanks from Internal Revenue Officer at Once; Make Return Before March 1



INTEREST in the income tax is increasing. The return must be in the hands of the internal revenue collector on or before March 1. The short form, "1040A," of return is now ready. It is for those with income of less than \$3000. The longer form "1040" is for those with incomes of \$3000 or more. A report card request to "Internal Revenue Collector," either San Francisco or Los Angeles, will bring either.

Collector John P. Carter of Los Angeles is now instructing a corps of workers who are to visit various counties of the South, and we doubt not the San Francisco office is preparing for similar service of suggestions to those who wish help in making out reports.

Meantime the Cultivator is helping through the mails and through its columns:

### Loss of Live Stock

"If a person loses a number of cows because of disease, later buys cows, then possibly later sells some, must the money received from the sale be accounted for and how should the loss from dead cows be treated?"

That depends entirely on circumstances. Are you a breeder and were the cows breeding stock? If so then your permanent investment was affected and no deduction can be made. But if you are a feeder then you may have bought a bunch of cows or steers, all to be sold in a short time at advance, then your income is affected directly and the deduction is made. Ordinarily the loss of stock on a farm, or of a building by fire, while it may affect the income ultimately is not to be deducted. Keep a clear idea as to permanent investment or capital and what is cash (or product consumed) return for the 12 months.

### Money from Real Estate

"Is money received from sale of real estate to be accounted for in making return.

Your original capital is not affected, but increase or profit made on deal, less amount paid for taxes during past year or other necessary maintenance expense, is taxable.

### Money Loaned

"Where one has made a loan and it is repaid by the borrower, must it be counted as income?"

No. Interest which is paid on it is income, however, which is taxable.

\* \* \*

However, a most interesting statement to farmers is made by a member of the treasury department and from this we quote:

### FARMERS AND THE INCOME TAX

By Alson Secor of the Treasury Department



ANYONE heretofore you have not paid any attention to the income tax. It is time you did, because a failure to report your income before March 1, 1918, will cost you dearly—

for the penalty is from \$20 to \$1000 fine, and in addition 50 per cent of the tax due. If you fail to give truthful answers to the questions on the blank the fine will not exceed \$2000 or will not exceed one year's imprisonment, or both, in the discretion of the court. In case of sickness or absence from home you may get an extension of time by written application to the collector of internal revenue, in which must be stated the reasons why the return cannot be rendered in the time prescribed by law.

If you dodge the tax this year and next, or for years to come, look out for the day of reckoning when somebody reports you and the government collects all back taxes with the penalties of five per cent of the amount of tax due and one per cent interest for each full month which the tax remains unpaid. It is cheaper to pay every year and not try to dodge it.

### Who Must Report Incomes?

Every unmarried person having a net income of \$1000 or more, and every married person having a net income of \$2000 or more, in 1917, must report before March 1, 1918 to the collector of internal revenue for the district in which the taxpayer resides. It is necessary that you find out whether you have an income that will make you taxable under the new law. So you had better get out your pencil and do some figuring.

The law defines income as profit, gain, wages, salary, commissions, money or its equivalent from professions, vocations, business, commerce, trade, rents, sales or dealings in property, real or personal, and interest from investments, except interest from government bonds or any state, municipal, township or county bonds. Income from service as guardian, trustee or executor; from dividends, pensions, royalties, or patents, or oil and gas wells, coal lands, etc., and income from all sources are taxable under the law if the net income from all sources come to the sums named.

It is going to be some task for a farmer to find out what his income was. Few keep books, especially of the smaller items bought and sold. It is counted as sale if you take butter, eggs, apples, potatoes or any product you have raised to the store and "trade it out" for groceries, wearing apparel, or what not. Living expenses cannot be deducted, so you must figure the value of the farm products traded for something, as though you sold the products for cash. It is nothing to the tax collector whether you got cash or sugar for the product.

The same is true of real estate. If you sold part or all of the farm they figure as profit or income the difference between the cash value March 1, 1913, and the price for which sold, or the difference between its cost and selling price if acquired on or after March 1, 1913. Rents are considered income whether paid in cash or in part of the crop or otherwise.

### What Is Exempt?

Of course there are exemptions. The single person who is supporting dependent children or dependent parents or crippled relatives who cannot help support themselves is considered the head of a family and has the same exemption, \$2000, as a married person. Unmarried persons with incomes of less than \$1000 and no dependents are exempt from the tax.

Where husband and wife both have incomes they can report together and claim one exemption, or report separately and divide the one exemption between them. In case they are divorced or living apart, the one caring for the children can claim full exemption and the other only \$1000.

There is an exemption to the extent of \$200 for each dependent child under 18 years of age. Suppose your net income figured up to \$2800 and you have four dependent children under 18 years, you would be allowed \$800 deduction for them.

### Other Exemptions

There is a certain depreciation in the value of property which is exempt. It runs as follows: five per cent on frame buildings and two and a half per cent a year on brick or stone buildings; ten per cent on the cost of farm machinery and implements. But this deduction must be based upon actual depreciation through use or partial destruction. If its value is the same as the year previous there is no deduction.

In case of loss by fire, theft, or storms, not covered by insurance, you can deduct the fair market value of the property. This applies also to machinery, implements and farm buildings. You can deduct losses in trade or business provided the loss was actually suffered. But you can't deduct for hogs lost from cholera or cattle from sickness unless you had bought them, and then only in the amount you paid for them. Neither can you deduct for loss of any stock or grain or feed that you have produced because you are not required to report on these until sold.

You can deduct incomes from liberty bonds and certain other public bonds and gifts to religious or charitable or educational institutions to the extent of 15 per cent of your taxable income, provided no part of the gift goes to an individual stockholder in said institution for his benefit.

All salaries or compensation paid by the state or political subdivisions of the state are exempt. That is, if you are a county supervisor or something whereby you get a per diem or salary, this does not have to be counted in the income tax report.

### What Is Not Exempt?

Your living expenses are not to be deducted from the total. And you cannot deduct any charge for any personal service rendered in the business, or for any member of the family working at home. You can't allow for a salary to yourself. But you can de-

duct for cash paid hired help as a part of the running expenses of the farm. Even where sons or daughters work for the parents at a wage, the wage must be paid in cash as to strangers and then this expense may be deducted. If this is done to avoid the tax there is severe penalty.

"All necessary expense actually paid within the calendar year in carrying on the business" may be exempt from taxation. The question is: What is necessary expense? The family and personal expenses are not so considered. Your groceries, fuel, light, clothing, things like a piano for the home, are personal or family expense and not deductible.

But you can deduct taxes, except income taxes and those assessed against local benefits. Deduct interest paid on your indebtedness, insurance except on your dwelling; seed and feed purchased; stock bought for resale, cash paid for hired help, but cannot deduct as part of the wage the value of their board, lodging or washing.

You can deduct for the necessary repairs, but not for permanent improvements nor for new machinery. You can deduct for small tools and for the cost of running your machines, such as tractor, threshing machine, etc. However, you can not deduct for the cost of running the family auto if used as a pleasure car. If used only as a part of the farm machinery to run about on business its cost of operation can be deducted.

In brief this is the new income tax law. It is up to you to see the income tax man. Don't think the tax does not apply to you. Find out by talking with him and when you go to see him have all figures ready showing what you took in and what you paid out.

The government is going to send its income tax men out where it will be easy for you to get to them. An income tax man is going to be in every county in every state in the Union sometime between January 2 and March 1. Watch the local newspapers or ask your banker or postmaster when he'll be there, or near your place, and then go to see him. He will have tax form for you, help you make it out, answer all your questions, and won't charge anything for his services.

Don't neglect the income tax because if you do you'll regret it later when the government finds you out, as it will, and makes you pay the penalty for failure to obey the law.

### Penalties

For failing to file income report before March 1, 1918, not less than \$20, nor more than \$1000, and in addition 50 per cent of the amount of the tax due.

For failing to pay tax before June 15, 1918, five per cent of the amount of tax due, and one per cent interest for each month tax remains unpaid.

For making false report, not exceeding \$2000, or not exceeding one year in jail, or both.





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They are so scientifically constructed that you can do 3 to 6 times as much as with old-fashioned tools in the same time, and get bigger and better crops because of more thorough cultivation. 45 years of practical farming and manufacturing experience is back of every Planet Jr. Fully guaranteed.

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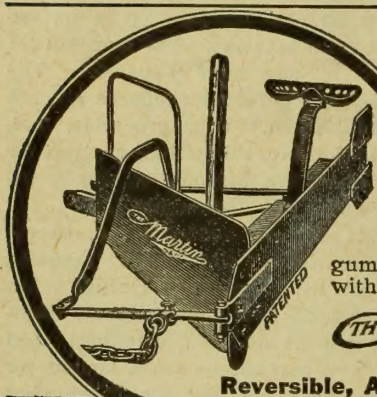
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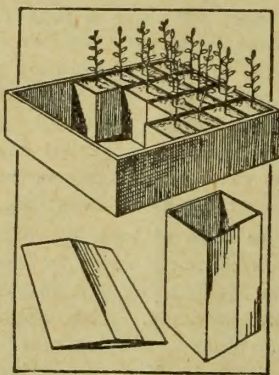
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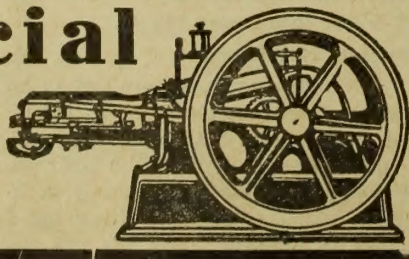
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## Lime—Its Value and Use

By Gilbert Ellis Bailey

**S**OME people still think that all rocks are something made somehow in the early days of the world during a great turmoil of fire, heat and vapors. The fact is that rocks are being quietly formed now, as they have been in the past, by agencies that scarcely attract attention.

One of the most common, most extensive, and most valuable rocks known has been and is still being quietly formed, and mainly by plants of simple structure.

### Limestone

The limestone formations of the mountains, the corals of the seas and the marls of the ponds are all mainly from the secretions of vegetable life, each particle at one time resting in the cell of a plant. Animal life has supplemented this work, but vegetable action has been the dominant one.

Nature in the past has simply been storing it up for our use in the present. The fact is that the agricultural world is just beginning to wake up to its importance to plant growth. A glance at its origin emphasizes and explains its value to the farmer.

All organic matter is made up primarily of carbon (C), hydrogen (H) and oxygen (O). Land plants derive their C, H and O from the air and soil atmosphere; but aquatic plants must secure theirs from the water.

All know that nearly all waters, especially "hard waters" and ocean water contain lime in solution. All know that lime largely forms the bones of animals, sea and fresh water shells, and the hard parts of hens' eggs, worms, some sponges, and most corals.

The lime secreting algae which grow so rapidly at various depths and temperatures in both sea and fresh water are the great limestone builders. Through all geologic history they have been at work taking the lime from the ocean and land waters which now form the strata of the mountains, the deposits of the valleys, and the lime in soil and subsoil.

The algae are seaweeds and water-dwelling plants which have existed from the earliest geologic records (pre-Cambrian) to the present time. One lime secreting alga (Halimeda) of the present oceans contains over 90 per cent of lime and forms extensive deposits of limestone in the lagoons in coral regions. The "coral insect" (Anthozoa) and the "sea lilies" (Crinoidea) of the past belong to the border line of plant and animal life; and the coral reefs of the past form many a lime-kiln quarry of today. The rock weed (Fucus) exposed at low tide; the large alga or "devils-acorn" (Laminaria), and the huge masses of the Sargasso sea are now busy secreting lime for strata and soils yet to be used as the world grows old. The common stonewort (Chara) of the fresh water lakes secretes so much lime that it encrusts its leaves and stems, making them white and brittle, and on their death this settles into the mud, making marl. Even the common green alga floating on the ponds, forming frothy masses called "pond scum," contributes its quota of lime. Myriads of microscopic forms of vegetable life are sending an unceasing shower of lime particles into the sediments underlying water that in the future will become soils.

### Lime Defined

There is much confusion with ref-

erence to the actual nature of lime and its use in agriculture. The term is applied indiscriminately to many combinations of lime. Strictly speaking the use of the term should be restricted to calcium oxide. All lime minerals contain this, and it is the particular portion of the mineral or compound that is of interest to the farmer.

Pure limestone is carbonate of lime or calcium oxide plus carbon dioxide. When pure limestone is well burned it loses 44 per cent of its weight, by driving off the carbon dioxide. Therefore 56 pounds of fresh burnt lime is equal to 100 pounds of pure limestone. This fresh burnt lime will absorb water and form 76 pounds of slacked lime, or hydrated lime. For farm purposes therefore 1200 pounds of fresh burned lime, or 1500 pounds of hydrated lime, or 2000 pounds of ground limestone, all contain the same amount of actual lime and have the same final result on soils and crops.

### Acid Soils

The beneficial effects of lime in agriculture are many, the most common being the neutralizing of soils made acid by decaying organic matter. The "sour," or acid, soils check plant growth, stop beneficial bacterial action, stimulate action of harmful bacteria, and cause direct loss of nitrogen. Sour soils cause "sour sap," which causes the death of thousands of peach, almond and other trees, and does damage in other ways. Lime in the soil is the remedy.

### Humus

The popular saying that "a limestone country is a rich country" is so true that one does not have to be a botanist to see the change in vegetation as well as in prosperity as one enters a limestone agricultural district, as in Kentucky. Humus is the very life of the soil and lime is essential to the existence of normal humus. Without humus fertility is almost impossible and much plant growth is at a standstill.

What is wanted is the quick conversion of vegetable matter into black neutral humus, but it will be acid and not neutral if lime is not present. Production of the dark tinted appearance of true calcareous lands requires only about 0.2 per cent of humus in sandy soils, while the percentage must rise to nearly 1.0 per cent for clay soils.

### Bacteria

Lime is the key to the great storehouse of nitrogen in the air.

The bacteria can take nitrogen from the air but cannot keep it unless they have something to fix or bind it to. This something is lime. The bacteria form nitrate of lime, which is soluble in water and is thus able to enter the sap of the plant.

The plant in turn uses the nitrogen in forming its leaves, its fruits and its flowers, leaving the lime stored in its cells. Thus in a test plot it was found that wheat and barley each removed from one acre of land nine pounds of lime; oats 11 pounds; turnips 74 pounds; clover 90 pounds, and legumes in general much more than this.

Legumes must have not only ample supplies of lime, but large supplies of nitrogen also, and must be inoculated with the nitrogen bacteria, and the soil must be limed. As the lime contents become scarce, bacterial



activity decreases, seriously interfering with the normal decay of the humus and resulting in a marked lowering of the crop production.

#### Potash and Phosphorus

Lime is needed in the soil for the chemical changes that liberate potash and phosphorus. Potash is held so securely in the soil particles, combined with silica (quartz), that it is unavailable and useless as plant food until lime combines with the silica and sets the potash free. The phosphorus in the soil is often combined with iron and alumina and is useless until lime changes it into phosphate of lime which is soluble and in form for the plants to use.

When lime is absent from the soil even high percentages of potash and phosphorus prove insufficient for good crop production. When a large per cent of limestone is present in the soil lower percentages than normal of potash and phosphorus are adequate for crop production.

#### Fruits

Fruits grown on limestone soils show a stocky, steady, vigorous growth and the fruit ripens well. With stone fruits the lime strengthens the stem and woody portion of the tree, shortens the period of growth and hastens the time of ripening. Grapes, citrus and other fruits flourish best in lands moderately calcareous; and many claim that an adequate—not excessive—supply of lime in the soil will produce sweeter fruit than when the lime supply is deficient.

#### Physical Effect

Lime makes loose sandy soils more compact and retentive of moisture. A small amount of lime will cause flocculation of clay, holding the soil crumbs together as the moisture dries out. It thus improves the texture of clays, destroying their adhesiveness and making them more open and mellow, of good tilth, easier to work, and favoring the penetration of air and water.

#### Loss by Leaching

It is well known that lime is the ingredient that is leached out of all soils by drain waters. When water evaporates as in the tea kettle, or boiler, the lime is left as a crust. The weakest of acids, such as the juices of fruits, decomposes limestone, setting the gas free and allowing the lime to be used by the bacteria, provided it is not lost by leaching.

In a residual limestone soil only three feet deep it was found that over 80 per cent of the original lime had disappeared through leaching. These facts should make it clear to every farmer that the supply of lime should be renewed every few years.

#### Mining on the Farm

When a farmer wants more lime he has several sources of supply. He can find a supply often in the subsoil by shattering it with explosives so that the plant roots can go down and help themselves. By the use of explosives he can readily develop lime in the substratum even to depths of 10 and 15 feet. Sometimes hardpans are formed by the lime that has leached down, forming a cemented layer whose existence he has mourned over. Explosives change this nuisance into a blessing, for with explosives he can shatter the hardpan and own a nice lime quarry right where the plants can use it without any further effort on his part.

#### Plant Miners

There are special forms of plant life that will do the mining for the farmer and pay for the privilege.

These are the legumes, the peas, beans, soy beans, clover, vetch, alfalfa, sainfoin, fenugreek, etc. They cannot prosper without lime and will send their roots deep down into the soil shattered by explosives in search for this mineral.

After these legumes have been used for cover crops, green manure, forage, or silage, the nitrogen, lime, and humus in the stubble are buried in the

soil ready to feed crops, from corn to cotton, from potatoes to oranges, with the indispensable lime.

#### How to Use

Air slacked lime is the quickest, but fine ground limestone is safer, as it may be applied in almost any quantity at any time and cannot injure anything. Put on after plowing, never before, and harrow in some time before legume or other crop is planted.

## Nicotine Sulphate for the Garden

By F. H. Chittenden, United States Bureau of Entomology



**F** METHODS of control for soft-bodied sucking insects such as aphides or plant-lice, nicotine sulphate has given the best results. Tobacco has also been used in recent years to a considerable extent for greenhouse fumigation, but most other compounds have been superseded by nicotine sulphate and nicotine fumigating papers.

A solution of nicotine sulphate, standardized to contain 40 per cent by weight of nicotine, abbreviated to "nicotine sulphate 40 per cent," has given the best results. It has been tested practically wherever melons and other cucurbits are grown on a large scale, and especially in California, Illinois, Florida, Oklahoma, Texas, and in several other states, both by experts of the bureau of entomology and other practical workers. It was used on one occasion at Turlock, on 800 acres of watermelons and cantaloupes, with excellent results.

While we recommend nicotine sulphate 40 per cent for the melon aphid, no claim is made that it is a magic remedy, since careful application is required as in the case of all other insecticides.

Nicotine sulphate is used according to what is known as the 1-1000 formula, or one part of nicotine sulphate to 1000 parts of water. To this mixture should be added sufficient soap or similar spray material to act as an adhesive or "sticker" and as a "spread-er." Common laundry soap is cheap, easily obtained and satisfactory for the purpose. The amount required

may be estimated on the basis of one pound to each 25 gallons of the mixture.

For purposes of quick estimation, the following formula will be found to combine the ingredients in the proper proportions:

Nicotine sulphate 40 per cent, three ounces, fluid;

Yellow laundry soap, one pound, avoirdupois;

Water, 25 gallons.

The spray is most effectively applied by a power sprayer since a much more even distribution is effected. Such a sprayer may be equipped with four lines of hose, each fitted with one or more wide-angle nozzles provided with elbows and operated by one man to each row. For hill spraying a hand-sprayer, costing about \$1.25, is generally used.

It should be added that nicotine sulphate is designed especially for insects which derive their food by sucking. Arsenicals like arsenate of lead and Paris green are used for insects which derive their food by chewing or biting.

#### GETTING EVEN

Why do you insist on trying to sell me beefsteak and beans and buckwheat cakes?" demanded the barber. "I told you all I wanted was two fried eggs."

"Well, I was in your shop yesterday," retorted the restaurant man. "All I wanted was a shave, but you bulldozed me into a shampoo, a foam fizz, and a tonic rub." — Louisville Courier-Journal.

#### APPLE PRODUCTION IN THE NORTHWEST

The principal apple producing sections of the Northwest are approximately: Walla Walla, Washington, 500 cars; White Salmon and Underwood, Washington, 200 cars; southern Idaho, 2200 cars; Yakima Valley, Washington, 8500 cars; Lewiston, Idaho, 250 cars; Bitter Root, Montana, 500 cars; Hood River, Oregon, 1200 cars; Medford, Oregon, and adjoining districts, 1500 cars; Wenatchee, Washington, 8000 cars; Spokane, Washington, 650 cars.

#### NOT ANY MORE

They were gazing out of the window of the Pullman car. The thin man was rapturously admiring the sunset.

"Ah, Nature is a real artist," exclaimed the thin man, addressing the fat man who sat in the opposite seat. "Have you never gazed at her wonders? Have you never watched the lambent flame of dawn life leaping across the dome of the world? Have you never watched the red-stained islets floating in lakes of fire? Have you never been drawn by the ragged, raven's-wing, sky-fantoms as they blotted out the pale moon? Have you never felt the amazement of these things?"

"Not since I swore off," replied the fat man, as he prepared to hunt another seat.—Cincinnati Enquirer.

#### INCUBATION

"Mr. Christy," said the teacher of the class in rhetoric, "point out the absurdity in this figure of speech: 'At this time the illustrious statesman hatched out a scheme'."

"It seems all right to me," said the young man, after a few moments' reflection.

"It does? Explain, if you please, how he could have 'hatched out a scheme'."

"Well, he might have his mind set on it," returned the student placidly.

I find the gayest castles in the air that were ever piled far better for comfort and use than the dungeons in the air that are daily dug and cavered out by grumbling, discontented people.—Emerson.

## PLANT TREES

Do your "bit" toward insuring a supply of food for the world's millions.

The best varieties of trees are selling out fast.

Shipping Plums, Prunes, Cherries, Pears, Olives, Almonds, Apricots, Peaches—all are equally profitable according to your location. No other investment their equal.

Our foothill trees are free from the root diseases common to other localities. Pedigreed parentage—roots fibrous and well branched—trees hardy and of toughened fibre—features that spell success in tree planting, and in your orcharding.

Submit me a list of your wants for special quotations. Do this now while our assortment is complete. Mail your list right now to Dept. J

Remember! We will take your Liberty Bonds in full or partial payment for trees.

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Roots such as are grown only on our foothill soil and location. THEY ARE TREE INSURANCE



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Miller's Late Peach

## OLIVES

In all of the olive sections of the State, Armstrong Olive Trees are known as thrifty, vigorous trees, with an abundance of fibrous roots—so essential, particularly in an olive tree, for the development of a uniform grove. In planting such trees you take no chance of finding it necessary to replant from 25 to 60 per cent of your trees.

"Your olive trees, planted here last year, have made a splendid growth, and have given perfect satisfaction." — A. W. Munn, Sacramento Co., Calif.

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Bring your land into the profit class quickly by planting Tuscan or Phillips Cling Canning Peaches. Easy to plant—grow rapidly—bear early—big demand at canneries. Also we have the best of the extra early, medium, and late varieties for shipping, canning and drying. Inter-crop with some good crop for which your land is suitable. By so doing your orchard will more than double the value of your land in four or five years at practically no cost.



Ascolano

## WALNUTS

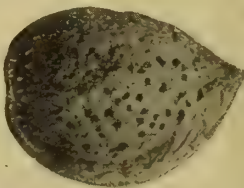
When you plant a Walnut tree, plant a GOOD, DEPENDABLE TREE. Armstrong Walnut trees are grafted on the native California Walnut by men who know how to make the grafts—how to take care of the tree—how to harden the wood—how to dig the tree and preserve all the root necessary to insure a strong, vigorous growth. This is INSURANCE to the planter. Our Nurseries are free from Walnut blight. Varieties—Placentia, Eureka, Neff, Mayette, Franquette.



Eureka Walnut

## ALMONDS

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Nonparel Almond

## Orange Drop

Written for California Cultivator



SOMETIME ago, in conversation with Dr. J. Eliot Coit, he referred to investigations which he and his assistants were making in regard to a fungus which he believed to be the cause, in part at least, of the ordinary June drop. These investigations have now been carried near enough to conclusion to justify publication of a bulletin which, as noted in Dr. Coit's letter following, will be issued sometime during the present month. Dr. Coit's letter was brought out because of requests for information by Horticultural Commissioner Collins of Tulare County. Dr. Coit writes:

"While it will be several years, no doubt, before this investigation is completed in all its phases, still we feel that inasmuch as the causes of the trouble and the nature of the phenomena appear to have been uncovered, a progress report is warranted. A bulletin giving a brief digest of the situation is now in press.

"You may be interested to know that a second year's work has brought out the fact that the fungus, *Alternaria citri*, as previously reported is not the only cause of drop. It has been found that much of the early dropping is caused by water deficits in the fruits caused by the climatic conditions. There is a good deal of overlapping of those two causes. Many of the fruits which fall early from climatic conditions are infected with the fungus and would have fallen later from that cause.

"Investigations of the distribution and nature of the fungus have shown that honey bees do not appreciably increase the amount of infection. It is also shown that the mode of infection is a serious hindrance to successful intervention by means of fungicidal sprays. We are led to conclude therefore that spraying with fungicides alone can hardly accomplish enough good to pay for the materials and labor. We believe that while June drop cannot be eliminated entirely on account of the impracticability of controlling the weather; still it may be quite possible to so modify environmental conditions as to secure a marked increase in crop and greater profits. Suggestions as to how this may be accomplished are made in the bulletin referred to above which we hope may be ready for distribution some time in January."

In addition we have read interesting notes made by Dr. Ford A. Carpenter of the Los Angeles station of the United States weather bureau. Dr. Carpenter made extensive investigations following the hot wave of last June which removed probably 75 per cent of the usual Navel crop from the trees. Dr. Carpenter goes at some length into the contributing causes of hot waves, in which he says:

"In the late spring, summer, and early fall when highs cover the North Pacific states and plateau region, light to moderate north to east winds prevail over California, and the cool ocean influences are checked or held back. The sky is clear and insolation is great, and the air is heated dynamically in moving down the mountain slopes, causing very high temperatures in the valleys and Coast sections. When these conditions are very marked they produce hot waves."

Summarizing his investigations in a short paragraph he adds:

"Summarizing the effect of the hot wave on farm products it is generally conceded that the most serious loss will be the Navel orange crop, which in some sections is almost a complete loss. Other varieties of oranges were not seriously damaged. Lemons were injured in instances where a considerable amount of mature fruit was on the trees. Much of such fruit was burned while hanging on the trees. Fortunately the greater part of the lemon crop had been picked prior to the period of great heat, so the damage loss is confined to autumn lemons. In this connection it may be remarked that lemon trees are continually in blossom, bud, and fruit. The citrus trees, as such, were not injured. Walnuts had a splendid setting prior to the heat wave, and, while the loss has been considerable, it is believed that the net gains this season will exceed those of last year. Garden truck withstood the heat very well; only early tomatoes were seared; in one district a crop of tomatoes valued at \$50,000 became a total loss. Had the heat wave been preceded by several weeks of normally warm weather, vegetation would have accustomed itself to the steadily increasing temperature, but the suddenness of the mounting temperatures and the steadiness of the driving winds followed too closely upon months of cool, moist weather."

## Spraying the Citrus

Written for California Cultivator



FLORIDA has had vastly more experience in the spraying of citrus trees than California; this largely because fungus troubles find more congenial conditions there than in California. In an address made recently by Prof. Stevens of the University of Florida at a citrus seminar he referred to some of these fungous troubles such as fruit rot, anthracnose, citrus scab, melanose and other serious troubles. We gave in a former issue a portion of his address which touched upon wither-tip.

These other troubles are handled mostly with Bordeaux spray. Fruit rot, for example, which is of course more serious during the humid weather, is caused by the blue mold securing entrance to the fruit through bruises or otherwise.

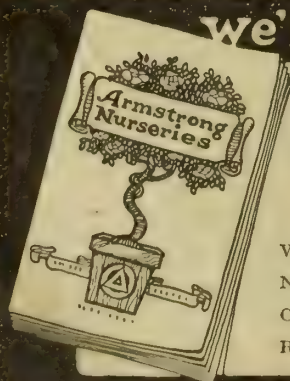
Another cause of trouble is insect

pests, that is, through weakening of the tissues of the fruits by insect attacks the mold secures entrance, so that spraying must take into account the eradication of the insects as well as directly the mold.

For anthracnose he recommends spraying with a good fungicide, preferably Bordeaux, at intervals of ten days until the disease is checked.

For citrus scab, 3-3-5-Bordeaux formula is considered sufficient. Spray freely in the earlier growing stages. On young trees or in groves where only a small amount of the disease is present, the infected foliage may be pruned off to advantage. It should be destroyed. All worthless sour, or rough lemon trees in the vicinity of grapefruit groves should be destroyed, or freed from the disease, as they form continual sources for spreading the scab. Badly infected fruits should

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Walnuts ☐ Almonds ☐ Ornamentals ☐

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Name .....

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be destroyed and not allowed to rot in the groves or near the packing houses, as they are also sources for spreading the disease.

For melanose: Keep all dead wood out of tree for that is cause of infestation, and spray with Bordeaux.

Prof. Stevens gives the following suggestions as to control:

"Fruit and foliage diseases, as a rule, may be controlled or held in check by spraying. From one to several applications of some standard fungicide may be necessary. A fungicide serves merely as a protective covering for the leaf or fruit and must be applied at frequent intervals, and before the fungus has entered the tissue, to be effective. Applying a fungicide after the disease has become visible will not remove the injuries that have developed and in many cases sprayings made at this time are merely a waste of time. However, there are cases even when the disease is visible, when spraying may be used to advantage to check its further spread.

"The effectiveness of any system of spraying for disease control will depend upon several important conditions which may be listed about as follows:

"A reliable fungicide must be used and in sufficient strength to kill the fungus spores.

"The fungicide must be properly prepared, following strictly the directions given for its preparation.

"Spraying should be done before the disease becomes visible. Since the fungicide is to serve as a protective covering it must precede the spores.

"The spray should be applied under high pressure (180 to 200 pounds), and in the form of a fine mist. The object should be to obtain a thin covering over the surfaces exposed.

"Fungicides must be applied frequently as the efficiency of a single application may not extend beyond a period of ten or 14 days.

"There are certain limitations to the use of fungicides in the citrus grove, and at present we can hardly recommend spraying with them as a general practice. For the control of certain diseases they are necessary and must be used, but they should be used with caution at all times. This is particularly true in regard to Bordeaux mixture and the ammoniacal solution of copper carbonate. Just to what extent the lime sulphur solutions may be used as fungicides on the citrus tree is still a matter of experiment."

**MOVED**

The Cultivator has referred to the removal of the pathological laboratory formerly located at Whittier to the citrus experiment station at Riverside, but we have a note from the clerk of the Riverside station saying that owing to their long time connection with the pathological laboratory at Whittier, Professor H. S. Fawcett, C. O. Smith and E. E. Thomas are often written to at Whittier. Inquiries should be mailed direct to Riverside, care Citrus Experiment Station.

The University of California and the Fresno farm bureau united in the second annual fig institute which is being held in the high school of Fresno this week. This is one of the most important meetings having to do with fruit growing in this state. It has to do exclusively with figs, but Fresno is the center of this great industry which every year is growing in importance. It is well that it should, for this country is importing millions of dollars worth from Asia annually.

**A Good Crop**

Spot and Report the Trees Which Grow It



HERE and there, even in the warmer valleys where nearly all Navels dropped from the trees after the "June hot spell," are individual trees which still carry large crops. Mr. Shamel terms these trees resistants. Regarding them and the desirability of locating them he says:

Some of the leading citrus growers feel sure that there exists today in some California Navel orange orchard, —where the extreme heat and low humidity of June caused most of the crop to drop,—individual trees, that, by reason of their inherent resistance to extreme heat and low humidity are bearing normal crops of oranges! Further, it is the belief of these men that if these trees are found and buds from them propagated, the progenies of some of these trees will retain the resistant qualities of their parents.

Such progenies would constitute the beginning of a valuable improved, resistant Navel orange strain.

Never before in the history of the California Navel orange industry has there been so good an opportunity for finding productive resistant Navel orange trees, and every Navel orange grower should study his orchard and find out whether or not he has any such trees in his possession. From now until picking time is our opportunity for discovering such valuable trees.

In orchards where the heat and low humidity, or other extreme climatic conditions caused the most damage, it seems that the chances are best for finding hardy and naturally resistant trees. If any trees with good crops are found in such orchards, these trees should be marked so that they can unmistakably be relocated. When

picked, a record of their crop should be made.

It is possible that the crops on the fruitful trees, in otherwise barren orchards this season, may be due to other factors than inherent resistance to extreme climatic conditions. When found, the conditions around the trees must be studied from this viewpoint. If, after careful consideration of all known conditions it is concluded that the productive trees are bearing crops on account of their natural resistance to the extreme climatic conditions of the past winter, spring, and summer, such trees should be watched, their crops measured, and experimental propagations made from them by the use of carefully selected buds.

Every one who owns, or has access to a Navel orange orchard should, as a matter of public welfare, make every possible attempt to find hardy bearing trees this fall and winter. Many authorities agree that there is every likelihood that such trees exist in our orchards this fall. It should be our business to find them.



**Selecting' Nursery Stock**

Never forget one point in buying trees, viz.: that when purchasing "Roeding True Trees" nursery stock, you are buying from a firm that has devoted nearly a third of a century to the practical study of growing the very best trees that money, study and an inherent love for perfection in a tree can develop.

Remember also that buying trees is different from the average merchandising. It is not today or the morrow that tells the story, but it is three or more years of hard work, in cultivating, irrigating, pruning, etc., before your hopes are realized.

From the planting of the seed to the time our trees reach patrons, every care that human ingenuity can devise is carefully observed.

**CHERRIES**

We have this year a fine stock of all the leading varieties of cherry trees—they are vigorous and well rooted.

**PEACHES**

Growers throughout the state received handsome returns from their peaches this year.

**NECTARINES**

This delicious fruit is becoming more and more popular, and a larger acreage should be planted.

**APPLES**

Our list includes all the desirable varieties for home and commercial planting on the Pacific Coast.

**OLIVES**

The acreage planted to Olives does not begin to keep pace with the demand for olive oil and ripe olives.

**WALNUTS**

Walnuts are considered by many experienced planters as the most satisfactory crop to raise—the demand is strong and good prices usually prevail.

**PECANS**

The improved papershell type of Pecans should be planted for commercial purposes—our catalog deals at length on the subject.

**ALMONDS**

Twenty-five years ago California produced 150 tons. The average Almond output now is 3000 tons. The demand for this nut more than keeps pace with the increased acreage.

**Plant  
An Orchard**

If you have land suitable for tree culture, you can make it intensely profitable by planting fruit trees. We are always pleased to hear from prospective fruit growers and to render them every assistance possible in the selection of trees best adapted to their locality.

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Do you own an orchard? Or are you going to plant one?

If so, you will find information worth many dollars to you in the **Giant TREE BOOK**, "Better Orchard Tillage."

This book is written especially for Pacific Coast fruit growers. It tells how to have thriftier, faster-growing, earlier-bearing trees by planting in beds blasted with



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It tells also how to secure better drainage and increased moisture-storage capacity in established orchards, and how to get larger yields and save money on fertilizers.

The book contains illustrations that show exactly how to do the work. There are chapters on preparing the beds for trees and increasing the plant food by deep tillage. Also there are directions for blasting in established orchards or groves, and interesting letters from many prominent fruit growers.

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## January in the Vegetable Garden

### Southern California

Written for California Cultivator By D. F. Reichard



ANY of us have been waiting for the rains to soak the ground so that it can be worked into shape for early planting. If the rains do not come shortly irrigation will have to be resorted to. It does the soil lots of good to have it turned up to the weather for a month or so, especially after it has been intensely cropped for some time. Work into the soil as much rough fertilizer as possible, such as stable manure, leaves and green crops; these all add humus to the soil as well as chemical properties which go to make plant foods for future crops.

During January hot beds or cold frames should be made to start tender plants like egg plant, tomato, pepper and sweet potato settings. A hot bed is made by digging a pit at least six by ten feet, 12 to 18 inches deep. Put in the bottom a layer eight to ten inches deep of manure that has been piled up and allow to heat for a couple of weeks. Turn it over, mixing well, and pack into the pit to the desired depth. This treatment of the manure reduces the intense heat that would otherwise burn the young plants as they come up in the bed, leaving it in a condition in which it will generate heat for about four weeks, by which time the young plants will be strong enough to continue their growth either where they are or transplanted to a cold frame. On top of the manure put a layer of well pulverized rich soil four to six inches thick. At the north side of the bed put two 12 inch boards on

edge, burying the lower one about half its width; on the south side use only one board buried a half; this gives the proper slant to admit sun and shed rain. Board up the ends, cover the whole bed with either glass frames or light muslin cloth which are removed during the heat of the day, always being replaced an hour before sundown. Settle the whole bed by wetting thoroughly, but do not put on so much water that it will drown the heat of the manure. In a day or two work up the surface and plant the seeds.

A cold frame is made by simply building the frame facing the south as in a hot bed. It has no artificial heat. By putting down the covering early in the afternoon there is enough heat retained to keep warmth over night. Do not take up room in the hot bed or cold frame for anything but tender stuff as the climate of Southern California will permit the growing of all hardy and semi-hardy plants from now on.

Plant in the open ground for succession the following; Egyptian beets, Half long carrots, Swiss chard, New York Special Lettuce, onions in variety, radish, spinach and turnips. In protected sections early potatoes, peas and Canadian and Ventura beans may be planted. Plant seed of cabbage, cauliflower and kale for transplanting later.

Made beds ready for asparagus, rhubarb and horseradish roots; they should be set out this month. Small fruits and deciduous trees should be planted within the next month or two.

## Northern California

Written for California Cultivator By A. R. Gould



UP TO the time of writing we are still without our real share of the usual first rains. True, we had a few drops some two weeks ago but this was only in some scattered sections and important districts such as the San Joaquin and Santa Clara Valleys are dry. As a result of these conditions our planting operations have naturally been very much delayed, and many of our most important crops will be late, as moisture is very necessary to assist germination. However where it is practicable to use the sprinkler, as in a small home garden, or irrigate, we can get ahead, and we must await our opportunity to plant on a larger scale as the rains arrive. We must take every advantage of the present conditions and get the ground in good shape and all rubbish cleared off ready for planting our crops for the next season. Raspberry canes should be attended to. There will be a few old canes to cut out and new ones tied in and the tops cut off, leaving the canes about four feet long. Farmyard manure should be dug in around between the rows, or a good fertilizer such as bone meal may be applied.

### Strawberries

The established plot should have a good dressing of manure, farmyard or artificial, dug in between the rows. Young runners, or plants, may now be severed from the parent plant and new plots formed.

### Carrots

Make a sowing of Early Shorthorn and French Forcing, two very suitable

varieties. Sow seed thinly.

### Cabbage

Seed should now be sown of such early varieties as Early Jersey Wakefield and Early Spring on a prepared seed bed.

### Artichoke (Globe)

Plants of this very popular vegetable may be put out this month. The old clumps may be divided and the younger plants thus secured. They should be planted three feet apart in the row, while the rows should be four feet apart. Plant in fairly rich soil and keep well watered, especially after they are well established.

### Rhubarb

Roots of these may now be planted three to four inches deep and three feet apart. The soil should have been deeply dug and richly manured. The best varieties are Crimson Giant Winter and Victoria.

### Spinach

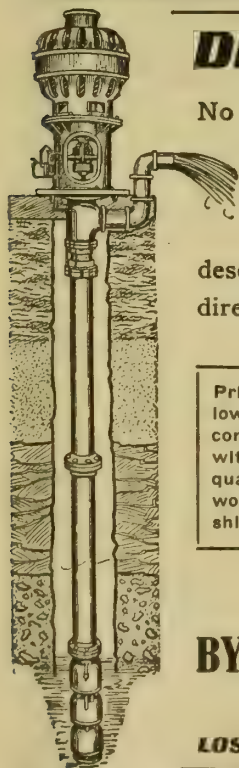
This is a hardy vegetable and should be more widely grown. Seed of the variety known as Prickly may now be sown, also Victoria, a hardy long standing variety. One ounce of seed will sow a 100 foot row. A good rich soil is needed to get the best results.

### Kale

Another hardy plant and valuable for use in the kitchen or poultry yard should be sown in quantity. Sow the Dwarf Curled Scotch and Tall Green Curled.

### Broccoli

Sow seeds of Early Large White on

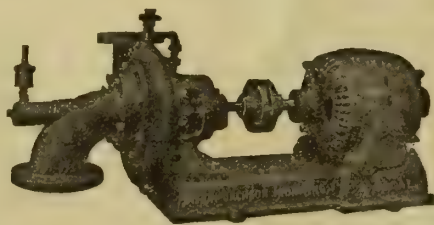


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a well prepared seed bed. Seed should be sown thinly, broadcast.

#### Kohl Rabi

Seeds of this vegetable should be sown in rows and later thinned out to 10 inches apart in the row. Early White Vienna is an excellent variety to grow. A fairly rich soil is required.

#### Horse Radish

Roots of this are used by many good cooks, and a few clumps planted in

the garden now will supply your needs. The roots must be planted four inches deep.

#### Peas

Continue to make successional sowings of the early varieties, Little Marvel and Alaska, as mentioned last month. Apply the sprinkler and irrigate where possible to assist germination. The seeds may also be soaked 12 to 14 hours before sowing.

## January in the Ornamental Garden

### Northern California

Written for California Cultivator By A. R. Gould



ANY of our readers may have a spare plot on the ranch or near the residence which may have a few trees here and there, and the situation may lend itself to the formation of a wild garden and it may not mean the expenditure of much labor to so transform this spot into nature's fairyland.

#### Hints on the Formation of a Wild Garden

While there will be a little planning to do it will not be necessary to make straight paths or square flower beds. It is the informal effect which we have to aim at, and to attain this we must endeavor to copy nature in its wild ways. If a few paths are required they should be winding, and the plants should be grouped to conform. Native shrubs may be used with effect, and among these we might mention the beautiful ceanothus of which thrysiflorus, arboreus, tomentosa and divaricus are all good varieties. Other fine flowering shrubs are Calycanthus occidentalis, Carpentaria Californica, Romneya Coulteri "Tree Poppy," and Freemontia California. Among the berried shrubs are the "Madrona," Arbutus Menziesii and Heteromeles arbutifolia, "Toyon." These shrubs should be grouped and here and there large masses of foxgloves, iris (German) and forget-me-nots may be plac-

ed. Beds of violets also look beautiful. Many charming effects may also be secured by massed planting with bulbs, and crocuses, snowdrops, snowflakes, daffodils and narcissus lend themselves to this work. Then there are many wild ferns such as the Woodwardia, Lomaria Aspidium rigidum and Adiantum pedatum, which can be grouped around the base of trees. For a good ground cover in almost any situation plant the English ivy and allow it to ramble.

#### Violas and Other Spring Flowers

Violas, primulas, polyanthus, primula auricula, aubretia, double daisy, alyssum saxatile and Arabis may all be planted out now, and in a few months will supply lots of color.

#### Gladiolus Early Flowering

If not already planted secure bulbs of the early flowering types; Blushing Bride, Peach Blossom, The Bride and Ackermanni. They should be planted three inches deep and eight inches apart.

#### Some Little Known Bulbs

Among the little known bulbs; but which deserve more attention owing to their charming flowers, we recommend you to try the following in your garden. Muscari or Grape hyacinth, blue and white, and the feathered type in purple; sparaxias, Scilla siberica, ixias and snowflakes, Leucojum Ver-

## Grade Potatoes

From Washington comes appeal that potato producers should be progressive and as an inducement to progressing and standardizing the output of the potato fields, attention is called to the accomplishment of California fruit growers and of the apple growers of the Pacific Northwest and their excellent work in standardizing packs of fruit on the entire Pacific Coast, giving a practical guarantee of quality. New York apple growers have been forced by competition to use almost equal care in their packs. Regarding potatoes Southern potato

growers' associations have graded potatoes for years and marked their best grades. In the poor marker year of 1915 practically every car of 10,000 sent out by one southern association was sold direct. The buyers knew just what they would get from this association and took its stock at a fair price, while ungraded potatoes went begging. Other shippers' associations and many large growers have recognized the trend of events and would have graded all their potatoes, even had the food administration not required it. Be up-to-date, then, and grade your potatoes.



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## Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Suckers on Roses

Is the circumstance of rose canes having seven leaflets instead of five, as in the case of budded roses, infallible evidence of their being suckers of the wild stock? Some of my bushes have only five leaflets. They are mostly old and have been much neglected.—Subscriber, Ontario.

Budded roses are not confined to a five lobed leaf, for many have seven. In Souvenir du Pierre Notting, for example, nearly all leaves are seven lobed, and this is the case with several others, but a decided majority have but five lobes. Even the wild roses used for budding upon have from three to seven lobed leaves, and some species and varieties, both budded and wild, often have nine lobed leaves. The only way of judging your suckers, except they bloom, is by the quite different appearance and habit when compared to the budded portion. As a rule the wild rose has a thorny leaf, and there are often a pair of hook-like stipules, or leaf thorns, on the leaf stem near the base.—E. B.

### Book on Floriculture

What book on floriculture, written in California, especially by home talent is, in your opinion, the most reliable, exhaustive and instructive? —Subscriber, Ontario.

"The Garden Beautiful in California," written by Ernest Brauntun, published by Cultivator Publishing Company, Los Angeles, will, we believe, answer these requirements. The price is \$1.00.

### Strawberries in Stanislaus

Can you tell me what variety of strawberries would be likely to do well in this section? The soil is heavy—rather adobe like on this particular farm.—Subscriber, Modesto.

Two of the most popular and all-round varieties we can recommend are the "New Oregon Improved" and "Everbearing." The first named is a large firm rich berry, dark red in color extending to the center and has a very sweet flavor. It is practically unequalled for table use and canning purposes. It is an early variety. The "Everbearing" is also large, a vigorous grower and is a constant and abundant bearer as its name implies. It is somewhat later than the first mentioned variety. Planting should be carried out as soon as possible and they may be planted through the rows of a young orchard or in the open field or in the home garden plot. They may be planted 12 inches apart in rows which for a small plot may be two feet apart but for field culture where it may be necessary to run the cultivator through the rows three to four feet is advisable. The essential of successful culture is fairly rich and deeply trenched soil. Where the soil is of a sandy nature farmyard manure should be applied. The strawberry requires frequent irrigation. Very few fruits are secured from the first year's planting but results may be expected the second year and after the third year the old plants should be plowed under or destroyed and new beds should have been planted with runners which form the second year, and these will then be coming in succession. This is a very important point

to bear in mind. Another is to plant very firmly if you are out for success in establishing your strawberry plots.—A. R. G.

### Milkweed

I send weed stalk showing silky floss filling of seed pod. What is this weed, and is the fibre of value, and would it be worth consideration as a cultural crop?—Subscriber, Los Angeles.

This was referred to a botanist, and he writes: "This is the common milkweed, the cotton of which was utilized by the Indians, but it has no commercial use now as the fibre is too smooth to spin. It is occasionally used for stuffing pin cushions and other small articles."

### Frost in Milo

Is the fodder of milo injurious to horses and cattle after a frost which has killed the leaves but to all appearances has not affected the thick stalks to any extent? —Subscriber, Porterville.

We have never heard of prussic acid being generated in sorghums because of frost, and think if the sorghum is cut and allowed to wilt a short time, danger may be avoided. However, as a matter of precaution, read "Poison in Sorghums" on page 19 this issue in which Professor March, physiologist of the department of agriculture, says it is "commonly thought" that the poisoning may occur after frost, but apparently this is not definitely established, and besides, note later in this article, "No instances are recorded of poisoning from the harvested crop."

### Leaf Hopper

I send insects, small green flies. They are a serious menace to my berry plants. What are they?—Subscriber, Los Angeles.

They are one of the many leaf hoppers and are very destructive, though exceedingly small, but the destruction comes from the fact that they go in droves of millions. Spraying with some form of nicotine sulphate, commonly called tobacco sprays, will control.

### Flow of Water

Am irrigating from "stands" with valves in bottom. In side of stand (eight inch concrete) one foot above bottom, or valve, there is a two inch round outlet. When irrigating water stands in stand 5 1/2 inches above top of outlet how much water am I using? —Subscriber, Pomona.

There are a good many conditions which affect the flow of water in pipes, but in this case we are assuming that the pipes are smooth, that there is but one outlet pipe being used and that the outlet pipe does not project inside the concrete stand pipe. In that case the flow will be 35.3 gallons per minute. If more than one outlet is used there will be crosscurrents in the stand pipe, and the flow of each pipe will be reduced a small amount. If the outlet pipe projects inside the stand pipe but a small distance the flow will be materially reduced.

The rule for determining the flow through such openings is rather technical but Bulletin 247, University of California, Berkeley, gives very complete tables on the flow of water. Some of the catalogues put out by pump manufacturers also give tables which can be used. If anything more technical and exact is desired get "Flow of Water," D. VanNostrand Company, New York.—J. B. N.



## Beekeepers Convention

Enthusiastic Meeting Held at Exposition Park, Los Angeles, Plans Cooperative Buying and Selling.—By A. Layman

**T**HE state beekeepers even surprised themselves by their getting together so completely and setting into action forces which will mean much for the industry. The meeting was held in Los Angeles, so the greater part of the attendants were from the southern end of the state, but Secretary Richter, Prof. Lynch and others came from the north and united in the plans for an organization which will mean more money for producers, which means more honey will be produced in the state. F. A. Alexander of Ontario is president of the state association and M. C. Richter of Modesto is secretary. As the president and the secretary were both scheduled to take an active part in the discussion, L. L. Andrews of Corona presided and J. A. Mack of Bloomington acted as secretary. President Alexander spoke on the necessity for cooperation, giving instances wherein exorbitant prices have been asked for bee keepers supplies, whereas a bit of information on market and their conditions might have led to much more economical buying. There would be saving in cases and cans as was indicated in one instance when San Bernardino producers got together with samples of honey, securing much better return than any one individual member in the county association had been able to secure.

Professor Lynch of Stanislaus County referred to a similar case when for 75 cents each cases had been purchased which other bee keepers later paid \$1.35 for. They also united in selling their honey at 13 cents per pound where isolated bee keepers had to sell as low as seven cents.

Mr. Ross of Imperial County called attention to the necessity of standardization, for the using of a brand which would show to the buyer that the contents of the case was guaranteed and assured.

Mr. Wells of Ventura County spoke of the bean producers saving literally millions of dollars for themselves by organizing a Bean Producers' Association. Buyers brought pressure to bear and wrecked the cooperative association for one year, which was sufficient to teach the producers to get together for the next year, and now the association is in most satisfactory condition.

State Market Director Weinstock was present and made an appeal for

## Ten Million Dollars

Congress, to increase next year's crops, has made this appropriation to bring Nitrate of Soda, at cost, from Chile. "What Nitrate Has Done in the Farmer's Own Hands" will be sent to you free if you send your address on a post card.

**DR. WILLIAM S. MYERS**

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cooperative effort, suggesting the election of a board of directors of which a representative of the state market commission should be one.

Appeal was made for perfecting the organization because it would afford opportunity to accomplish great good for individual members with the consumer and for the nation.

At the afternoon session the committee which had been in consultation with Mr. Weinstock reported in favor of the perfecting of a buying and selling organization. To that end they recommended that another general meeting be held on January 12, to receive more definite outline of the organization from a committee which was elected at the meeting. This committee consists of Messrs. Ross, Imperial County, Lowe, Tulare County; Oates, Monterey; Whiteside, Ventura; Brown, Orange; Whitten, San Bernardino; Alexander, San Bernardino; Kerr, San Diego; Dickenson, Merced; and Richter, of Stanislaus.

The feeling generally obtains that the association should not only enter into the actual buying of supplies and selling of the output of the members, but should aid in financing honey producers in order that the crop need not be forced onto an unwilling market as is sometimes necessary.

The State Bee Keepers' Association is one of the oldest organizations in California and has accomplished much good for the bee keepers who have been loath to give up their independence and form a thoroughly effective organization. We believe they now appreciate the necessity of such action and that a working organization will be perfected before the next honey crop.

## Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

### Injured Eye

Cow's eye inflamed, with matter forming at first, followed by bloody discharge. Continuous with clots of blood sometimes. Blood seems to come from the corner of the eye. There are spots on the eyeball that are somewhat inflamed.—Subscriber.

The eye may have been injured by a briar or foxtail getting under the lid. Turn the lid back and examine the eye carefully. Wipe it with surgeon's cotton dipped in warm water that has some borax in it. Keep the cow during the day where the eye is not too much exposed to the light. If any little red spots appear that look like a growth touch them with a point of lunar caustic.

### Paralysis at Calving Time

What can we do to help a heifer that seems to be paralyzed in her hind legs? She has been down eight days now. She can use her front legs all right and seems perfectly well. Eats heartily and does not suffer in the least. She only seems to have no use of her hind legs. She will be fresh soon and that seems to add to the difficulty.—Subscriber, Dos Palos.

Those who treat diseases of cattle are frequently called to prescribe for just such cases as you describe. Why cows become paralyzed just at calving time is not known. After the calf is born they usually recover. While down they should be given feed that

will digest easily and should be turned from side to side twice a day or oftener. The back and across the loins should be rubbed twice a day and a good liniment applied. A good liniment for that purpose is made of equal parts of turpentine, camphor, oil of origanum and aqua ammonia. For internal treatment give her these powders: Ground gentian four ounces, powdered nux vomica two ounces, bicarbonate of soda four ounces and farina enough to make one pound. Mix and make into 15 powders. Give one powder morning and evening.

### Diarrhea in Cattle

I am writing for advice about some cows that are physicked very much while eating alfalfa hay. The hay looks good but the cows are drying up in the milk. Please advise what to do for them.—Subscriber, Coalinga.

There are many causes for diarrhea in cattle. It may be due to foul drinking water, musty hay or to a contagious disease that is very fatal. Let us hope that it is not the latter. If the water they drink comes from a stagnant pool or there is any danger that the source may become contaminated with any drainage then see that the conditions are improved.

If the hay is musty or was allowed to heat while curing it is best not to use it. Change the conditions that you think may be the cause of the trouble and get the following medicine: Mix a full tablespoon of zenoleum in a gallon of water and give each cow half a pint of the solution every morning as a drench or sprinkle it on the hay. Also give each cow at night a powder containing one dram of ginger, two drams of gentian, one dram of bicarbonate of soda and five grains of tannic acid. I would advise giving each of the cows affected one of the powders every night for ten days. Multiply ten by the number of cows affected and you will know how many powders to get. Show this to your druggist and he will know what to prepare for you. Give the powders mixed in a pint of water as a drench or mixed in a little feed if they will eat it that way.

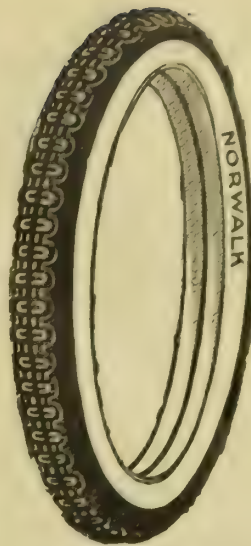
### PAIRING AND PARING

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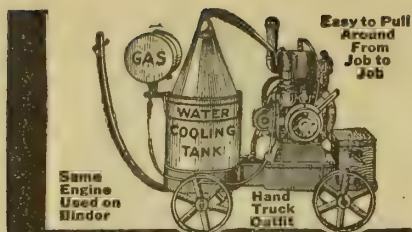
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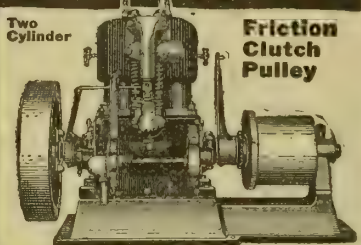
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## When to Blast Ditches and When Not

Written for California Cultivator By J. R. Mattern



HERE are four chief methods of making ditches, each of which has its place and time. These four methods are hand digging, plowing, using ditch excavating machines, and blasting. A brief statement of the proper use of each may help to make clear in the minds of many who are puzzled just what are the possibilities and impossibilities of blasting.

Plowing, with either horse or engine power, is by all odds the cheapest method for making ditches less than 12 or 15 inches deep. If the desired depth can be reached effectively with a plow point with not more than three furrows in one, that is, the second and third in the bottom of the preceding one, the plow is the thing to use. If you have to run more than three times in the same place you should look for some better method.

Hand digging is the most expensive method except for very short sections, as in a garden or on home grounds. It is probably the best way for the average farmer to make ditches for tile drain pipe, though tile ditches can be made with a ditch digging machine. The machine will cost about as much as a traction engine. Its chief place is where there are miles of tile to lay. These machines are made by various companies and are frequently advertised in the farm papers.

Blasting out the ditches is the method that should be used whenever a ditch is wanted deeper than 12 or 15 inches and where tiles are not to be laid. It now is an accepted fact that satisfactory ditches can be made with explosives. With a proper amount of material you can move the material for such ditches for less, in all probability, than it can be handled in any

other way. But the big point in favor of blasting is that the work is reduced to a minimum. This gets the ditch made quickly and gets it done with only one or two men, factors extremely important on many farms.

If the blasting is done when the ground is properly damp or wet, and you experiment with a few shots before beginning the work on a large scale, in order to get the right effect the blasted ditches will be straight and smooth and will not have a great deal of loose material in the sides and bottom. Plow a furrow along the line of the ditch or cut the ground with a shovel. Better still, plow two furrows, one where you want each side of the ditch to be. This is important if the ground is covered with sod, in order to prevent the sod from merely folding over the edges of the ditch or from falling back into the excavation.

If there is a good fall and the water volume is at the time large, comparatively speaking, you can blast a shallower ditch than if the land were flat and the flow small and sluggish, and still take care of the same volume of water. The swifter stream will scour out the channel where the slower water would merely dam up. It is entirely practicable to deepen existing ditches and streams with explosives, placing the charges right down in the earth under the water. In fact, it is under such difficult situations that the use of explosives will be most appreciated. It is hard to dig or plow any kind of a ditch through a swamp, particularly if there are trees and brush to fill the ground with roots. But you can blast a channel right among these obstructions, and have it clean and straight, with little shovel and axe trimming afterwards.

## Worth While to Know Beans



IT IS worth while to know beans," says the Fresno Farm Bureau Monthly. "This is evidenced by the fact that three farm bureau bean meetings have been held during the fall at the request of bean growers themselves. Some interesting experiences were related at the bean growers' meeting held in the Fresno County Chamber of Commerce Building, December 1. Manager S. P. Frisselle of Kearney Vineyard has found from a careful system of cost-accounting that beans were produced at a cost of from \$26 to \$32 per acre at Kearney Park. Kearney is making excellent use of bean straw. Two loads of bean straw are run through a cutter with one load of alfalfa hay. The chopped mixture is being fed to cattle and sheep. Mr. Frisselle considers his bean straw worth at least \$10 per ton. Evidently the estimate that any bean straw in fairly good condition is worth at least one-third the value of alfalfa is conservative."

As to value of bean straw, Prof. F. W. Woll says:

"Straw from leguminous crops, beans, peas, etc., is somewhat higher in nutrients than cereal straw, but is generally coarse-stemmed and less palatable to stock than the latter. Lima bean straw is commonly fed to cows, horses and sheep in the south coastal counties of the state and is considered of nearly similar feeding value to good grain hay or fair grades

of alfalfa or clover hay. In order to avoid waste in feeding, it is preferably run through a cutter and either fed alone or mixed with feeds, like silage, sliced roots, or concentrates."

### SAVE YOUR FARM MACHINERY

Now is the time to build an implement house on your farm if you do not already have one. The price of everything is up. The building will cost approximately twice as much as it would have cost one year ago. Nevertheless a shed just now, if you cannot afford a structure worthy of the name of house, will bring in greater returns than it could have at any time in the past decade.

This is true because the price of machinery is also high. It is probably higher in proportion than lumber. Furthermore, so much iron and steel is going into the manufacture of munitions at the present time, and more will go in the near future, that there is every likelihood that there will be an implement shortage. We might not miss it far to say there is a shortage now. In one particular line, the tractor, there has certainly not been an over-production.

It is impossible to foretell what the future has in store, but it is a wise man who prepares.—E. R. Gross, Colorado Agricultural College.

Men don't gossip. They repeat rumors.

## VALUABLE PRODUCTS FROM NATIVE PLANTS

The yucca plant, or Spanish bayonet, common in the hills of Southern California, is now being used for the manufacture of brooms. Another species of the yucca is used for the manufacture of surgeons' splints and is being experimented with for use as artificial limbs.

The common manzanita bush, grown everywhere in California, may be of value in dye making. A carload of stems and roots was recently shipped from Northern California to an Eastern dye manufacturer for experimental purposes.

The root swellings or burls of the wild lilac are proving valuable as a substitute for briar in the manufacture of tobacco pipes.

Bay rum, used in toilet preparations, is manufactured from the California bay tree, and quinine is produced from the wild quinine bush that grows widely over the southern deserts.

### THREE DOLLAR RATS

An Eastern writer has said that the destructive "value" of a rat is approximately \$3.00. We imagine the "value" of some of the smallest mice might be, at times at least, above such a mark. The gopher and the jack rabbit may not be so "valuable," but they are worthy of a whole lot of attention. How much of our crop is being taken by these rodents? We do not necessarily insist on an exact answer, but everyone who is endeavoring to be patriotic these days should take time to eradicate the pest, if he does not take time to figure out the exact "value."

### FARMERS' SHARE OF THE LOAF

That farmers are today receiving for their wheat 40 per cent of the money paid for the cash loaf whereas last year they received less than 20 per cent of the price of the loaf is a recent announcement of the United States food administration. Elimination of hoarding and speculation together with stabilization of prices are responsible for the doubled share of the retail price farmers are now receiving.

Most of the tractors now on the market are thoroughly reliable. The engines are highly developed due to years of experience in automobile manufacture. The tractor as a whole has passed the experimental stage. The big question for the farmer to decide is the size and character of tractor that will be most profitable on his farm.

With such a tractor you can turn two or three furrows where before you turned only one; you can move the plows across the field twice as fast; you can plow earlier in the season and deeper; preparing a seed bed so soft and porous and so early in the season that the early rains will be absorbed instead of running away, thus storing the moisture for faster, thrifter growth in your crops and as a safeguard against drouths and resulting crop failures.

C. C. Townsend, pathologist in charge of sugar plant investigations, recommends more liberal use of lime on beet lands, at least where content is known to be low. He says lime has been found generally beneficial in sugar beet production and recommends especially the use of sugar factory waste.

Some men may dig their graves with their teeth, but more use a corkscrew.



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## Wholesale Growers of High-Grade Nursery Stock

DECIDUOUS AND CITRUS  
FRUITS  
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SHADE AND ORNAMENTAL  
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This book gives highly interesting and practical information about tillage. We want you to have a copy—and if you wish a complete "CUTAWAY" catalog to arrive with it, just write, "Send your book and catalog".

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**MACHINERY**  
OF EVERY DESCRIPTION  
**BOUGHT and SOLD**  
BUTTRISS & McCLELLAN  
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"To gild refined gold, to paint the lily,  
To throw perfume upon the violet,  
Is wasteful and ridiculous excess."

—Shakespeare.

## Poison in Sorghums



THE sorghums are proving amongst our most valuable plants as grown for fodder and grain. They give great returns from every acre which has fairly good care. They all have one unfortunate trait, that of becoming poisonous to stock under certain conditions. We have written the department of agriculture as to the best information on this subject, and C. D. March, physiologist in charge of poisonous plant investigation, writes as follows: "In reply to your letter inquiring about the poisoning of cattle by sorghum, the following brief statement may give the information desired:

"Many fatal cases of the poisoning of cattle have occurred in different parts of the United States, but most of them have been in the semi-arid regions of the West.

"The actual poisonous principle involved is supposed to be prussic acid, which has been found present in considerable amounts in some cases. The prussic acid seems to be formed in larger quantities when the plants grow under conditions of drouth, and this may account for the fact that the great majority of the cases occur in the West. Second growth sorghum is more likely to be poisonous than the

first growth, probably because the conditions for the formation of the prussic acid are more favorable. It is commonly thought, too, that poisoning is especially apt to occur after the plants have been subject to frost. The cases of poisoning are acute, death resulting in a short time, and from very small amounts of the plant. Apparently, the poisoning cases occur only when the sorghum is grazed. No instances are recorded of poisoning from the harvested crop.

"Theoretically, it should be possible for a chemist by a determination of the amount of prussic acid to tell whether a particular field is poisonous or not, but practically, this is very difficult, for the prussic acid is not present in a stable form, and the quantity may vary greatly between the time of collection and that of examination.

"The farmer, then, should remember that while sorghum is ordinarily harmless, it may be very poisonous under certain conditions. He should, therefore, use great care when turning cattle upon sorghum, especially when it has grown under unusual conditions of drouth. It is best to put in only a few animals at first, and to watch carefully for any symptoms of poisoning."

## A Fair at Los Angeles

President Miller of the District Fair Association of California writes that the board of directors is planning to begin the New Year with first steps for a great fair to be held at the grounds and buildings at Exposition Park, Los Angeles in October, 1918. Plans were in the making last spring for an October or November fair

000,000 quintals, and while the submarine menace has been controlled in a measure there is still an enormous shortage of shipping facilities, but these are increasing every day, and this country must be prepared to meet the need of France if her armies are to aid ours. We believe, and the board of directors believe, that no step more important can be taken than a show-



Where Man Power Comes In

This beats the hand hoe. It's a Planet Jr. and a labor saver worth considering these days of man power shortage.

last year, but with Red Cross drives, with appeals for every bit of the nation's energy being given directly to the prosecution of the war, and still more with the lateness in beginning the planning, it was decided to discontinue the work and hold the fair the coming year. Now the work is beginning in abundance of time and with the belief that there is opportunity for a great work in the aid of war plans. Since the first intimation that America might enter the war, the need of more food has been enlarged upon until we almost tire of hearing of it, but day by day it is becoming more apparent that the need is far more pressing than was ever predicted. France is suffering and must be supplied at once, for her 141,000,000 quintals wheat production decreased during the past year to little more than 41.

ing of the resources of the Southern part of the state and showing of implements and appliances whereby those resources may be greatly increased. The holding of the fair will also increase production in contemplation of such an event. Los Angeles is wise in this early beginning of its planning.

### COTTON IN SAN JOAQUIN VALLEY

San Joaquin Valley is becoming deeply interested in cotton production. A meeting was recently held in Fresno to discuss the topic, and this meeting was only one of several which have been held. Professor Gilmore of the university is giving aid in determining as to the conditions of the valley and those required by the crop, also W. E. Packard, assistant state leader of farm advisers, and several of the farm advisers are joining in this investigation. In any case another season will see a more general experimental planting than any preceding year.

Every ball of the YUBA TREAD kept at work at food production helps as much as a hundred balls flung into German trenches.

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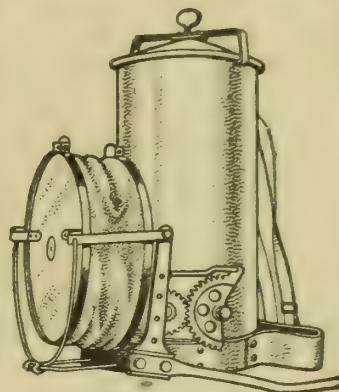
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Forty-first Year

## The California Cultivator

A Journal of Horticulture, Agriculture  
and Live StockRural Californian, Established 1877  
Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established  
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Saturday, January 5, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

In Yolo County is Woodland, likewise wooded land, for there are thousands of such trees as the one shown on the cover page. They add thousands to the wealth of Yolo County, not because of the intrinsic value of the timber, for it has slight value, but as shade trees and as an addition to the landscape they add wonderfully to Yolo's attractiveness.

Spare the big trees; better, plant more, for this state needs trees.

## NEWLANDS

Senator Newlands has gone. He made a persistent fight for the interests of the West, and we believe that he was right and that the entire nation would have benefited had he won in his efforts, especially those that had to do with conservation of our resources. We hope that another will be raised to take up the work of Senator Newlands.

## LOOK TO THE FUTURE

Protectionists are bringing to the attention of congress the situation which may prevail in this United States when the war is over, or, rather, conditions which may prevail the world over which will place American farmers and American manufacturers in a most embarrassing position. It is a wise man who can anticipate exactly the conditions which will obtain, but it is well that some of our brightest minds are looking ahead and anticipating and suggesting a safety first program.

## ROMINGER BILL

Now begins the fight for a seamless California. The Rominger bill is legally before the people for their decision at the next general elec-

tion. The secretary of state has accepted the petitions filed as sufficient, and believers in the wiping out of an institution which has nothing to its credit and untold suffering and economic loss to its debit feel that the campaign is already won. Total prohibition may come as a constitutional amendment, but this will require a six-year fight. Meanwhile, it is a satisfaction to believers in California that the state is preparing to take this advanced step.

## KEEP OUT THE PESTS

The Massachusetts Forestry Association is making a special war measure campaign against admission of horticultural or other pests to this country. This association refers to the Hessian fly, an introduced pest, which costs the wheat growers of this country \$50,000,000 annually. The codling moth costs the apple growers over \$16,000,000. The San Jose scale takes another toll of \$10,000,000. There are others without limit.

This campaign is timely and was pressed by Pacific Coast horticulturists long before Eastern producers awakened to its necessity. Strength to the arm of our horticultural quarantine service.

## TAKING THE BEANS

The Lima Bean Association and various bean buyers have received from Paymaster McGowan of the navy requisition for beans in various warehouses: "This order mandatory as material is urgently needed by the navy. The navy assures you fair and just profit on this shipment."

Still the growers are somewhat concerned as to what a man 3000 or 4000 miles away will consider a fair and just profit on beans grown under Pacific Coast conditions. However, this is a period of war, and immediate action is necessary. Later, should it prove that injustice has been done we believe it will be fully righted. In any case, the bean grower should plan for another and a greater crop of beans.

## LIES

"Secretary Tumulty has been executed because of his being a German spy." "Because of Irish disloyalty President Wilson has ordered all Catholics removed from public office." "The sweaters knitted by the patriotic women for the Red Cross are sold in the open market." "Soldiers in the cantonments must buy their food or starve." And a few similar stories are given far more circulation than they should be. The state council of defense is issuing warning and urging all who are patriotic to look with reason on the lies which are being circulated at every possible opportunity.

Possibly Americans are not acting as one man, but we believe 99 per cent of them are absolutely patriotic and standing behind the government in every way.

This was never the case in Russia, yet there was fair fighting capacity in those people as long as a fairly united government was behind or with them. The administration in conducting America's war will be effective so long as it is supported by the people, and while that support is not simply a condition of mind, that has much to do with the spirit of the boys in the field as well as of the administration at Washington. Enemies of our country know well what it would mean to create dissension among us.

Let us stand as one until the war is finished and finished right. Meantime pay no attention to the lies but bean the liar.

## CLIP THE COUPONS

The agreeable feature of the liberty loan is now being realized by millions of Americans. Since December 15 coupons have been cut and turned in to the banks and to every money order post office with a satisfaction that is not merely because of its proof of thrift nor because we have a few cents added to our spending money but because of the part we are taking in preserving Liberty for the world. Then we are all the more ready to answer the call of our government for the next, or third, liberty loan bond issue which is promised in February.

By the way, boys and girls of California, remember those thrift stamps. Take every penny out of the little toy bank and invest it in stamps until the requisite 16, with a few cents more, will secure a war savings certificate. Then, instead of lying in the little banks the pennies will be drawing interest. Besides, it will make everyone of us feel more a part of the government and the great work we are doing in our fight for liberty for the whole world.

## INVOICE

On page three are suggestions regarding making return or report regarding income for past year. The new year is a good time to "take stock." Wise merchants, often twice a year, at least once a year, make invoice of stock in hand and know where their business has made and likewise where it has lost money.

There are some farmers who are specializing on one crop, and if they manage to live and eat and dress fairly well, they decide that that one crop has made a living for them. However, there are many more farmers who are handling two or several crops and too often do not know which are the makers and which are the losers.

Aside from this taking of stock and keeping records of ranch losses and gains, the income tax, which in some form will doubtless be with us for all time to come, should impel everyone to keep most accurate account of every transaction. We once heard a farmer say that the last thing he wanted to know was the unfavorable features of his business. But such a spirit makes for weakness of any business man. In order to meet the demands of our government everyone with an income of \$1000 or \$2000, as the case may be, must make report. The man who honestly has an income which justifies payment of an income tax must be able to show what that income is and what right he has for exemptions. There are exemptions allowed, and it is necessary that the farmer make clear statement of all his operations in order to secure these exemptions.

These preachments come a bit late, perhaps, for the past year's report. For that, presumably, many of our farmers will have to use the rule of thumb and report as best they can, but this is the beginning of the new year and if the farmer will but take stock and keep books through 1918, then on December 31, 1918, another taking of stock will enable him to make an accurate report and to show wherein he is entitled to pay and entitled to receive exemption.

## LOS ANGELES BUREAU

Los Angeles County begins the new year fully organized as to its farm bureau and with the appointment of Dr. J. Elliot Coit as farm adviser and Mr. Hodgen as first assistant; other assistants not yet appointed. Dr. Coit has been connected with California horticulture and agriculture for many years, at one time being at the head of the experiment station at Riverside, and many years since professor of citriculture and subtropical fruits at the University of California.

## This Week's War News

Rumor has it that Japan will send a big army to the Western front.

The Allies are slowly driving back the Teutons in northeastern Italy.

The clamor for peace on the part of the German people is increasing daily.

England is now under a strict food ration program; sugar is issued only by card.

A food survey of the situation in America is called for and the work has already been undertaken.

The lines have been advanced ten miles north and east of Jerusalem and the general situation made more safe.

Los Angeles led the country in abolishing the teaching of German in the schools and many other towns have followed suit.

The railroads and coast and river transportation lines of the United States have been under federal control since 12:00 M. December 28. Interurban and street car lines not included in the order.

Twenty dergees below zero and a 60-mile blizzard has affected the coal situation and caused immense suffering over much of the East. The navy has released one-half of its stored coal to lessen the suffering.

More German "peace" propaganda is evidenced in the incendiary fires which destroyed great munition plants at Norfolk, Virginia, January 1. Several lives were lost. Arrests of several aliens have been made.

The entrance of Argentine into the war on the side of the Allies makes South America almost unanimous. Practically the only nations of the south sympathizing with Germany are Columbia and possibly Chile.

On the seas the principal events of the week have been the sinking of the big Cunarder, Venovia, with large loss of life and \$2,500,000 financial loss in ship, munitions and food; the sinking of three British destroyers and the sinking of several U-boats.

In California a member of the council of defense has retired, and there is show of friction, the retiring member declaring that the \$500 per month paid to the vice president of the council, and other extravagances are not justified by the accomplishments of the board.

The pro-German claim that General Sarraill was recalled from the Saloniki section because of any contention is denied; the French assert it was because of his own request. He has been in command of the international armies at Saloniki for two years.

On the Western front there has been almost continuous cannonading over the whole line, with some activities in the Cambrai and Verdun sectors. In front of Cambrai the Germans captured some British trenches which were almost immediately retaken. German troops are still being transferred from the Russian front.

Peace is being discussed as never before and both sides concede the situation calls for mutual concessions. The old year ended with Germans gaining because of the collapse of Russia and because of its drive in Italy. The Allies are gainers because of the persistent driving back on the Western front and of final winnings on the Italian front; also in almost perfect possession of the seas and practical collapse of the submarine warfare. Their greatest gain for the year has been the entrance of America and several South American republics. The peace proposals of the Bolsheviks, at first ignored, it now appears will be answered by the Allies. The fighting spirit of the French, and in fact of all the Allies, and the feeling of unity among the civilized world, is an earnest of the determination to make peace only the outcome of right settlement of the situation. The people of Germany are likewise insistent in demands for definite step toward peace.



# Agricultural News Notes of the Pacific Coast

## Northern California

The pack of 1917 Navels is practically ended in Butte County.

California has now planted nearly a half million acres of wheat.

San Joaquin County is making a campaign on ground squirrels.

Sonoma County poultrymen have abandoned plans for a breeders show.

San Francisco is planning for a truck and tractor show February 16-24.

An investigation in Butte County has shown over 200,000 idle acres which are tillable.

Sutter County reports its bean crop safe in the warehouses. Over 600,000 sacks were harvested.

The Shasta County farm bureau is discussing irrigation with experts from the University of California.

Napa County orchardists report oak root fungus as doing much damage in some of the deciduous orchards.

Some Orland County farmers are raising two crops annually and netting around \$140 to \$150 per acre.

With hay highest since the 60's, dairymen and livestock feeders are turning every way to secure relief.

The University Farm at Davis, will soon have a fine Percheron stallion, a winner at the Chicago International.

The Butte County farm bureau is making life miserable for ground squirrels through a campaign of eradication.

The section near Walnut Creek is producing rabbits so extensively that they are erecting a cannery to handle the surplus.

Plans are practically completed for the Western Berkshire Congress which will be held at University Farm, Davis, February 21-22.

Peach growers of Butte County who signed long time contracts with canners prior to the war are appealing for modification of contract.

The Pacific Coast Hereford Breeders' Association will hold big public sale of registered Herefords at the University Farm in April.

Yolo County cotton growers are pleased with experimental plantings and more liberal experiment will be made during the coming season.

Napa Grange recently met and elected officers for the coming year. The master is H. L. Gunn; overseer, H. J. Baade; secretary, Mrs. F. L. Hunt.

Shasta County is holding mass meetings and organizing its farm bureau. Glenn County and other adjoining farm bureaus are aiding in the work.

The northern portion of the valley and even some of the red foothill lands will be planted to wheat to a greater extent than any preceding year.

The county horticultural commissioner of Glenn has condemned a shipment of alfalfa seed because of large quantity of dodder seed which it contained.

Professor Gordon H. True is at the head of the federal livestock commission for California, the first work of which is to remedy the shortage of feed if possible.

The California Shorthorn Breeders' Association met recently at San Francisco and re-elected last year's officers. The Shorthorn sale scheduled for February may possibly be deferred until April.

## Central California

Tulare County's farm adviser is now on the job.

Tulare County shipped over 2000 cars of fresh fruit the past season.

The Citograph of Lindsay, Tulare County, has discontinued publication.

Tulare County's lemon crop is reported to be less than 40 per cent of normal.

Petitions are being circulated in Madera asking for an anti-saloon election April 10.

A livestock company with capital stock of \$50,000 has been organized at Greenfield, Monterey County.

All members of the Associated Raisin Company are asked to put "Sun Maid" signs in all their vineyards.

Gonzales, Monterey County, is receiving advice on bean planting from an expert of the University of California.

The state poultry show held at Coalinga last week showed more than 1000 poultry and rabbits exhibited.

There will be a meeting of the Tulare County farm bureau on January 9, when organization plans will be discussed.

The Grange Patrons of Husbandry, Dinuba, Tulare County, has resolved against the importation of Chinese coolie labor.

Cattlemen of Dos Palos, Merced County, are discussing the new branding law and have decided to unite with the State Cattlemen's Association.

Charles Klint has been reappointed official tester of the Tulare Cow Testing Association. This association is now testing about 4000 cows per month.

Kings County prices of butterfat for November dropped below the high prices of October. This is believed to be due to large shipments received from Australia.

The big Tagus Ranch in Tulare County is planning to put in 2000 to 3000 acres of beans next spring. Teparys and Blackeyes will be the varieties seeded.

The Terra Bella Fruit Growers' Association has leased its cannery for next year. It is reported that the lessee will also put in machinery to handle peaches and apricots.

A large addition is being built to the plant of the Kings County Packing Company of Armona. This plant will take up the canning of vegetables this season. It is now canning raisins.

More than 6000 head of sheep are now being fattened at the San Joaquin Valley sugar factory at Visalia. The animals are not fed exclusively on beet pulp but are given other rations.

Legal complications and a long series of law suits are promised in connection with the newly formed \$2,000,000 Lindsay-Strathmore irrigation district which contemplates taking waters from the Kaweah River.

Cotton growers of the San Joaquin Valley met at Fresno last Saturday and took preliminary steps for the organization of the Central California Valley Egyptian Cotton Growers' Association. Organization plans were placed in the hands of W. E. Packard, cotton expert of the state university.

## Southern California

Imperial Valley has shipped over 600,000 pounds of turkey.

Navel oranges have sold for longer prices than any preceding year.

San Diego County good roads boosters recently met at Fallbrook.

Imperial Valley will soon be planting over 9000 acres of cantaloupes.

The last day of 1917 was made squirrel Day by Corona, Riverside County.

A movement is on foot to establish a sorghum mill in the vicinity of Imperial.

The Yucaipa Apple Growers' Association held its annual election January 3.

The Orange County board of supervisors has made appropriation of \$2000 for expenses of farm adviser.

One of the biggest rises in war prices is in the price of peanuts which has gone up from six to 15 cents within a very few months.

The Pacific Exploration Company is drilling many depth shafts in Death Valley to discover as to the extent of potash deposits known to exist.

The Golden Orange Groves, Incorporated, at Baldwin Park, have elected Wm. Bainbridge, president, and J. M. Stanton, secretary and manager.

Los Angeles County hunters are taking up an occasional \$20 or \$30 bounty for mountain lions. They are more plentiful than for several years.

San Bernardino, Riverside and Orange Counties are uniting in appropriations to be used in aid of flood control of the head waters of Santa Ana River.

The Washington Navel crop of the Riverside district is reported to be larger than was expected earlier in the season. Eastern shipments have begun.

At the farm center meeting at Murrietta, Riverside County, attendance of nearly 100 was given. The center is uniting in purchasing bluestone for seed dip.

The first car of new crop Navels was shipped from the Riverside district last Saturday by the Highgrove Fruit Exchange. This first car went to New York.

Practically all the larger towns of this state have adopted the one delivery a day plan. Merchants in many of the cities have in addition cooperative deliveries.

The directors of the California Lima Bean Growers' Association have applied for a license although as a cooperative association they are not required to do so.

Robert Reese, tester of the Westmoreland division of the Imperial County cow testing association, reports 15 cows testing over 50 pounds of butterfat for the month of November.

Farm center meetings for Imperial County for the month of January: Alamo, 7; Westmoreland, 9; Meloland, 11; Calipatria, 14; McCabe, 16; Magnolia, 18; Seeley, 21; South Fern, 23; La Verne, 24; Mount Signal, 25; Eastside, 28.

The short course in tractor management at the Citrus Experiment Station Grounds at Riverside will be held during the week beginning February 11. A registration fee of \$1.00 is the only charge for the course and any one may register.

## The Coast and General

National forest timber sold last year totalled in value \$3,715,000.

The United States produced in 1917 more than 5,500,000,000 bushels of cereals.

Many farmers of Marion County, Oregon, are getting together and buying tractors.

It is probable that next year's sugar production of the world will be the shortest ever.

Jackson County, Oregon, can boast of having filled its army quota before the draft was made.

The inspector of weights for the state of Washington has been given an assistant and a corps of eight inspectors.

General effort has been made by forest rangers and others to clear ranges of larkspur and other poisonous weeds.

The Twentieth Annual American National Livestock Association's Convention will be held at Salt Lake City, Utah, January 14-16.

The farm agent of Cochise County, Arizona, has completed a series of nine district fairs held in the various centers of the county.

The Southwest Cotton Company predicts that 100,000 acres will be planted to long staple cotton in Arizona the coming year.

The loss of food during the last summer because of fires in field, warehouses and elsewhere averaged in value \$50.45 for every minute.

A large acreage of land in Power County, Idaho, has been summer fallowed in preparation for planting to beans and peas next season.

The long controversy between Governor Campbell and Governor Hunt of Arizona has finally been decided, and Governor Hunt took over the office on January 1.

Graham and Greenlee Counties in Arizona unite in employing one farm agent. He is now working with farmers in the two counties to produce a greater wheat crop.

At the recent annual meeting of the Idaho-Oregon beekeepers' association it was decided to sell all extracted honey through the association as the comb honey has been handled for sometime.

The Washington college of agriculture at Pullman has a new head in Dr. William J. Spillman who was formerly chief of the office of farm management in the United States department of agriculture.

The ninth annual convention of the Farmers Union of Washington and North Idaho was recently held in Spokane. A. A. Elmore of Spokane was elected president and A. D. Cross of Spokane, secretary and treasurer.

Effort is being made to stabilize livestock markets at Chicago and other packing centers by control of daily shipments into the markets. The territory supplying the markets has been divided into zones to secure more satisfactory control.

Jim Hill mustard, long a pest of the Northwestern states, especially along the right of way constructed by Mr. Hill, is now being utilized as a forage and proves excellent for sheep. One farmer reports the sale of \$8000 worth of sheep fed entirely on Jim Hill mustard.





## Winter Is When Stock Get Out of Fix

Yet—healthy, thrifty animals mean more to you right now than at any other season of the year. It's because you are producing pounds of pork, beef, butter and milk with grain, hay and fodder, the products of your summer's toil. That's why your stock should be in prime condition and free from worms.

## Dr. Hess Stock Tonic

Is a Conditioner and Worm Expeller

It contains tonics to improve the appetite, blood builders to tone up and enrich the blood, laxatives for the bowels and vermifuges to drive out the worms.

Every ingredient in Dr. Hess Stock Tonic is highly endorsed by the United States Dispensatory and other world's experts for the same purpose for which we use them.

We have a dealer in your town, authorized to sell you Dr. Hess Stock Tonic with the understanding that it is to make your stock healthy, to make them thrive better, to drive out the worms; otherwise he gives your money back.

25-lb. pail, \$2.25;  
100-lb. drum, \$7.00

Smaller packages in proportion.

Why Pay the Peddler  
Twice this Price?

DR. HESS & CLARK, Ashland, Ohio

DR. HESS POULTRY PAN-A-CE-A  
will help make your hens lay now



## Dr. Hess Instant Louse Killer Kills Lice

## MILK ..... and WAR TIME

In these days of high prices for dairy products, the "poor milker" is more than ever a liability.

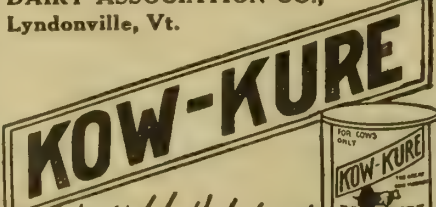
But before you sell the cow that is not producing well, try to improve her condition. Her milk value is much greater than her meat value.

Most poor milkers are non-productive because of some defect of health, which can be quickly remedied by intelligent treatment.

Kow-Kure is a medicine that acts quickly on the organs of digestion and milk production. Its widely known tonic and curative qualities have made it the standard cow medicine for the prevention of disease and the treatment of Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite and Bunches.

Give Kow-Kure a trial; it will do for you what it is doing for thousands of others. Feed dealers and druggists sell Kow-Kure; 55c and \$1.10 packages. Send for free treatise, "The Home Cow Doctor."

DAIRY ASSOCIATION CO.,  
Lyndonville, Vt.



## Live Stock Notes from Northern California

Written for California Cultivator By W. S. Guilford



THE year 1917 has been a very prosperous one in the Sacramento Valley. Crops have been abundant and prices high. The grain crop was one of the largest ever produced. This is the big money crop. Dairy products have been high in price and the number of dairy farmers has been steadily increasing. More alfalfa has been planted, with consequent increased aggregate yield. An exceptionally long open fall has permitted the harvesting of the largest rice crop yet produced, and it has gone into the warehouses in fine condition.

Wages for all kinds of labor have been high and men scarce. Each succeeding draft makes the condition worse. What will happen next year is a serious question. One result of this is the influx of Hindus and Japanese who are finding no difficulty in renting small and large areas for all kinds of crops.

While the open weather and absence of rain has been very favorable for the harvest of the rice and bean crops, and for the fruit harvest, there is a serious shortage of feed for live stock on all hill and plains ranges. And it is so late now, and the weather so cold, that rains coming now or later will not make much feed before spring.

The high price of hay has caused many dairy herds to be considerably reduced. There is also a big shortage of hogs in many districts. Grain farmers who ordinarily "carry over" a good many and feed some grain "from the sack" have sold both hogs and grain.

The number of flocks of sheep on small farms and the larger grain ranches has increased very materially, and the time is apparently not far off when the small flock will be the rule rather than the exception on Sacramento Valley farms. Rents of range areas are increasing. Fifty cents per acre was a common price two years ago; very little is being rented for less than one dollar an acre now.

All classes of farmers are prosperous, but it is most apparent among those who have purchased subdivision tracts within the past four or five or six years. Some of these had a hard time during their first two or three years in California. Now that they are beginning to produce crops in quantity the high prices are enabling them to pay for their farms and purchase luxuries much sooner than they have anticipated or would have otherwise been the case.

Hundreds of automobiles of all kinds are being sold in every rural district. And the market for trailers is a particularly good one—I wonder that more are not advertised in the farm papers.

The silo building activity has been phenomenal; there are 65 new ones in Glenn County alone. And the planting of all varieties of corn continues to increase yearly.

And the number of pure bred animals of all kinds, both in use as sires in grade herds and in pure bred herds, has multiplied. This is a factor that means much for the increased prosperity of the live stock industry whether prices are high or low.

The Sacramento Valley is a great agricultural empire, developing rapidly now but capable of far greater development.

### BEGINNERS LOSSES

The beginner in the live stock business must expect some losses. Very fortunate indeed is the man who buys his first stock and does not have some discouraging unfortunate experience. And with almost every one there comes a time when everything looks blue and there is a strong temptation to sell everything and quit.

Assuming that conditions are favorable for growing stock—climatic and feed and other conditions—the only way for the beginner to lose is to quit. His misfortunes become a part of his capital investment if he stays with the business. The lessons taught by bitter experience are the most valuable.

Sometimes the discouraging time comes soon after the stock has been purchased, sometimes one or two years after the enterprise has been started. But that is just the time to "stick the tightest" and remember that no one ever lost money who bred good animals and fed them well—if he stayed with it.

### A HAPPY MEDIUM

One farmer, not a very good feeder at best, with short feed and high prices complains that one of his sows farrowed only three pigs, weak, sickly ones at that. And not far from him is a breeder of registered hogs who is a skilled feeder and fitter of show animals. His animals get the best of everything in the greatest of abundance. And he had a sow, a wonderful animal, which weighed over 600 pounds, and her litter consisted of three weak, flabby pigs that required the closest attention and careful nursing to save their lives.

These two sows were the victims of two extremes in hog growing. A thin, weak sow is not in condition to conceive and develop a large healthy litter; neither is her over-fat sister.

Of course there are cases where both very thin and very fat sows farrow and raise satisfactory litters, but they are not the rule. A happy medium is safest and best. Enough feed to keep the sow in thrifty, vigorous condition, plenty of exercise, and all round rational treatment are best.

Keep salt and lime and ashes and charcoal before the sows all the time and keep them increasing gradually in weight throughout the entire gestation period.

### THE "SIX" SENSES

In a primary school examination one of the questions was with regard to the five senses. One of the bright pupils handled the subject thus: The five senses are: Sneezing, sobbing, crying, yawning, coughing. By the sixth sense is meant an extra one which some folks have. This is snoring."—Woman's Home Companion.

We praise her doughnuts and her pies, her biscuits and her cake, but where's the man who sighs for pants like mother used to make? She used to take a pair of pa's, when they were worn and frayed, and decorate them with a patch of some contrasting shade, and cut them off about the knees, and take the waist in, too, and say that they, for every day, were just the thing for you.

The twentieth century version of Cromwell's motto is "Trust in God and keep your army dry."—The Independent.



# A Five Months Old Calf for \$35,000

Written for California Cultivator By Leroy Anderson

**S**OME snow! Eighteen inches of it fell in Syracuse between dark and dawn on the night of December 13, and over 20 inches by the following noon. This was on top of a ten or 12 inch snowfall of December 8, making at least 30 inches on the level.

But what has the snow to do with a cattle sale? At least two things in this instance, for snow sometimes blockades railroads. Prospective purchasers were either delayed in reaching the sale or did not arrive at all. And, further, those present had no assurance as to when cattle could safely be shipped and were thus slow in bidding. One man whom I met started from New York City Thursday evening and should have reached Syracuse next morning but did not arrive until Friday's sale was completed. However he had the pleasure Saturday of paying \$3000 for a four months old bull calf and so must have been satisfied with the trip.

It is called the Dairymen's Convention sale because it immediately followed a three day session of the New York State Dairymen's Association, the theory being that each would help the other in drawing a crowd. Notwithstanding an attractive program, the convention attendance was disappointing and its contribution to the sale was not large.

The sale pavilion is located at Liverpool, a half hour's trolley ride north from the center of Syracuse. It is a two story frame structure, the first or ground floor being almost entirely occupied by cow stanchions, while on the second floor is a large dining room, feed storage (for cows) and the selling arena. The dining room will seat 250, while the arena will seat twice as many. Both are supplied with heat by a large boiler on the ground floor, so that even in this zero weather we were exceedingly comfortable. Dinner was served by ladies representing local societies, at a cost of 50 cents per plate, on Friday to 150 men and on Saturday to 200. The total attendance at the sale would be a little more than this.

It was a pleasure to meet several men who have made and are still making Holstein history, such as John Arfmann, H. A. Moyer, Oliver Cabana Jr., R. E. Chapin and F. E. Jones, all of New York, and F. P. Knowles and F. H. Metcalf of Massachusetts. Other states represented by one or more buyers were New Jersey, Pennsylvania, Kentucky, Illinois, Indiana and Wisconsin. J. T. Williams of Sterling, Illinois, purchased the largest number, 22 head for a total of \$5200, including the yearling bull, King Toh Lyons, at \$800. They say there was one man from California but he didn't buy anything.

The really thrilling moment arrived at about three o'clock on the second day when a bull calf scarcely five months old was led into the ring beside his dam, King Pontiac Diana Pietertje. There was a hush as the breeder and owner, Oliver Cabana Jr., of Buffalo, arose to state the little fellow's breeding and the records for milk and butter production that are behind him. Then the bidding began at \$17,500 and rose by leaps of \$500 or \$1000 until it reached \$35,000 and stopped. The calf was struck off to J. T. Shanahan of Buffalo. The calf is by name, Majestic Rag Apple. His sire

is Rag Apple Korndyke 8th, the first bull to have been sold at public auction for \$25,000. He has one half brother which sold for \$20,000 and another which, at five months old, sold last June at the Worcester, Massachusetts, sale for \$53,200. His dam has a six year old record of 40 pounds of butter and 825 pounds of milk in seven days. So this little Majestic Rag Apple travels in classy society. Mr. Shanahan was a bidder on the Rag Apple calf at Worcester and was beaten by Mr. Field at the \$53,200 mark, but he landed this one at Liverpool and maybe has just as good an animal. He had the distinction of topping the bidding at Worcester on females, on the cow Vandermere Belle Hengerveld at \$18,300. He is a manufacturer who has been obliged to give up city business on account of health, but no doubt will find it again amongst his Holsteins. He is associated with C. H. and Philip Dold, also of Buffalo.

A total of 153 head was sold, ranging in price from \$40 for a calf a few days old to the high mark for Majestic

Rag Apple. The total sales amounted to \$88,145, or an average per head of \$575. Eliminating the \$35,000 calf, the average per head is \$347. The average of all animals sold at Worcester was for 143 head \$2073.

Prices at Syracuse were generally disappointing, and Holstein men do not accept them as indicating what the future has in store for the Black and Whites. That weather conditions were a contributing factor is evidenced by a remark overheard in the Yates Hotel Friday morning. The speaker had just noted the weather when he said, "Well, boys, this sale will be like picking presents off the Christmas tree for us." A second important factor is the uncertainty as to prices for milk. As one breeder expressed it, "With federal control of milk prices in the air, dairymen don't know where they stand."

The boys in the trenches were not forgotten. John Arfmann of Middletown brought a Red Cross calf into the ring with the statement that he wanted to raise \$1000 on him. He had been sold for the cause in Middletown and turned over for resale at Syracuse. The hat was passed until the total, including Middletown's contribution, had reached \$760. Then the calf was put under the hammer and struck off at \$240. John returned home happy that his Red Cross circle had realized the coveted sum.

## ACORNS FOR HOG FEED IN WAR TIME

From the Journal of the Board of Agriculture (England), issue of November, we extract the following: "The president of the Board of Agriculture and Fisheries again urges upon stock keepers the great importance of making full use of the present abundant crop of acorns. Grain of all kinds must be conserved for human consumption; other food material must be used in the feeding of stock. In general composition acorns closely resemble the cereal grains and require only the addition of green fodder and such foods as are rich in flesh-forming materials e. g., oil cakes and milling offals, to constitute a suitable diet for growing or fattening animals. Acorns are specially adapted for pig-feeding and can often be used most effectively and economically when pigs are allowed to gather them where they fall."

In view of the fact that there are in many parts of Northern and Central California large areas of the Evergreen Oak (*Quercus chrysolepis*) and the deciduous or White Oak (*Quercus lobata*) which yield many acorns it would seem that there is a great source of hog-food which should not be allowed to go to waste. — A. R. Gould.



**MILKING** a cow is not like pumping water. A milking machine is designed to work on a living animal and must therefore have qualifications different from other kinds of machinery. The first and most important requirement is to reproduce the action of nature. The sucking calf was the original milker. He sucks on the teat, then squeezes it towards his throat (downward) with his tongue and the roof of his mouth, then stops sucking momentarily while swallowing. These three actions are faithfully reproduced in the actions of the Perfection teat cup,—suction, downward squeeze, release. That is why so many careful dairymen have selected the Perfection for use on their high priced herds. You take no chances with Perfection, even on your test cows, because its action follows Nature's Way.

The Perfection teat cup fits all sizes of teats, thus doing away with the bother of changing teat cups every

time you move from one cow to the other. The soft rubber lining of the Perfection teat cup feels easy on the cow's teats, and the downward massage creates a soothing feeling which makes the cow respond by giving her milk down freely.

The Perfection can be instantly adjusted to fit the requirements of the individual cow—whether she is a hard milker, an easy milker, or has tender teats. A turn of the needle valve of the pulsator does it. That's why the Perfection is used on cows on official test without fear of injury.

S. E. VanSlyke & Son, Proprietors of Pine Park Stock Farm, Northfield, Minn., say:

"The Perfection Milkers we have been using for over 2½ years are giving complete satisfaction. Our herd consists of pure bred Holsteins any one of which is worth more money than the milker, so we would not continue to use it if it showed any bad effects upon the cows teats or udders.

We have used it as high as four times a day on cows on official test, with great success. Some of the cows on which it was so used were two year old Heifers with their first calves. We are pleased to recommend the Perfection Milker to anyone wanting the best in milkers."

G. G. Burlingame of Cazenovia, N. Y., writes:

"Your Milking Machines on my farm are giving the utmost satisfaction. They are very simple and easy to run and two men to do the milking in the same time that it used to take five. Our milk sheets show that we get fully as much milk by using the machines, as we did when we milked by hand.

These machines are in use on three other farms, with which I am connected and in each case, have done excellent work. You will be interested to know that we made some very creditable butter records last spring. One cow made nearly 32 lbs. in a week, two others made 27 lbs. as three year olds and one two year old made over 24 lbs. One cow milked 99 lbs. in a day."

Profit by the experience of others.

Send for our free illustrated catalog. You will find it interesting.

## Perfection Manufacturing Company

2113 East Hennepin Ave.

Minneapolis, Minnesota

# PERFECTION MILKER



## Who's Who

With the issue of August 11 the Cultivator started its series of "Who's Who" articles to bring before its readers some of the livestock producers of California who are responsible for the large development of the industry. Where did they come from and how long have they been engaged in California development, also how do they look, so pencil and camera are to be used, and some homely, everyday photographs and notes regarding them will bring us closer together. Bear in mind we say "homely photographs" and not photographs of homely people. The idea we wish to convey is that so far as possible we will secure photographs in everyday surroundings at the homes of the livestock producers.

FRED W. KIESEL

Written for California Cultivator  
By F. F. Stonerod

**T** HERE is a Holstein breeder up in Sacramento County who has not been making much noise the past few months, but he is very much alive all the same, and before a great while will be very much in evidence. I refer to Fred W. Kiesel, Sacramento banker, capitalist, farmer, breeder, and all round good fellow.

The reason why the Kiesel Hol-

themselves, in his model ranch and its environment. He figures it cost him in the neighborhood of \$12,000 to complete the work. Every reactor was sent to the butcher or sold otherwise. One hundred and fifty head were tested every three months.

I mention this instance to show the originality and determination of the man. As all financiers should be, Mr. Kiesel is slow to pass judgment, but once he decides a matter, he acts.

He was born in Ogden, Utah, forty odd years ago; graduated in the '96 class at Harvard, spent five years in Europe studying the vineyard industry, and then came to Sacramento where he founded the Cordova Vineyards. His father has been a live stock man all his life, living at present in the Northwest where he owns large stock ranches in Oregon and Idaho. Mr. Kiesel started his registered herd of Holsteins three years ago with 35 head. He purchased most of them in Syracuse, New York. The herd now numbers 150 head and contains some of the highest class stock in the state, including Prince Gelsche Walker Korndyke, a bull Mr. Kiesel paid \$4000 for, and King Korndyke Pontiac.

Mr. Kiesel is interested in a number of big projects in California. He is vice president of the Natoma Gold Dredging Company at Folsom, vice president California State Life Insurance Company, is a 32 degree Mason and Knight Templar. He is also president of the State Holstein-Friesian Association.

This year he saw the possibility of a fortune in raising beans and will have about 15,000 sacks for sale at war prices, all produced on his wonderful delta ranch in Sacramento County.

As soon as he is satisfied his Holsteins are ready to do business with a clean conscience something is bound to happen in the Kiesel herd. His cows have better than an even chance to break existing state records and possibly world's records, for they certainly have the breeding, and his herd sires have the inherent ability to produce record daughters.



Fred W. Kiesel

steins have not been in the public eye is that their owner quarantined his ranch about a year ago and decided he would have a herd absolutely clean of those diseases so common to dairy cattle or quit the business. The absolutely "clean" herds of dairy cattle in the United States are few and far between. We put the word clean in quotation marks so that it will not be misinterpreted. In this case it means clean from diseases such as tuberculosis and abortion. The stringent state law on tuberculosis was not the only reason why Mr. Kiesel decided to take this costly step—he had a just pride in the ownership of the animals

## Field Notes from the Live Stock Men


This Week's Live Wireless Notes With Special Regard to Holstein Activities in the State.

Nadgy Korndyke Mooie 3d, one of the pair of prize winning daughters of King Mead of Riverside so much admired by visitors at the last state fair, recently freshened as a junior two year old and made an official record of 21.04 pounds butter in seven days in the herd of J. H. Harlan Company.

Prince Alcartra Korndyke, senior herd sire in the herd of registered Holsteins owned by The J. S. Gibson Company, Williams, is coming to the front in great fashion as his first daughters complete their records. Five of them, all two year olds with first calf, have now completed yearly records averaging 15,333 pounds milk and 675.82 pounds butter. They averaged 17.08 pounds butter and 387.5

pounds milk in seven days at the beginning of their lactation periods. Princess Roma Alcartra, another daughter that dropped her first calf as a three year old, made 22.55 pounds butter and 499.9 pounds milk in seven days, while Princess Hazel Alcartra, who made the lowest record of the five with first calf, has made the splendid record of 25.10 pounds butter and 555 pounds milk in seven days at her second freshening as a three year old. Prince Alcartra Korndyke is the oldest son of the world's greatest long distance producer, Tilly Alcartra, and is sired by Korndyke Queen De Kol's Prince, whose daughters are noted for high and persistent production and unusual size and individuality.

King of the Black and Whites, the



**PURE BRED** **REGISTERED HOLSTEINS**

### King Korndyke Pontiac

Shown above is our senior herd sire, and he is a son of the peerless sire, King of the Pontiacs, 228 A. R. O. daughters, two above 40 pounds butter in seven days, and he has 32 two year old daughters with yearly records averaging 769.01 pounds butter, one of them with 1023.41 pounds, his first four year old daughter tested for a year made 1043.27 pounds butter, and his first daughter tested at mature age made 1066.42 pounds butter in one year.

### King Korndyke Pontiac 20th


Shown below, sold in the Guaranty Sale to one of the most progressive breeders in California, Mr. W. J. Higdon of Tulare, Cal., for \$6500.00, the highest price ever paid for a calf on the Pacific Coast, and everyone agrees that Mr. Higdon secured a real bargain in high production backing both short and long time records, and outstanding individuality.

This wonderful young bull is a son of KING KORNDYKE PONTIAC, and we have a few of his brothers on hand to offer. Decide now to ask us for prices and pedigrees and select one to head your herd and be in line with the blood that is going to make production history in the future as it has in the past.

### JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C.W. YOUNG SUP'T.



**Superior** **State** **Tested** **Production** **Butter Fat** **Everything** **Guaranteed** **Individuality** **Breeding**

## King Korndyke Pontiac 20th



In our junior herd sire we required high individuality backed by consistent high production of milk and butter both for short and long time periods. And KING KORNDYKE PONTIAC 20TH meets our requirements in every respect.

We appreciate his inheritance more fully when we go over the performance records of every single animal in his pedigree for several generations back and find not an unworthy one in the lot. And after we are satisfied with the study of their great records and proven ability to transmit great production we find added satisfaction and security in a study of the wonderful individuality of these ancestors, splendid bulls whose

outstanding type has been repeatedly proven in the show ring, and the great deep bodied females with not a poor udder among the seven nearest dams.

His sire: KING KORNDYKE PONTIAC, acknowledged one of the best individual sons of the great King of the Pontiacs, whose 228 A. R. O. daughters include two with records above 40 pounds butter in seven days, 17 others with records above 30 pounds butter in seven days, and his entire list of two year old daughters tested for one year, 33 in number, average 762.42 pounds butter. King Korndyke Pontiac already has several A. R. O. daughters with good records and is now in active service at the head of Mr. Fred W. Kiesel's great Jane Garden Farm herd at Sacramento.

His dam: MISS VALLEY MEAD DE KOL WALKER, 36.81 pounds butter in seven days as a junior three year old, 790.38 pounds butter in 257 days as a senior two year old, 21.33 pounds butter in seven days eight months after calving as a senior two year old, the world's record in class. She is the highest record daughter of Prince Gelsche Walker, one of the greatest young sires of the breed, and out of De Kol of Valley Mead 2nd, 1011.71 pounds butter in one year as a four year old whose dam is a famous granddaughter of De Kol 2nd, the fountainhead of the De Kol family. This heifer is only fairly started on her high production accomplishments.

Ten of the fourteen nearest ancestors of KING KORNDYKE PONTIAC 20TH are living and in high class herds where they and their offspring are being fully developed, and in this herd he will be bred to a large number of high record females and the young daughters of

## Prince Riverside Walker

our senior herd sire, about whom you will hear much later on.

Come and visit KING KORNDYKE PONTIAC 20TH at home, see the quality of the cows with which he will be mated, and you will surely find something that will fit in with your breeding plans.

W. J. HIGDON, Tulare, California

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles



famous proven sire recently secured by Henderson Company, Sacramento, to head their big herd of registered Holsteins, now has 30 A. R. O. daughters, and as many of his daughters now in some of the best Eastern herds are due to drop their first calves during the present season he will no doubt have a much larger list by spring. He is being bred to a large number of great cows and heifers in the Henderson herd where his first calves are due in the spring. The manner in which he is fulfilling the promise of his rich breeding, coupled with his close relationship with Prince Gelsche Walker whose offspring are making sensational records, assures this family a place of the greatest prominence in current Holstein history.

Luther Thompson, Modesto, recently purchased from Bridgford Company a handsome and splendidly bred young bull to head his herd of registered Holsteins. The dam is the beautiful heifer Chimacum Maud, that recently completed official records in the Bridgford herd of 624 pounds milk and 29.81 pounds butter in seven days at the age of three years, five months. She is not only a great individual and producer but is also of unusual size, weighing at the present time 1900 pounds. The sire of Mr. Thompson's new herd sire is Sir Chimacum Wayne, son of the great Chimacum Wayne Boon, 613.8 pounds milk and 33.69 pounds butter in seven days at 4½ years, 23,576.40 pounds milk and 1067.47 pounds butter in one year at six years, and from last report she had 561.92 pounds butter and 11,980.5 pounds milk to her credit in the first 148 days of the test she is now on. She is the highest yearly record daughter of the great sire Sir Veeman Hengerveld, and is the dam of Chimacum Wayne Boon 2nd the great heifer that made 21,572.6 pounds milk and 882.60 pounds butter in one year as a two year old. The sire of Sir Chimacum Wayne is a son of the great producer Margie Newman, 868.2 pounds milk and 32.79 pounds butter in seven days, 3555.6 pounds milk, 131.19 pounds butter in 30 days, and she is the dam of Margie Newman 2nd, 720.1 pounds milk and 31.13 pounds butter in seven days. It will thus be noted that Mr. Thompson's new sire is backed by tremendous records of both milk and butter, which is better emphasized by the facts that four of his first dams average 656 pounds milk and over 30 pounds butter in seven days, and two granddams average 24,036 pounds milk and 1011 pounds butter in one year.

Bridgford Company, Knightsen, recently purchased from Gotshall & Magruder, Ripon, the heifer calf from Spring Farm Cornucopia Ormsby, the \$1650 heifer. She is sired by the Bridgford senior herd sire, King Segis Alcartra Abbecker, and her first 11 dams have the splendid average of 30.81 pounds butter in seven days including the two year old record of her dam.

Bonita Stock Farm is getting under way with official testing of their reg-

istered Holsteins, and some creditable records have been made regardless of the fact that this is not long since the cows and heifers comprising the herd reached California from the East. About 20 cows and heifers have completed seven day records so far with records up to over 22 pounds butter, including a number of 16 to 18 pound two year olds. The herd is headed by the 32 pound sire, Supreme Glista Pietje.

Senator J. M. Hackney of Minnesota, owner of Arden Farms, announces that every daughter of his sensational Holstein bull, King Segis Pontiac Count, will be given a yearly record. The greatest breeders in the country are rapidly recognizing the fact that the yearly record is the only stable foundation upon which to construct a high class herd of registered dairy cattle for future demand, and are laying their plans accordingly.

The value of a pure bred registered dairy sire is nowhere better proven than when the dairymen gets ready to sell his herd at public auction. It is nearly always noticeable in such an auction sale that daughters of the pure bred bull will bring from \$15 to \$30 a head more than the daughters of a scrub bull, and the cows fetch more money when they are in calf to a registered bull. And there are still dairymen using scrub bulls and apparently expect to breed the kind of cattle that other dairymen want to buy. What a difference an investment of \$200 or \$300 in a good registered bull would make on the day the herd is sold!

While testifying before the commission investigating the price of milk in San Francisco recently, Frank Somers & Company, hay and grain dealers, stated that in his opinion no hay is being held in storage by dealers and that he would not be surprised before the winter is over to see alfalfa hay sell between \$35 and \$40 per ton. The writer has recently been through some sections of California where hay can usually be bought at this season of the year, and there is none for sale. The farmers themselves seem to be the fellows who have the hay this year, and they are not storing it for speculative purposes. There seems to be just about enough on hand to carry these live stock owners through the winter and keep them out of the clutches of the usual hay speculators.

To those who look far into the future California's present development as a producer of dairy products is only a starter toward the commanding place the state will one day hold in the dairy world. Development along dairy lines promises to be exceedingly rapid during the next few years, for widening markets are opening up, the establishment of condensers has fairly begun, cheese factories are multiplying, and, best of all, California dairymen have at last begun to think Organization, cow test work, the use of pure bred registered sires, the silo, are four mighty important dairy factors that are receiving a lot of attention these days all up and down the state.

One hundred silos were built in Tulare County during 1917, and at a conservative estimate 250 silos were built in Stanislaus County during the same year. Three hundred and fifty silos in one year in just two counties of a state that probably did not have within its entire boundaries over 50 silos five years ago! The silo and prosperity have gone hand in hand in other live stock producing states, and

## Get on the Band Wagon With Other Progressive Breeders

by heading your herd with a real bull as indicated by the yearly records of his ancestors.

### Why Take a Chance on the Abnormality of Short Records?

Never before has there been such demand for yearly record sires. The leading breeders of America are turning to yearly record bulls regardless of short records.

We can offer now an outstanding youngster backed by both yearly and short time tests. From a yearly record standpoint he compares favorably with the best of the breed.

His Sire: **SIR AAGGIE DE KOL ACME** (whose dam and sire's dam average 1236.98 pounds butter in one year), son of Aaggie Acme of Riverside 2nd, 1331.64 pounds butter in one year, strictly official, 2426.76 pounds in two years. Both world's records.

His Dam: **MISS DUTCH 2ND**, now in test and promises to exceed 850 pounds butter in one year as a four year old. Her dam has 1025.97 pounds and her dam 1008.27 pounds.

In seven day test dam's record 26.78 pounds butter as a four year old, her dam 30.05 pounds, next dam 27.60 pounds. His sire's dam 35.38 pounds.

This bull's three nearest dams average for one year 1065.78 pounds butter, for seven days 30.74 pounds. Six of his first seven dams average for one year 1026.17 pounds, for seven days 29.72 pounds.

His dam is a daughter of **KORNDYKE QUEEN DE KOL'S PRINCE**, one of the breed's greatest sires. She will surely increase her present records.

This richly bred young fellow was born April 30, 1917. He is beautifully marked and his type would be hard to fault. The price is lower than the same quality can be had for anywhere else in the United States.

Write today for pedigree and information

**A. W. Morris & Sons Corporation**  
Woodland, Cal.

## King of the Black and Whites 83354 The Greatest Producing Sire in California

Now has 30 A. R. O. daughters, a greater number than any other sire in California, and more coming right along.

He was the first bull in the world whose seven nearest dams averaged over 30 pounds butter in seven days, and this is only one instance of the remarkable uniformity of the great production records in his pedigree both for milk and butter.

He is transmitting his wonderful inheritance of large milk and butter production because there are no weak spots in his breeding for generations back, no throwing back to a low producing ancestor, and by every law of animal breeding his daughters, as they are already proving, will be uniformly great producers and his sons will hand down his good quality to their offspring.

### King of the Black and Whites

is being given a full opportunity in our herd where he is being mated with a large number of high record cows and highly bred heifers. We have none of his offspring to offer at present, but if you want to keep your herd in line with the march of production records it will interest you to visit our herd and get acquainted with these matings.

We have a limited number of grandsons of King of the Black and Whites and King of the Pontiacs for sale at moderate prices and terms.

**HENDERSON COMPANY**

Sacramento Bank Bldg.

Sacramento, Cal.

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Offers for Fall Delivery, Both Registered and Unregistered

**Weanlings Bulls and Heifer Calves, Entire Herd Tuberculin Tested**

For further particulars and prices apply to

**PAICINES RANCH COMPANY**

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### Brighton Farm Herds

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Berkshires—Both Sexes

**H. L. & E. H. Murphy**

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There was never a time in the history of the world when the saving of every ounce of butter-fat and every particle of effort and time was so important as now.

There was never a time when the use of a late improved De Laval Cream Separator meant so much to every cow owner.

This is true whether you are using no separator, some inferior separator, or even an old style De Laval machine.

Fortunately it happens to be not only a matter of patriotic duty but at the same time one of dollars-and-cents advantage as well.

A New Type De Laval Cream Separator skims cleaner and produces a better quality of cream than any other separator or skimming method.

Likewise, by reason of its easier turning, easier cleaning, greater capacity, simplicity and durability, it saves time and labor over any other machine or method.

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We guarantee all this to be true—but the better way is to demonstrate it in your own dairy to your own satisfaction.

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## DE LAVAL DAIRY SUPPLY CO.

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PREVENTED AND CURED PERMANENTLY

YOUR COWS MADE PROMPT. REGULAR BREEDERS BY

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STOP LOSING CALVES

**TREATMENT:** If STERILOID is used at the first sign of abortion the cow will go her full time and have a healthy calf. If your cows or heifers do not come in season, or fail to get with calf, use STERILOID. Cows get with calf after only one treatment. Write today for FREE BOOK. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with STERILOID. Also contains letters from breeders who have used STERILOID successfully.

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You can  
**Wipe Abortion Out**  
of your herd and  
**Keep it Out**

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Answers every question. Tells how to treat your own cattle at small expense. Send for booklet now. A postal will do. State number of cattle you own.

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## Hopland Stock Farm

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Registered Bulls—yearlings and two year olds. Bred on same lines as our Grand Champion cow at Sacramento, 1917.

Bears and Gilts by Iowana Rival Majestic, a son of Rival's Champion.

Prices Reasonable on Application

San Francisco Office

226 Southern Pacific Bldg

Better service is assured by the advertiser if when writing you mention the California Cultivator.

the same condition is bound to prevail in California.

Sir Pietertje Ormsby Mercedes, the great Holstein bull formerly at the head of the E. C. Schroeder herd in Minnesota, is dead. He has left behind him a wonderful lot of sons and daughters, the latter being noted for show ring winnings, short time records, and more especially their yearly records, four of them having produced from over 1100 to 1389.45 pounds butter in one year. As far as we know only one of his sons is in service in California, that one being a splendid type one now at the head of the herd of registered Holsteins owned by The McCloud River Lumber Company, McCloud.

Jessie Fobes Bessie Homestead, the great Holstein cow that topped the females of the Detroit Guarantee Sale at \$4600, died recently following an attack of milk fever. She was the first cow to make over 33 pounds butter in seven days in three successive lactation periods, and was rated as one of the breed's greatest cows. Since the Detroit sale she has dropped two living calves, both bulls and both by high record sires. W. J. Higdon of Tulare purchased a number of females in calf to one of her sons about a year ago and now has several granddaughters of this great cow.

Every Holstein Breeder needs the Blue Book in order to keep posted on the official records made by cows of the breed. Volume 28, just out, contains over 1400 pages of plain facts about Holstein records, well classified for handy reference. The price of the volume is only \$2.25 postpaid and may be secured from Superintendent of Advanced Registry, Malcolm H. Gardner, Delavan, Wisconsin.

California Breeders' Sales and Pedigree Company has received interested inquiries for catalogs of its sales from both China and Japan during the past few months. Prominent Japanese have already made a number of purchases of registered Holsteins.

E. Susaeda, who recently purchased a splendid lot of registered Holsteins for the interests he represents in Chile, stated that the common cow in Chile averages about five pounds of milk per day, being milked only once. There are one or two herds of grade Holsteins that average about 20 pounds of milk per day, milked once a day. Mr. Susaeda is taking back to Chile with him a number of California silos and a fund of feeding knowledge gained during his course at University Farm, Davis, it will be interesting to note what will happen in his section of Chile when his registered Holsteins begin to freshen.

Alex Whaley, Tulare, who is rapidly progressing as one of the leading California Holstein breeders, recently made a very fortunate purchase of a junior herd sire from A. W. Morris & Sons Corporation, Woodland. This young fellow is Sir Aaggie De Kol Acme 2nd, and is sired by Sir Aaggie De Kol Acme, owned jointly by the Morris and Fred W. Kiesel of Sacramento, he being a son of the world's official record butter cow, Aaggie Acme of Riverside 2nd, 1331.41 pounds butter in one year. The dam of this young fellow is one of the greatest cows in the Morris herd, Aralia De Kol 3d, who recently completed a yearly record of 1101 pounds butter. She is a daughter of the former world's record cow, Aralia De Kol. Some idea of the tremendous yearly butter records behind Mr.

Whaley's new sire is indicated by the fact that the three nearest dams average 1191.57 pounds butter in one year, and five of the seven nearest dams average 1105.17 pounds butter in one year, making him one of the best backed yearly record bulls of the breed.

J. H. Hulbert Jr., Mt. Vernon, Washington, recently selected a wonderfully well bred young bull from the herd of A. W. Morris & Sons Corporation, Woodland, to take up the duties of junior herd sire in his famous herd. The bull Mr. Hulbert selected is Segis Pontiac Mead, sired by Segis Pontiac De Kol Burke, son of the former world's record cow, Riverside Sadie De Kol Burke. The dam of Mr. Hulbert's new sire is Aralia De Kol Mead, by King Mead of Riverside and out of Aralia De Kol. As a two year old she made 870.61 pounds butter in one year and is now well along on a yearly test that promises to exceed 1150 pounds butter. Thus Mr. Hulbert's bull is full brother to Aralia De Kol Pontiac Mead who recently finished her year with 934.25 pounds butter as a senior two year old, the California record in class by a wide margin. Mr. Hulbert's senior herd sire is Segis Pontiac Acme, also a Morris bred bull, whose get provided the sensation on the Northwestern show circuit last fall, and in selecting a sire to mate with the daughters of this bull, Segis Pontiac Mead seems a happy selection both for breeding and individuality, and strongly fortifies the yearly record blood already present in the Hulbert herd.

Two noteworthy records were recently made by a pair of twin heifers in the A. W. Morris & Sons Corporation herd of registered Holsteins. Both freshened as junior two year olds, Aralia De Kol Mead 2nd making 21.60 pounds butter in seven days and her twin sister, Aralia De Kol Mead, making 15 pounds butter in seven days. The noteworthy feature is the excellence of the record of the first named heifer who milked as high as 73 pounds in one day, and the fact that the last named heifer freshened with two blind quarters and still made 15 pounds butter in seven days and milked as high as 53 pounds in one day out of half an udder, making a record for both milk and butter that would not be at all discreditable to a good junior two year old with a whole udder. These heifers are sired by Segis De Kol Burke, and as their names indicate are out of Aralia De Kol Mead, and are thus full sisters to Aralia De Kol Pontiac Mead, 934.25 pounds butter in one year as a senior two year old.

Meadow Holland Nudine, grand champion Holstein cow at Riverside District Fair, and sold by Stalder Bros., Riverside, in the Guaranty Sale to Fred W. Kiesel, Sacramento, is fulfilling expectations. She freshened the day before she was shipped from Riverside to Sacramento, went through the discomforts and excitement of sales quarters, and was then shipped to her new home, Mr. Kiesel's Jane Garden Farm. She was then placed on official test and has completed record of 25.10 pounds butter in seven days as a junior four year old. Besides being such a splendid individual she is regarded as a candidate for a much larger record under favorable conditions and looks like a most promising member of Jane Garden Farm herd.

Only two cows in California so far have produced two daughters that have made records above 30 pounds butter in seven days. The first of



these was Mabel Haskins of San Jose, Kenneth Abbott's famous cow, and the other is Winifred Hotaling, one of the cows formerly in Richard M. Hotaling's Sleepy Hollow herd. One of her daughters, Winifred Hotaling 3d, made 32.19 pounds butter in seven days after Alex Whaley had consigned her to the Guaranty Sale, where she was purchased by W. P. Higdon of Tulare.

The rapidly growing demand for yearly records of milk and butter behind the herd bulls bought by the most progressive dairymen is reflected in the increased demand for sires backed by yearly records, among owners of registered herds. A most satisfactory number of developing herds are being headed by splendid yearly record bulls, and as the supply of this class of bulls is very limited there are not enough on hand in the country to meet present demands. Which shows that the dairyman has been doing some figuring and has found that the additional security offered by a yearly record is well worth his investment.

Gotshall & Margruder, Ripon, two live wire business men and bankers, started to breed registered Holsteins only a few years ago and in securing their foundation animals they were liberal buyers at several public sales. They became known as prominent bidders when the top animals came up, and how well their selections were made partially revealed at the Guaranty Sale. In a Southern California sale they purchased one of the highest priced heifers of the sale, the now famous state record two year old K. P. Tola Joe. At the Guaranty Sale they sold her six months old heifer calf, Lady Sadie Vale Joe Karlay, to John W. Benoit, Modesto, for \$1400, and she was one of the most eagerly bid for animals in the whole sale. Sometimes the beginning breeder hesitates about going after the top animals, even though any experienced breeder will tell him that it is good business, but it pays to do it.

Fred W. Kiesel is another Holstein breeder who went out after the good ones for foundation and paid the price that good ones demand. In the 1915 Morris-Alister sale he bought Jane Korndyke of Riverside, the 31 pound cow that topped the sale. In the Guaranty Sale he sold her yearling daughter for \$1300 after a spirited bidding contest.

James McGillivray, owner of Willowmead herd of registered Holsteins, has moved the herd back to Sacramento from Galt where it was taken following Mr. McGillivray's purchase of a 1200 acre ranch there. A very large number of the females in the herd are being bred to Dutchland Sir Korndyke Colantha, whose first daughters to freshen made such excellent records, half of those tested making over 20 pounds butter in seven days as junior two year olds.

H. E. Vogel, Fresno, recently selected a high class young bull from the herd of A. W. Morris & Sons Corporation. This youngster is sired by King Mead of Riverside, sire of the world's official yearly record butter cow Aaggie Acme of Riverside 2nd, and is out of Margaret Aralia De Kol, a 26.91 pound four year old granddaughter of Aralia De Kol. She made 723.02 pounds butter in one year as a senior two year old and is now well along on a year's work that promises to finish well above 1000 pounds butter. This young fellow should prove a noteworthy addition to the Vogel herd where sires backed by yearly records

have been used for a number of years. The herd is already noted for its many fine individuals and when official testing begins there promises to be something of more than usual interest to report.

Agee Brothers of Imperial County recently disposed of their good herd of grade Holsteins to replace them with purebreds. They already have a number of registered Holstein females and recently secured a highly bred bull to head their herd from Toyon Farm Association, San Jose. This young fellow is Toyon Fayne Valdessa, a bull that was selected for the Guaranty Sale provided the pending deal with Agee Brothers was not closed. They bought the bull previous to sale date and he did not appear in the sale. He is sired by King Valdessa, the famous young son of the great 41 pound cow, Valdessa Scott 2nd, and is out of FINDERNE Miriam Fayne, a 30.54 pound four year old daughter of King Hengerveld Aaggie Fayne, two of whose daughters hold the world's yearly butter records in the junior two year old and junior three year old classes, and whose sire is also the sire of the only 50 pound cow, Segis Fayne Johanna.

The Holstein Breeders' Guaranty Sale held at Sacramento on December 5 established several new sales records. It was the biggest one day Holstein sale ever held anywhere; the average of \$957 per head was the highest ever made in a Holstein sale where the top animal sold for less than \$20,000; and the lowest price for an animal in the sale, \$330 for a young calf, was the highest price ever paid for the lowest priced animal in a Holstein sale. All of which goes to show that the committee of selection did its work well and found appreciative buyers on sale day. A prominent out of the state breeder remarked at the close of the sale that it was the best lot of cattle and the best managed sale he had ever seen and that the California Holstein breeders are as fine a body of men as he has ever met.

Recent Holstein sales have justified in a most striking manner the good judgment of breeding and individuals displayed by Superintendent W. H. Taylor when he selected the foundation animals for Anita M. Baldwin's Santa Anita Rancho. In two recent sales Santa Anita Rancho sold only calves, offspring of the original foundation cows and heifers, yet in one sale the Santa Anita consignment brought the second highest average, and in the Guaranty Sale topped the average of the sale when eight calves sold for an average of \$1388, including the great bull, King Korndyke Pontiac 20th that fetched the Coast record price of \$6500.

Holstein Breeders, like all other business men who are speculating on just what effect the war is going to have on their business, may find a guiding line in the experience of breeders in England, a nation that has now been at war for over three years. During the past year over 1000 head of registered Holsteins were sold at public auction in England for an average of over \$500 per head. Which indicates that when food is scarce and prices are high the pure bred Holstein cow becomes better than ever appreciated. In this connection it is also worthy of note that England's record sale of registered Holsteins was held quite some time after the war was under way, an average of over \$1200 per head having been secured on that occasion.

## Jerseys for Net Profits



You're in the dairy business for profit—the net profit that your herd has made you at the end of the year will determine the size of your bank account. Jerseys yield the largest returns from every ounce of feed—proved by tests at two great expositions. Jersey milk averages 5.3% butter fat, 9.1% solids not fat—highest of all breeds. Buy a Jersey bull.



Write the breeders advertised below for prices, pedigrees, etc.

The American Jersey Cattle Club, 356 West 23rd Street, New York City

### Young Jersey Bull

of excellent breeding at a fair price. Write for particulars to

**W. G. GURNETT**  
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Member Orland Jersey Cattle Club.

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FOR SALE

A fine straight one, bred right, priced right

**S. F. WILLIAMS**  
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### ANCHORAGE FARM

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### Fuimus Farms - Jerseys

Herd Headed by You'll

Do Oxford's Lad

Write Us Your Wants

**J. E. Wherrell**

1581 Sedgwick St., Riverside, Cal.

### Get One of My Jersey Bulls

to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynilyn.

Visitors Welcome

Correspondence Invited

**A. A. Jenkins**

R. R. Box 46

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### Venadera Herd

REGISTERED JERSEYS

Young bulls from proven dams in Register of Merit

**GUY H. MILLER**

MODESTO, CAL.

ALL MY RECORDS are made under ordinary dairy conditions. The farmers cow is

### The Jersey

YOUNG BULLS FOR SALE

**C. D. HAYWORTH**  
MODESTO, CAL.

### Young Jersey Bulls

FOR SALE

One at the head of your herd will pay big dividends on his cost. Write to

**W. J. HACKETT**  
MODESTO, CAL.

### A. J. C. C. Jerseys

Senior Sire: Imp. You'll Do Circus  
Junior Sire: Financial Ferns Oxford

High Producers

**Wm. Appleby & Sons**  
Mesa, Arizona

#### JERSEYS

There was never a poorer time to keep the average cow. Milk production must be maintained, but no one will care to maintain it as a losing proposition. The cow that pays is the cow to keep, and the Jersey pays.



## Santa Anita Rancho

Anoakia Breeding Farm



**ARABIAN THOROUGHBREDS:** Two-year-olds, sired by Imported Stallion Ibn Mahrus, head of our Arabian stud. Dams are the choicest thoroughbred mares on Santa Anita Rancho.

**SADDLE HORSES:** Some of which were sired by Ibn Mahrus, world renowned imported desert saddle stallion, and Don Castano, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

**POLAND-CHINA AND BERKSHIRE BOARS:** Four to nine months old. Sired by famous Poland-China herd boars, Banker's Boy and Glenview Wonder. And Berkshire boars, Kistyre Laird, Grandson's Duke and Fashion's Longfellow 5th. The dams are from the best blood lines. Most all these animals have winnings at World's Fair. Write for catalogue.

**HOLSTEINS:** We will sell a number of young bulls. Some sons and grandsons of the noted State Record Cows. Write for details.

Correspondence Invited

**Anita M. Baldwin**

**W. H. TAYLOR, Superintendent**

**Santa Anita, Cal.**

## Prize Winning HAMPSHIRE

The farmer who wants a hog that puts on 200 lbs. of firm meat at six and a half months of age buys the Hampshire.



Boars, gilts, bred and open, for sale from the P. I. E. Clampion Hampshire stock, just as nearly perfect as they make them.

**F. A. Langdon**  
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**Llano Vista Ranch, Perris, Cal.**

**F. V. Gordon**  
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Herd Sire, Dairy King of Arizona  
CHOICE BREEDING STOCK FOR SALE

**A. MACMINN**

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### Shorthorn Cattle and Berkshires Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco  
Carruthers Farms, Mayfield, Cal.

### HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

#### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

**Whittier State School**  
WHITTIER, CALIFORNIA

### HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

### Holstein Friesians

Herd of over 200 head to select from headed by King Mead Acme, whose dam, Sadie De Kol Acme, made 885 pounds butter in one year. We breed for high production and high testers.

Will sell bulls that give satisfaction to the buyer and at reasonable prices.

**Frank Helm**  
Fresno - - California

### Duroc-Jersey Hogs AT IRELAND

Ranch at Owensmouth  
City Office: 1219 Brockman Bldg., Los Angeles  
Spring Boars by Orion Cherry King V (Reformer) For Sale

### ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. It acts mildly but quickly and good results are lasting. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. \$2.00 a bottle delivered. Horse Book 9 M Free.

W F Young, P. D. F., 244 Temple St., Springfield, Mass

### Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

**M. Bassett**

Hanford, Kings County, Cal.



SECRETARY Stollery of the California Cattlemen's Association sends us a copy of a letter which General Manager Beard of the Sacramento

Valley Development Association has sent out regarding the advisability in the present feed shortage of extensive feeding of rice straw. From Mr. Beard's letter we quote: "I desire to say something to you and through you to the cattlemen of the state about rice straw. Rice straw is successfully fed to horses and cattle, especially where complementary feeds are available.

"Rice straw is abundant in the Sacramento Valley. The rice fields of this

### Feed Rice Straw

valley produced this year approximately 100,000 tons of rice straw. Some of this has been baled and shipped out; much of it remains in the rice fields, probably not less than one-half of the total, or 50,000 tons, and is due to be burned unless the stockmen of the state, who may need it for wintering stock, act without delay.

"In view of the extended dry season and lack of forage, it seems to us the existence of a great supply of good rice straw would be of very large interest to stockmen. I am writing you about it as president of the state association and trust you will take steps to advise cattlemen throughout the state."

### November State Dairy Cow Competition



FROM the announcement by the University of California of the results of the state dairy cow competition for November we give records of highest producing cow from each herd; also complete 12 months record. The top-notchers for November are:

Alba Sadie Cornucopia Cretia, Holstein, seven years, four months old, 273 days in milk, 1267.8 pounds milk, 3.78 per cent fat, 47,923 pounds butterfat, owned by Anita M. Baldwin.

Irene, six years old, 153 days in milk, 987 pounds milk, 5.20 per cent fat, 51,324 pounds butterfat, owned by F. Beebe.

Leda De Kol Ormsby, Holstein, four years, nine months old, 188 days in milk, 1504.1 pounds milk, 3.28 per cent fat, 49,334 pounds butterfat, owned by A. M. Bibens.

Tillie, Grade Holstein, seven years

old, 163 days in milk, 1069.2 pounds milk, 3.84 per cent fat, 41,057 pounds butterfat, owned by Bohnett Bros.

Pansy, Grade Jersey, 211 days in milk, 799.8 pounds milk, 5.7 per cent fat, 45,589 pounds butterfat, owned by J. M. Bomberger.

Little Surprise, Grade Jersey, five years, 188 days in milk, 810.0 pounds milk, 6.76 per cent fat, 54,756 pounds butterfat, owned by J. W. Coppini.

Golden Idelia of Belle Vista, Guernsey, three years and four months, 158 days in milk, 742.2 pounds milk, 5.41 per cent fat, 40,153 pounds butterfat, owned by Dr. J. W. Henderson.

No. 458, Grade Guernsey, five years, two months, 218 days in milk, 714.7 pounds milk, 6.60 per cent fat, 47,170 pounds butterfat, owned by Hollow-Hill Farm.

Roan Cow, Grade Guernsey, seven years, 225 days in milk, 1101.0 pounds

#### COMPLETED 12 MONTHS RECORD

No.	Name of Cow	Age	Days in milk at start of record	Milk	Butterfat	Ave. Fat.	Credit for Butterfat
				Pounds			
1.	Roxie Pauline Burke Hengerveld, H.	6	3 5	21,871.2	809.780	3.70	809.780
2.	Jennie Terzool Hicks 4th, H.	7	9 5	21,445.0	764.938	3.57	761.938
3.	Fern's Silver Ray, J.	7	11 5	12,832.5	668.541	5.21	668.541
4.	Miss Gelsche Walker Korndyke, H.	2	4 6	14,757.4	526.472	3.57	684.414
5.	Kitchener's Dainty Lass, G.	5	7 5	11,443.1	644.103	5.63	644.103
6.	Blackie, Gr. H.	5	16	18,130.2	621.245	3.43	621.245
7.	Butternut Queen, G.	8	1 5	11,855.0	608.893	5.14	608.893
8.	Mysie's Jane of Alta Vista, G.	7	7	13,065.2	586.913	4.49	586.913
9.	Imp. England's Lady Orange, G.	5	6 15	11,320.0	585.818	5.18	585.818
10.	Holland Aaggie Belle Colantha, H.	7	9 5	19,530.8	579.544	2.97	579.544
11.	Janette, Gr. H.	5	11	18,141.3	577.791	3.19	577.791
12.	Princess 2d, Gr. J.	6	10	10,041.4	555.306	5.53	555.306
13.	No. 459, Gr. G.	6	9	8,804.0	527.407	5.99	527.407
14.	Rosa, Gr. H.	5	16	15,418.9	515.661	3.34	515.661
15.	N. S. H. Brownie, Gr. H.	6	7 20	15,872.1	497.165	3.13	497.165
16.	Fannie, Gr. H.	5	27	15,952.2	496.312	3.11	496.312
17.	Clementine Mabel, G.	11	11 10	10,957.8	495.275	4.52	495.275
18.	N. S. H. Queen, Gr. H.	7	31	15,665.8	485.519	3.09	485.519
19.	Spot Teat, Gr. H.	3	20	14,812.9	485.496	3.28	572.885
20.	Rumpy, Gr. H.	5	9	16,054.0	473.132	2.95	473.132
21.	Carmelita, Gr. H.	3	28	13,154.4	471.265	3.58	556.093
22.	Lady Ormsby Burke, H.	3	11 15	14,216.3	458.883	3.23	527.715
23.	Spot, Gr. H.	3	13	14,027.2	453.335	3.23	534.935
24.	Shy Lady, Gr. H.	3	11	14,925.4	450.475	3.02	531.561
25.	Brownie, Gr. H.	5	12	12,424.7	448.896	3.61	448.896
263 days died.							
26.	Dixie, Gr. H.	3	5	13,563.7	436.599	3.22	515.187
27.	No. 480, Gr. G.	4	9 6	9,680.3	436.302	4.51	458.117
28.	Flossy, Gr. J.	9	5	9,010.2	421.685	4.68	421.685
29.	Lowland's Lad Lilly, J.	10	11 5	8,021.9	413.292	5.15	413.292
30.	Cynthia of Buttler Valley, J.	3	6 5	8,126.4	390.186	4.80	460.419
Owners of Cows: 1, 2, 5, 8, 9, Palo Alto Stock Farm; 3, 29, Van Derpoel; 6, 11, 14, 16, 19, 20, 21, 23, 25, 26, Stenzel; 10, Bibens; 12, Coppini; 13, 27, Hollow-Hill Farm; 15, 18, 23, 24 Napa State Hospital; 17, Dr. Henderson; 28, Bohnett Bros.; 30, Dr. Gross; 4, A. M. Baldwin; 7, Elliot-Brant Rancho.							

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milk, 5.98 per cent fat, 65,840 pounds butterfat, owned by Iver Iverson.

Miss Valley Mead De Kol Walker, Holstein, three years, four months, 187 days in milk, 1831.0 pounds milk, 4.21 per cent fat, 77,085 pounds butterfat, owned by A. W. Morris & Sons Corporation.

N. S. H. Monte 1st, Grade Holstein, six years, 245 days in milk, 1229.8 pounds milk, 4.16 per cent fat, 51.160 pounds butterfat, owned by Napa State Hospital.

Ninette Aine Pauline, Holstein, five

years, two months, 177 days in milk, 2231.6 pounds milk, 3.50 per cent fat, 78.106 pounds butterfat, owned by Palo Alto Stock Farm.


No. 97, Grade Holstein, (age not given), 231 days in milk, 1193.4 pounds milk, 3.72 per cent fat, 44,394 pounds butterfat, owned by Southern California State Hospital.

Rumpy, Grade Holstein, five years, 265 days in milk, 1157.2 pounds milk, 4.85 per cent fat, 56.124 pounds butterfat, owned by F. Stenzel.

Betsy, Grade Jersey, (age not given), 157 days in milk, 871.5 pounds milk, 5.98 per cent fat, 52,185 pounds butterfat, owned by G. E. Trigg.

Mermaid's Fern, Jersey, eight years, two months, 168 days in milk, 773.4 pounds milk, 6.25 per cent fat, 48,338 pounds butterfat, owned by University Farm.

Fern's Sylvana, Jersey, eight years, seven months, 150 days in milk, 814.8 pounds milk, 5.90 per cent fat, 48.073 pounds butterfat, owned by F. H. Van Derpoel.



### A Better Price For Your Milk

CLEAN milk which always has a readier market at a higher price, cannot be produced in dirty, dark, unsanitary stables.

### CARBOLA

The Disinfecting White Paint

will make your barns as white as snow and at the same time, without extra labor or time, rid them of lice and mites and other animal parasites and prevent the germ of glanders, contagious abortion, and other infectious diseases from getting a foothold. Carbola is a finely powdered, snow-white mineral pigment combined with a germicide.

**20 Times Stronger Than Carbolic Acid**  
and is ready to use as soon as mixed with cold water. Will not blister, flake or peel off. Has no disagreeable odor to paint milk. Use it in poultry houses, dairies, pigsties, cellars, etc. Endorsed by experiment stations, agricultural colleges and thousands of poultry, dairy and breeding farms.

10 lbs. (10 gals.), \$1.00 and postage  
20 lbs. (20 gals.), \$2.00 delivered.  
50 lbs. (50 gals.), \$4.00 delivered.

Trial package, that covers 250 square feet, and descriptive booklet for 25c postpaid.

Get some from your dealer. If he has none send your order direct with his name.

German Seed & Plant Co.  
Los Angeles, California

### TAGUS Holstein Friesians

(Officially Tested)

We offer for quick sale a mature registered bull for \$250 to first applicant.

Prices on application for breeding stock. Visitors invited to visit Tagus, just four miles north of Tulare.

(Dairy Dept.)

**Pacific States Corp.**

Tulare, Cal.

H. C. MERRITT, Jr., Manager

### A Good Year

1917 has been a good year for the Butte City Ranch registered live stock business and we take this opportunity of thanking our friends for their patronage and good wishes.

We have sold a large number of Berkshires, Shorthorns and Ponies — and have the best lot on hand we have ever offered.

During 1918 it is our hope that we may hear from all Cultivator readers who are in the market for Shropshires, Shorthorns, Berkshires or Ponies.

**Butte City Ranch**

Box C, Butte City, Glenn County, California



## Miss Valley Mead De Kol Walker Breaks Another World's Record

One more accomplishment in the sensational production records of Miss Valley Mead De Kol Walker, highest record daughter of Prince Gelsche Walker, has been achieved, and another world's record brought home to her owners, A. W. Morris & Sons Corporation, Woodland.

In view of the great accomplishments of this heifer it seems not out

which still stands as the world's record in class. She had been bred early in her lactation period and at the end of 257 days was taken off test having to her credit for that period 17,010.90 pounds milk and 790.38 pounds butter. She calved again as a junior three year old within a few weeks after she had been taken off test, and made the sensational records of 36.81



Miss Valley Mead De Kol Walker

of place at this time to review her young but brilliant history. She is sired by Prince Gelsche Walker, whose daughters have been the sensation in production records on the Coast during the past year and is out of that grand cow, De Kol of Valley Mead 2nd, who made 906.28 pounds butter in one year as a senior three year old and 1011.71 pounds butter in one year as a senior four year old, the world's record for two years butter production under full age at time of making. She also made 17.18 pounds butter in seven days eight months after calving as a senior three year old, world's record when made.

Miss Valley Mead De Kol Walker freshened for the first time as a senior two year old and made official records of 534 pounds milk and 25.68 pounds butter in seven days, California record when made. She was continued on yearly test and on official test for seven days eight months after calving she made 21.33 pounds butter

pounds butter and 688.60 pounds milk in seven days. She was again continued on yearly test and is going at better than an 1100 pound butter gait.

She was again put on official test for an eight months after calving record, and on Sunday, December 30, she had made 23.86 pounds butter in seven days, thus taking her place as the world's record holder in this division of the junior three year old class, and displacing the former champion Finderne Holingen Fayne. She is still on test and gaining.

She was bred early in this lactation period also, so early in fact that she will again calve within 12 months of her last freshening, and her wonderful ability to smash world's records carrying a calf practically throughout her tests stamps her as one of the very great heifers of the breed.

She is the dam of King Korndyke Pontiac 20th, the great young bull which W. J. Higdon secured for \$6500 in the recent Guaranty Sale, which is regarded as about the most proven great transmitting blood that a breeder ever bought for \$6500.

## Bridgford Company Holsteins Open Test Season With Big Records

The season's official test work has just fairly opened in the herd of registered Holsteins owned by Bridgford Company, Knightsen, and a number of unusually good records have already been completed. This herd, comparatively recently established, has already taken front rank as a show herd, and possibly only a few breeders realize the splendid breeding that is linked up with the many great individuals in the herd. The official test is now bringing this breeding into prominence and promises to establish the herd as an outstanding combination of type and production.

The following records have recently been completed in the Bridgford herd: Finderne Ethel Pontiac, a daughter of Gordon Glen Pontiac, at four years, one month, with second calf, 538 pounds milk and 27 pounds butter in seven days.

Panje Hengerveld De Kol, a granddaughter of Hengerveld De Kol, at six years, 533 pounds milk and 28.54 pounds butter in seven days.

Chimacum Maud, a granddaughter of Homestead Girl De Kol Sarcastic Lad, at three years, five months, 624 pounds milk and 29.81 pounds butter in seven days.

Empress Korndyke Pontiac, a daughter of Spring Farm King Pontiac, at two years, two months, 419 pounds milk and 23.02 pounds butter in seven days.

King Segis Pontiac Lyons, a daughter of King Segis Pontiac, 394 pounds milk and 18.35 pounds butter in seven days.

Farm center meetings of Glenn County next week are: Codora, January 8, Larkin, 11.

## FINDERNE SOLDENE VALDESSA

In placing Finderne Soldene Valdesa at the head of our herd of carefully selected registered Holstein breeding females we believe we have secured a very desirable combination of individuality and production.

HIS SIRE is King Valdesa, who is by a son of the highest record daughter of the mighty King of the Pontiacs, and is out of Valdesa Scott 2nd, 41 3/8 pounds butter in seven days, 164.29 pounds butter in 30 days, both world's records when made, and her wonderful transmitting power is shown by her five A. R. O. daughters with records up to over 38 pounds butter in seven days.

HIS DAM is the world's record heifer Finderne Soldene Hengerveld, 35.34 pounds butter in seven days, 136.82 pounds butter in 30 days at first calving as a three year old, and she is a daughter of the wonderful sire King Hengerveld Aaggie Fayne who has three junior three year old daughters with records from 31.94 to 37.33 pounds butter in seven days, and four senior three year old daughters with records from 35.33 to 37.13 pounds butter in seven days. One of his daughters holds the world's record in the junior two year old class for yearly production with a record of 1200.64 pounds butter, another holds the world's record in the junior three year old class with a production of 1295.06 pounds butter in one year, and a third daughter made 1075.29 pounds butter in one year as a junior three year old.

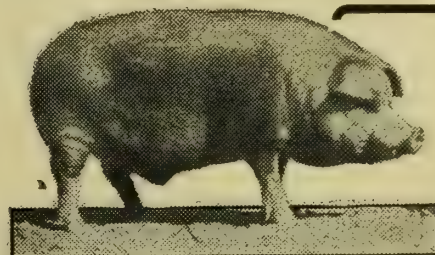
FINDERNE SOLDENE VALDESSA ranks high as an individual, and his first crop of calves in our herd, a large percentage of which have been heifers to date, are straight, vigorous youngsters, nicely marked, and we consider them unusually good.

We invite you to visit our herd, and it will be well worth your while to consider a son of FINDERNE SOLDENE VALDESSA for YOUR herd sire. We have a very few youngsters to offer at present, out of good A. R. O. dams.

## Toyon Farm Association

Office:  
First National Bank Bldg.  
San Jose, Cal.

Farm:  
Los Altos, Cal.



COUNCILOR—First prize junior yearling and reserve champion Duroc-Jersey boar at California State Fair, 1917.

## Prize Winners

### Duroc-Jerseys and Hampshires

Our Duroc-Jersey herd is headed by the sensational yearling Councilor, sired by Critic D, which was Reserve Champion at California State Fair.

The most popular strain of pure bred breeding stock for sale at all times.

### CONEJO RANCH

Address: Newbury Park, Ventura County, California Ranch located on Ventura State Highway, 40 miles northwest of Los Angeles.

Los Angeles Office, care  
JANSS INVESTMENT  
COMPANY,  
Fourth Floor Metropolitan  
Building, Fifth and Broadway

Our exhibit won 43 ribbons at the California State Fair, 1917, majority of which were Champions and Firsts.

Our Hampshire herd is headed by Grand Champion Boar Dukes Allen.



## Think!

And you will decide that your next herd sire MUST be backed by great YEARLY record of milk and butter. And when you look for a bull with such records behind him, find what we have to offer in young sons of

### PRINCE ALCARTRA KORNDYKE

our senior herd sire, whose dam is Tilly Alcartra, the world's greatest long distance producer, the only cow of any breed to average over



30,000 pounds milk for two years, over 29,000 pounds milk for three years, over 27,000 pounds milk for four years, and over 24,000 pounds milk for five years, the latter being her first five lactation periods. She has twice made over 1190 pounds butter in one year, and one other year made over 1000 pounds.

The first five daughters of PRINCE ALCARTRA KORNDYKE to finish yearly records as two year olds averaged 15,333 pounds milk and 675.92 pounds butter in one year, a showing equalled by only a very few bulls of the breed.

You need this persistent blood in your herd, and you can secure it by buying one of our moderately priced young sons of PRINCE ALCARTRA KORNDYKE.

The J. S. GIBSON CO.

Williams, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.



## "Hooverize" Your Poultry

War rations for poultry must include the coarser, cheaper grains and by-products. It is economy to use them *if your birds are able to fully digest them* and convert them into eggs and meat. And they can if you regularly add to the ration

### Pratts Poultry Regulator

America's Original Poultry Tonic and Conditioner

Pratts Poultry Regulator is not a food, but a scientifically compounded mixture of roots, herbs, spices, mineral substances, etc. Each ingredient performs a certain work in keeping the fowls in perfect health and highest vigor.

Its regular use cuts feed bills by preventing waste due to sluggish digestion, by enabling the fowls to thrive upon the coarser feeds. *And it makes hens lay.* It creates a keen appetite, improves digestion and circulation, regulates the bowels, makes the egg-producing organs "do their bit." We have backed these statements for 50 years with a broad money-back guarantee!

Pratts Poultry Regulator insures such vigorous health that the birds are practically immune from ordinary poultry diseases. For this reason alone it is worth its small cost—about 1c a month per bird. If ROUP—a germ disease—attacks your flock, Pratts Roup Remedy will quickly overcome this trouble. Use it in changeable weather as a preventive of roup and colds. It's guaranteed!

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—"Your money back if YOU are not satisfied"—the guarantee that has stood for nearly 50 years.

Write for 48-page poultry book

PRATT FOOD CO.

Philadelphia  
Chicago  
Toronto

**pratts**

## BUTTERMILK ADDED

THE U. S. GOVERNMENT AGRICULTURAL EXPERTS have proven that buttermilk prevents and cures White Diarrhoea and is of great importance in poultry feeding.

Send to U. S. Agricultural Dept. Station, Berkeley, Cal., for Bulletin 162 (free) explaining the value of buttermilk to poultry.

Globe A-1 Buttermilk Mash is a food poultry like and eat in preference to grain.

Costs no more than ordinary mash, but it's worth more because of the DRY BUTTERMILK added.

Sample and valuable feeding information free.

GLOBE MILLS, Los Angeles

**BUTTER GLOBE MILK  
DRY A-1 MASH**

## Produce More Meat and Eat Carneau Squabs

The squab pigeon of America. Every farmer has his chickens and every farmer should have his squabs for dinner. Hotels pay big money for squabs. Write for full particulars.

Riverside Squabry

Riverside - - - California

Try COULSON'S EGG FOOD FOR GREATER EGG PRODUCTION FULL PARTICULARS IN FREE BOOK "CHICKENS FROM SHELL TO MARKET" Coulson Co. PETALUMA, CAL.

Headquarters for IRRIGATION SUPPLIES PUMPS, ENGINES, SPRAYERS, HOISTS ETC. Catalog FREE on Request Smith-Booth-Usher Co. LOS ANGELES.

## Why Is a Poultry Show?

Written for California Cultivator By Jean A. Koethen



N ALMOST phenomenal rise of the poultry industry in 25 years, from the desultory keeping of hens on the farm by people who liked to have hens around and didn't care whether they were profitable or not, to a billion-dollar commercial enterprise has been due mainly to two factors, the incubator and the poultry show. Without the incubator the hatching of chicks in large numbers and at all seasons could never have been accomplished. Without the poultry show there would have been no improvement in type, no raising of the standard toward which all breeders are groping their way.

We are accustomed to remark carelessly that the fancy has been hard hit by the war, harder hit than utility, for eggs and meat are necessities; fine feathers a luxury that can easily be dispensed with. This is half true, for eggs and meat are certainly necessary, but it is only half true, for fine feathers, or at least the thing for which they stand, are also necessary. If the fancy has been harder hit by the war than commercial egg production—and I doubt if this is the case—it is because war is the great eliminator. In all phases of life we are being forced to eliminate temporarily the things that are not absolutely essential. We leave the sugar off our mush, the butter off our bread, not because sugar and butter are unimportant in the diet, but because greater considerations than personal taste bid us economize. In the same fashion the eyes of the poultry world are being turned on the problems of producing eggs and meat, not because feathers are unimportant, but because they seem for the moment less important than something else.

I said "for the moment," for after all there is no quarrel between fancy and utility. In the end both are working for the same thing, and that thing is the profitable production of eggs and meat. The standard demands in the hen the long back and deep keel without which satisfactory egg production is impossible. In males it demands also the long back, the thick thighs and deep chest which make for meat production, and the alert eye and well-poised head which denote vigor. Above all, it insists on weight, and there is no way in which a flock will deteriorate so quickly as by being allowed to run down in weight. The use of breeders that are under standard weight for two or three years will reduce a flock from a standard-bred flock to an aggregation of runts. We must keep breeding up to weight by the use of breeders that are fully standard size or we shall find ourselves steadily slipping backward.

Now where do we get our standard of weight and type and eye and carriage? Where but at the poultry show? Drop the poultry show for a single year and there will be a slipping back all along the line. Drop it for three

years and our standard, the star to which we hitch our wagon, is gone, and breeding but a haphazard thing without aim or purpose. There is the Standard of Perfection, of course, but who ever reads it outside of professional breeders? It costs too much for one thing. It is hard to understand for another. The fancier buys the Standard of Perfection, studies it comprehensively, and brings to the show the incarnation of the Standard's description. To be sure, this description is not infallible. The makers of the Standard are just ordinary men. But any standard is better than none. Exact shades of color, precise angle of tails are important only to the fancier, but some standard toward which to work is vital to any one who desires to improve his stock.

The farmer, the backlotter, the fancier, and to some extent the commercial poultryman, come to the poultry show as to a school where they may learn what is what and who is who in local and often extra-local poultry work. Our large shows feature stock from all over the state. Every breeder of consequence from Shasta to San Diego sends his stock to the Los Angeles show in January. From these exhibits the rest of us get our bearings for the coming year. Does it show stock weak in color? We learn here exactly where to get a cockerel that will improve color. Are our hens under weight? Eggs from that biggest hen of our particular breed will add size to the whole flock. Is our egg production not what it should be? Here is the weak point of most shows. They might tell us where to find cockerels from high producing mothers, but they do not. A few breeders, but a very few, advertise bred-to-lay stock. There should be many more.

Right in this one point, perhaps, the war, with the utility craze for which it is partly responsible, is going to teach our fanciers a lesson. The farmer and the backlotter are going to demand that the poultry show exhibit something more than fine feathers. At some of our shows there have been exhibits of coops and equipment. We want more of these. Above all we want to know where to buy bred-to-lay stock. We do not mind paying for it, but we want to know that we are getting what we pay for. We want to improve our stock and we want the show to teach us how to do it, not in respect of feathers and eyes and tails alone, but in egg production.

English poultrymen weakened in their support of the poultry show when the war began. They got back on the track ultimately, but it would have been easier to stay on. Let us learn a lesson from them and support the show with all our hearts, but let us demand that it give us what we need. The country must have eggs, if only for hospital use, and it must have meat. The industry must be kept alive at whatever cost, and the show is a vital part of its existence.

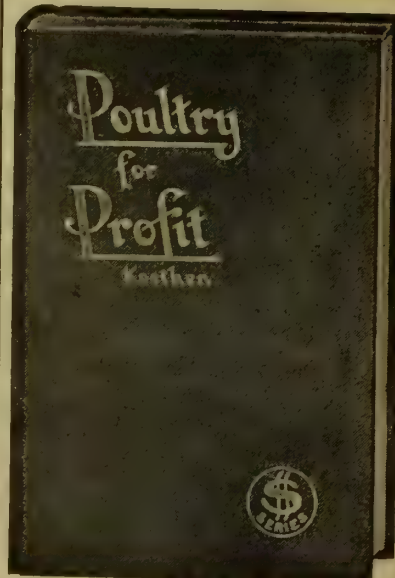
## Sodium Flouride for Chicken Lice



NE application of sodium flouride will kill all lice of chickens, the department of agriculture has discovered. This inexpensive white powder will rid a flock of all the seven common species of chicken lice in a few days. One pound,

costing only 40 or 50 cents at the time of this writing, is enough to treat 100 fowls, if dusted on. If dissolved in water and used as a dip, the same amount will go three times as far. It is easily applied, economical, gives immediate results, and does not injure the fowls or the poultryman.

# Poultry can be made to Pay



THERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

## Poultry for Profit

BY

Jean A. Koethen

Graduate of University of Calif.

Gives more practical knowledge of every branch of the poultry business in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this work experience in the poultry business is not as necessary. Through its guidance obstacles are overcome before it is too late.

The book is 5½x8 inches and contains 12 chapters, with over 225 pages of text and 18 pages of illustrations, printed on egg-shell book, binding full cloth vellum de luxe.

Equip yourself mentally First. Invest your capital LATER

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Sodium flouride—say it plainly to the druggist or you may get sodium chloride, common salt, which it not only resembles in name but appearance—may be obtained at most large drug stores. Until its recent use against conckroaches, and still more recently against poultry lice, this substance had not been employed as an insecticide. The demand for it, therefore, has been quite limited, and it is not ordinarily found in the stock of the small drug store. Druggists, however, can obtain it readily from manufacturing chemists, and with demand, it likely will be carried by local dealers. The finely powdered commercial form is cheaper and more easily applied by the dusting method than the fine, crystallized sodium flouride.

#### Dusting With Sodium Flouride

To apply the material in dust form, place it in an open vessel on a table and with one hand hold the fowl by the legs or wings. With the other hand place small pinches of the chemical among the feathers next to the skin, according to what is known as the "pinch" method, which proceeds as follows: One pinch on the head, one on the neck, two on the back, one on either thigh, and one below the vent, one on the tail, one on either thigh, and one scattered on the underside of each wing when spread. Each pinch can be distributed by pushing the thumb and finger among the feathers as the material is released. If the chicken is held over the vessel, the material which falls from the fowl during the operation is recovered.

The material also may be applied by means of a shaker, but this method has some disadvantages as compared with the "pinch" method. When this method is used the amount of sodium flouride may be reduced by adding four parts of some finely powdered material, such as road dust or flour, to each part of the flouride. The dust, while not poisonous, is somewhat irritating to the nose and throat. If allowed to remain on the skin in any quantity for any length of time, it may cause slight local irritation. For these reasons, those dusting a large number of chickens would do well to cover nose and mouth with a dust guard or damp cloth and to wash their hands occasionally.

#### Dipping with Sodium Flouride

The dipping method is more economical but among many poultry raisers there is a general sentiment against the practice of dipping fowls, largely because most of the dips contain materials which discolor the feathers. The sodium flouride dip, however, is harmless and as compared with dusting is more easily done. As it is necessary that the fowls dry quickly, dipping is most applicable in the southern states and to summer treatments in the north. For lice on young chickens, young turkeys, and in fact all newly hatched or sick fowls, the application of sodium flouride in the dust form is recommended.

This is the way the dip is prepared: In a tub of tepid water dissolve the poison at the rate of 3-4 to 1 ounce of the commercial powder, or 2-3 of an ounce of the chemically pure material, to each gallon of water. The fowls should be held by the wings over the back with the left hand and quickly submerged in the solution, keeping the head out, while the feathers are ruffled with the other hand to allow the dip to penetrate to the skin. The head then should be dipped once or twice and the bird lifted out and allowed to drain a few seconds. A fowl may be treated in 20 to 45 sec-

onds. The sodium flouride solution should not be allowed to remain long in galvanized vessels as its action on this metal is injurious. The solution does not injure the hands unless it comes in contact with sores, when it may cause slight irritation.

In experiments conducted by the department's specialists more than 800 fowls have been dipped at one time, using on the average 5.2 ounces of sodium flouride to 100 birds, at a cost of 13 cents. Labor is also reduced by dipping, the cost being about 58 cents for 100 fowls.

#### REMEDY FOR CHICKEN POX

A writer in the American Poultry Advocate says: "The best remedy for chicken pox that I know is calcium sulphide, sulphide of lime, a daily dose of one grain for every five pounds of the total weight of the flock. This is not easy to buy, may have lost part of its goodness when purchased, and is much trouble to administer. Today I would put the flour of sulphur as a satisfactory drug for treating chicken pox. Several large poultry plants now depend on this, having used it in outbreaks the past three years."

#### CASTOR BEANS

W. R. Nutting of Fresno, always awake to the needs of the producers of California, has been investigating somewhat as to the production of castor beans. No crop grown in California takes more naturally to our conditions, in fact it grows without attention and produces wonderfully. In the past it has not proven profitable because of labor conditions and low price of the oil. War prices now obtaining, however, make conditions look better, and Mr. Nutting advises there is possibility of developing a market for this product.

J. W. Lyon, of the Lyon Hatchery, Gardena, says "It looks to me as if the food commission are overlooking a good bet. A good big crop of young chickens would save more meat than a meatless Tuesday." Of course, on the other hand, broiler factories come back with the statement that no one can raise broilers at present feed prices. But there are feeds and feeds, and by careful watching of the market and buying in large quantities, or still better by growing, so far as possible, green and other feeds on the place, we may still grow meat which will save great quantities of the red meat which will stand for shipment to the Allies and to the trenches.

One feature of the recent poultry show at Modesto was the big utility class. Mr. Eastman of the Fairmead Poultry Farms writes us that they won every entry as follows: first hen, second cock, second pen, gold special for the highest scoring utility bird in the class (all heavy breeds competing), special for the highest scoring pen of Barred Plymouth Rocks.

Fertile land is the first need in farming for profit, the only kind of farming which we wish to encourage. Poor farms mean poor farmers, receiving little from their hard work—and poor farmers mean poor merchants, poor bankers and a poor country. Bringing back and maintaining soil fertility is therefore not only a farmers' problem but it is a community problem in which everyone is interested.

Anyway, cottontails can serve the nation better in rabbit pie than by gnawing fruit trees.

Now is the time to plan for summer shade in the poultry runs.



## Hatch Them All!

This year you've got to hatch a good chick from every hatchable egg and raise them all.

The country needs them. You need them. The meat supply is low and getting lower. Feed is high and every ounce of it must count.

The Buckeye Incubator and Standard Colony Brooder positively insure successful chick raising. They're guaranteed to do it. No guesswork about it.

Given good eggs a Buckeye will produce the full hatch of strong chicks the first time and every time.

Under a Standard Colony Brooder the whole hatch can be matured to a marketable size quickly.

### BUCKEYE

THE PERFECT INCUBATOR

Built up to a standard—not down to a price. Up to a standard of exact performance and certain results—a standard that makes practical the sweeping

#### Buckeye Guaranty

The Buckeye is guaranteed to hatch more chicks and stronger chicks than any other incubator; to operate satisfactorily in any temperature down to freezing; to require no artificial moisture and no attention to the regulator from the time the hatch is started until it is finished. Any Buckeye that fails to meet this guaranty will be taken back any time within 40 days.

Over half a million Buckeyes in use are giving universal satisfaction, insuring success to the beginner and enlarging the profit of the big operators.

You don't speculate with a Buckeye. It's business from the first hatch.

### STANDARD

Colony Brooder

A revolution in chick-raising. Stops brooder losses. Makes three chicks grow where one grew before. Burns hard or soft coal. Self-feeding, self-regulating, simple, safe, sanitary, certain of results. Raises all the chicks. Broods 100 to 1000. We guarantee it and let you write

#### Your Own Guaranty

Write down all you think a brooder should do for you. We'll sign it. And if the Standard does not fulfill your guaranty we'll send your money back. Over 30,000 breeders, big and little, use the Standard and not one failure is recorded.

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Los Angeles Agents  
FOR

**Buckeye Incubators and Brooders**  
Germain Seed & Plant Co.

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Los Angeles



# Apollo

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Both farm and city property owners need to know the absolute safety and service of metal roofing.

APOLLO-KEYSTONE Galvanized insures durability and satisfaction for all forms of sheet metal work, including Culverts, Tanks, Flumes, Spouting, Garages, etc. Sold by leading metal merchants. KEYSTONE Copper Steel is also unequaled for Roofing Tin Plates. Look for the Keystone added below regular brands. Send for free "Better Buildings" booklet.

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Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.



## Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 31,000 readers, weekly

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### TREES

At a Very Low Price, you can buy these fine Lemon and Valencia trees—special care has been used in budding this stock. Trees are straight with fine healthy foliage—are growing in sandy loam and give exceptionally good promises for producing fine groves. The entire stock will be sold—make early selections. Future profits depend on the selection of the right trees. Phone or write to us now to arrange to have us take you to our nursery in Whittier, to make your selection of these fine trees. LOS ANGELES ICE AND COLD STORAGE COMPANY, P. O. Box 643, Station C. Main 8191; 10053.

Eureka Walnuts are the Best—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alamanor St., Alhambra, Cal.

Here is Your Opportunity to Secure A-1 citrus trees. We offer several thousand 2-year-old lemons: Eureka and Villa Franca, also Washington navel; also several hundred Valencias on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

Let Us Show You Our Ideal twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References: R. R. Morris, East Whittier, Cal.

Placencia Perfection Walnut Trees on black root. Still have a limited supply of first class stock. Scions used in grafting taken from trees showing a high record for crop and quality after seven years of careful selection. Hugh T. Thomson, Orange, Cal. Phone 502R1.

For Sale: Citrus Trees—Choice stock, young and thrifty. Selected buds, Valencias and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110. Los Angeles.

Pear Trees—Offer several thousand Bartlett's, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton, Ore.

By Far the Lowest Priced means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 35 cents.

For Sale—170 two year old Placencia Perfection walnut trees on Eastern black root in orchard form, 50c each or exchange for Valencia orange trees. H. E. Hunt, Anaheim, R. D. 4, Phone Sunset 115-R-3.

Valencia, Orange and Eureka Lemon trees one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

For Sale—Valencia trees, extra fine yearlings, straight, thrifty, sour root, high buds, not fertilized, fine soil for balling. Will contract for spring planting. S. R. Coate, Anaheim, Cal.

Olive Trees—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, Cal.

Citrus Trees—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, Cal.

Walnut Trees—Placencia Perfection, selected grafts guaranteed stock. Wm. Pollard, South Pasadena, Cal.

Fig Trees—Thrifty, large Calmyrnas and Capris. Correspondence invited. C. A. Nelson, Exeter, Cal.

Apricots, Olives, English Morello Cherries and Arizona Ash. First class trees. C. E. Moyer, Hemet, Cal.

For Sale—French Mayette and Payne Walnut grafting wood, 5c foot. Bowman-Kuhn Ranch, San Jose, Cal.

Apricot Trees For Sale—A choice lot. Carsten Truelsen, Nurseryman, Hemet, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### WANTED

Educated Holland Born American Citizen, age thirty-two, with family, desires position on ranch as manager on shares or salary. Experienced in dairying. Good dairy on shares preferred. Best of references furnished. Address Box 15, Cultivator, 112 Market Street, San Francisco.

Married Herdsman wishes position. Long experience raising hogs, feeding, fitting, exhibiting, etc., and serum and virus treatment. Understand dairying, calf raising, Babcock test and tuberculin test of cattle. A. A. Trask, Berkeley, Cal.

Position Wanted as manager of orange orchard. Best of references given. Geo. F. Whitmore, 1653 4th Ave., Los Angeles. Phone West 2368.

Wanted Work on Farm for experience in western crop raising. Plowing, irrigating. H. DeCou, Gen'l. Del'y., Los Angeles.

Wanted, nine hundred Nonpareil and three hundred Peerless Almond trees. O. J. Backus, Rosamond.

### HOGS

The Billiken Brand of Chester Whites—Entirely sold out of bred sows and gilts. Have a few open gilts of March and April farrows; also 6 boars, same age. Have 9 young tested sows to offer for late December shipments. These have each farrowed once and will be bred for a late March or early April farrow. Fall pigs, both sexes, now being weaned and will be ready for delivery during December. Good breeding stock is getting very scarce and rapidly increasing in value. If you want some of this easy feeding, melon type, get busy with your orders. C. B. Cunningham, Mills, Cal.

Grape-Wild Farm Berkshires—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion but the sire of champions. At the 1916 California state fair his daughters won all the senior sow classes including the grand champion sow. At the 1916 Oregon state fair a Grand Leader sow was junior champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

Four Good Boars ready for service is all I have left out of the twenty I had six weeks ago. These are the low down, big bone heavy kind that will just do a world of good in that pork producing herd. They are worth \$100 but \$50 is the price shipped on approval. Less than two months until the big Kings County Poland-China Sale. Bernstein sells twenty sows that are real BEAUTIES. They will please you. Bernstein's Ranch, Hanford, Kings County.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

Berkshires—First prize junior boar: first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Ferris, Cal.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles.

Big Type Durocs—Well grown out February and March pigs of either sex in any quantity. We ship only the tops and butcher the culls. F. M. Johnson, Napa, Cal.

Most Money in Duroc-Jerseys—Bred sows and weanlings, either sex all the time. Delta Farm and Live Stock Co., Colton, Cal.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

PLW Durocs—Eastern selections made by R. K. Walker in January. Peters, Lamson & Walker, Devore, San Bernardino County.

For Sale—Thoroughbred senior yearling Duroc-Jersey boar, eligible for registry, pedigree furnished. E. A. Hunter, El Toro, Cal.

Large Type Poland-Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

Rancho Rubio Durocs all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

Greenwood Farm Durocs—"Size with quality." H. C. Witherow, Palo Cedro, Shasta County, Cal.

Berkshires—Sired by Star Leader, the \$1,500 boar, ready for service. Kounias Registered Stock Farms, Modesto.

Durocs—P. & L's Defender by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

Poland-Chinas—A few good breeding boars. S. F. Williams, Orland, Cal.

### MISCELLANEOUS

Famous Hairy Peruvian Alfalfa Seed—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

Quality Trees, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

For Sale—Honey Extractor, \$15.00. Six form, non-reversible in good order. F. D. Lowe, Rt. 6, Bakersfield, Cal.

### PATENT ATTORNEYS

Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "PATENTS"

### ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implementers, 112 S. Los Angeles St., Los Angeles.

### GEES

Mammoth Geese, the kind you want Stock for sale. Chas. McNeely, Alpaugh, Cal.

### CATTLE

#### OREGON JERSEYS

Bull, Fussy Fern's Noble Boy, Junior Champion, his dam also first prize State Fair, R. of M., 488 lbs.; other bulls for sale, whose dams have made up to 1040 lbs. There is butter in these pedigrees. Write for one.

Reid Stock Farm, Second Floor Wilcox Bldg., Portland, Oregon.

Pedigreed Bull Calves, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit. tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

D. O. Lively Stock Farm, Inc., 215 Hobart Bldg., San Francisco. Breeders of Hereford cattle. A few choice heifers for sale. We buy and sell live stock on commission. Farm at Mayfield.

Venadera Jerseys, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

Veramont Stock Farm Pure Bred Herefords. Location Plumas County. Ideal for stamina and vigor. Bulls for sale. Address H. M. Barngrover, San Jose, Cal.

Registered Holsteins out of ARO Dams. Grandsons of Fletchier Maid Ormsby. 35.55 pounds average 5.31. Geo. Kounias, Modesto Farms, Modesto, Cal.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, Cal.

Ayrshires (registered)—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Ariz.

Young Holstein Bulls, bred right, grown right, priced right. Creamcup Herd. M. Holdridge, Modesto, Cal.

Sunshine Farm Jerseys—Bulls from officially tested dams for sale. L. E. Greenough, Merced.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, Cal.

Registered Jerseys—Both sexes for sale. J. R. Carhart, Fullerton, Cal.

### MACHINERY

WHY BUY NEW? SAVE HALF. Material guaranteed. It's second-hand after used few times, but not worn out. USED AND NEW GALV. AND RED.

WOOD TANKS—2000, 3000, 4000, 5000, 6000, 10,000, 25,000-gal. redwood, about half-price; new 1000-gal. galv., \$35; 2000, \$48; used 5000 galv., \$75; 10,000 galv., \$150; 17,000 galv., \$250; 25,000-gal. redwood, \$95; many others guaranteed. PUMPS, CENTRIFUGAL, rotary, single, double-acting deep well pumps. No. 2 Ames, double-acting, fine, \$145; 50 brass cylinders, all sizes; old-style pump head, 18-inch stroke, \$38; small Bulldozer, \$42.50; large size, 20-inch stroke, \$68; 24-inch Stearns pump, \$75; 2, 3, 4, 5 hor. centrifugals. No. 5 two-stage horizontal B. & J., good as new, cost \$400, our price, \$150; 25 others.

Engine snaps: 2½ h., \$39; 8 Focs, \$115; 18 Fairbanks, \$275; 34 Lambert, \$350. Many others.

WINDMILLS, SPECIALLY PRICED 8, 10, 12, 16-ft. sizes. Pump as much water as new ones, at half price; costs nothing for fuel. 900-GAL. WAGON TANK AND WAGON, \$90; 700-gal. galv. wagon tank, \$48; slip, \$5; lawn mower, \$6; low down tank pump, \$6; diaphragm pump, \$16; broadcast seeder, \$13.50; 60 ft. 10-in. riveted pipe, \$25; 4 gang Stockton plow, \$28; 8-ft. orchard disc, \$37.50; 14-in. sidehill plow, \$14; weeder, \$14; power sickle grinder, \$9; 4 gang 10-in. mouldboard, \$25; 4 gang and 5 gang Flying Dutchmen disc plows.

RANCH MACHINERY Walking plows, \$4 to \$14; two mowers, \$28, \$35; 10-ft. rake, \$22; 5-ft. Fresno, \$12 to \$14; two-wheel scrapers, bone grinders; 150 new discs for plows, half price. Harrows, cultivators, ¾-in. cable, 6c; belting; sundries. DEMMITT CO., downtown office, upstairs, 120 N. Main. Yards, 816 Yale, Los Angeles.

Gasoline Engines—the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—Western Gas Engine, latest model, like new, 12 h. p. \$450.00 on cars, terms or 5 per cent cash. Also 60 feet 5 ply rubber belt \$20.00. E. B. Moore, 337 South Los Angeles St., Los Angeles, Cal.

For Sale John Deere cultivator 9 tooth and 10 disc harrow, nearly new. Also acetylene lighting plant 35 lights. Bargain. 500 Witter St., Los Angeles.

Disk Plows—Rolled Cold. Auto trawlers built to order. J. O. Parrish, 359 South Garey Pomona, Cal. Phone 3132.

### TURKEYS

Our Geese and Turkeys Win Again—Grand Champion Sweepstake Special, for best pair of birds in show. For size vigor and quick maturity, our stock are best, East or West. Stock and eggs in season, also Collie pups. Correspondence solicited. John G. Mee, St. Helena, Cal.

Giant Bronze Turkeys and Eggs—Choice breeding stock. M. M. Reiman, Planada, Cal.

For Sale—Mammoth Bronze turkeys. The Best In The West. Geo. A. Smith & Son, Corcoran, Cal.

For Sale—Bourbon Red and White Holland Turkeys. E. A. McKinley, Ukiah, Cal. R. D.

### AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC., The Yellow Front. Established 1892 112-118 S. Los Angeles St. Los Angeles.

### POULTRY

Day Old Chix—Barred Rocks, Rhode Island Reds, Black Minorcas, Brown Leghorns, Buff and White Orpingtons. Other popular breeds a matter of correspondence. Enoch Crews, Seabright, Cal.

### POULTRY

Order Now, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh out bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

283-Egg Barron Leghorns, Wyandottes, Direct from England—200-290 egg utility or prize Leghorns, Wyandottes, Reds, Rocks, Anconas, Orpingtons, Minorcas. THOUSAND CHICKS, EGGS WEEKLY, reduced January, February delivery. Males that transmit heavy laying qualities, reasonable. Hundreds satisfied customers. One cleared \$817 on 110 hens sideline. C. Beeson, Pasadena, Cal.

Mission Hatchery Chicks—January-February, R. I. Reds, Barred and White Rocks, Black Minorcas, Anconas, Brown, Buff, White Leghorns. First class utility stock, well mated; hatched right in our large modern plant. 12,000 chicks weekly. Price and quality talk, see our free circular about them. MISSION HATCHERY, Box 17, Campbell, Cal.

Baby Chicks from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

Model Poultry Farm, White Leghorn Specialists, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

Penn's Quality Barred Plymouth Rocks are correctly bred. Blood lines that produced the WORLD'S FAIR and other noted winners BOTH in Utility and Exhibition classes. Eggs and breeding stock. Catalogue. GOLDEN RULE POULTRY FARM, St. Helena, Cal.

Our Business is trap-nesting and breeding S. C. White Leghorns for more and better eggs. Breeding males furnished with a pedigree having particular reference to egg production of their progenitors. Chix and eggs for sale. Write for circular. Enterprise Poultry Ranch, Chino, Cal.

"Finest Hatchery in the World." Baby Chicks—White Leghorns, Rhode Island Reds, Settings, 100's, 1000's. Hatched right in our \$60,000 brick and concrete hatchery from our selected heavy layers. Reasonable prices. Stock, Eggs. PEBBLESIDE POULTRY FARM, Sunnyvale, Cal.

White Leghorn Baby Chicks—Do you want some fine chicks from large good laying two year old hens? There is not going to be enough raised this spring. It is your duty to raise some food. Order now. Satisfaction guaranteed. Lyon Hatchery, ½ mile east of Harbor Boulevard, Palm Ave., Gardena.

Spring Chicks—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

Baby Chicks—We start in January to hatch those sturdy youngsters, like we had last season. We will have lots of them too, but please order early. White, Brown and Buff Leghorns, R. I. Reds, Barred Rocks, and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

Barred Rock Chicks \$15 per 100; Rhode Island Reds, \$14 per 100; hatching every week. Can supply most any number. Send for free 66 page catalogue. Pioneer Hatchery, 815 S. Los Angeles Street, Los Angeles.

Baby Chicks—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

Hatching Eggs—S. C. White Leghorns. Bred-to-lay hoganized birds from Pine Tree Strain. Fertility guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

Petaluma Hatchery—Can ship day old chicks to points reached in three days. Why not have the best. We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

Buff Orpingtons, Buff Leghorns, Bourbon Red Turkeys—First prize winners at the best shows for the past four seasons. The Ferris Ranch, S. Reservoir, Pomona, Cal.

Am Booking Orders for chicks from Barred Rocks, R. I. Red and White Leghorn stock for spring delivery. Send for circular. Madera Hatchery, Madera, Cal.

For Sale—Rhode Island Whites, 2 dozen pullets in lots or entire lot, also a few cockerels. C. A. Pears, Box 233, Tulare, Cal.

Baby Chicks (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorcas, and Buff Orpington chicks with the Stevenson Hatchery, Watsonville, Cal.

Baby Chicks—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

"Eastman's-Bred-To-Lay" Hoganized, Trapnested, Barred Plymouth Rocks, JANUARY CHICKS. Eggs. Fairmead Poultry Farm, Fairmead, Cal.

Official 200 Egg White Leghorns in Washington Contest. Charles Hudson, Escondido, Cal.



## FARM LANDS FOR SALE

**Will Take Other Property.** preferably clear and under \$5000 on portions my ranch north of this city, in silt, artesian basin of Madera County. It is generally recognized as some of the finest alfalfa, fruit and general farming land in San Joaquin Valley. Convenient to schools, modern town, creameries, cheese factory, state highway. Southern Pacific, etc. Neighbors are high type American farmers, making good livings on moderate sized acreage. I am no agent and will try and work in with your conditions. Arthur Vernon, Fresno, Cal.

**Big Cut in Price of Farm Land** in the best agricultural part of Snohomish County. \$25 to \$35 per acre; 10 yearly payments; railways, mills, factories, plenty of labor. The best proposition on the market for the man who wants a farm. Send for illustrated literature. Brownell Land Co., 904 Third Ave., Seattle, Wash.

**For Sale—80 acres** in Turlock Irrigation district, west of Ceres, all in alfalfa except corrals, strip checked and a good stand; 6 room house, mill and tank, fenced. Rented one year \$30 per acre. Price \$265.00 per acre, half cash. This is first class soil and one of the best ranches in the valley. Is paying 10 per cent net on the investment. Owner must sell on account of other business engagements. Lynn H. Colburn, Turlock, Cal.

**Artesian Water!**—More than you can use on this 40 acres of good level land. 35 acres checked, fenced, rabbit tight, fair house. \$100.00 per acre. Six miles from town and highway. Deal with owner. Box 29, Buttonwillow, Kern Co., Cal.

**For Sale, 160 acres \$3500—**Make excellent hog, dairy, fruit or almond ranch. 60 acres level bottom, abundance of rain. If you have the cash, write. NO traders. Address owner, Carl W. Dewlaney, Santa Margarita, Cal.

**Oregon, California Government Lands—**Booklet Free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

**Free List of Monterey County bargains.** Bohannon Realty Co., King City, Cal.

## SEEDS AND PLANTS

**Recleaned Alfalfa Seed** of known purity and vitality. Grown under various soil and climatic conditions. Write us of your conditions and let us help you in selecting the proper kind of seed to plant for largest crops. Order direct and save middlemen's profit. Desk B. BOMBERGER SEED CO., Modesto, Cal.

**ORDER YOUR SEEDS NOW**—If you are going to need any seed for next season now is the time to render your order. It may be impossible for you to buy what you need later. V. A. Peterson Alfalfa Seed Co., Arbuckle, Cal.

**ALFALFA SEED OUR SPECIALTY**—Alfalfa Seed—Common variety, Hairy and Smooth Peruvian. Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

**Strawberry Plants—**Thoroughbred strawberry plants. Early Ozarks, Gold Dollar, Wm. Belt, Goodell. \$2.50 per thousand. Superb Everbearing \$10.00 per thousand. Mr. J. Christiansen, R. F. D. 2, Canby, Oregon.

**Rhubarb Plants—**Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00. Wagner's Giant Crimson Winter \$3.00. 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

**Strawberry Plants—**Gold Dollars, Magoons, Kelloggs Prize, Marshalls, Brandywines, and Mitchell's Everbearing. Prima Vista Gardens, R. R. 4, Arlington Sta., Riverside, Cal.

**Strawberry Plants—**Senator Dunlap, Kellogg's Prize, Raspberry plants; also Mammoth and Himalaya Blackberries. E. N. Kelly & Co., Arroyo Grande, Cal.

**Seed Potatoes—**Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Rhubarb—**\$1127.00 from one acre. "A crop every month of the year. Write to me and I will tell you how you can do as well. J. M. Stone, Lodi, Cal., Route 4.

**Strawberry Plants—**New Beds, Brandywine, Klondyke, Gold Dollar, \$3.00 per 1000. Everbearing, \$1.00 per 100. J. W. Vinacke, Canby, Oregon.

**5000 Yellow Calla Bulbs—**Elliottiana, 5000 Asparagus roots. William Richard, Santa Cruz, Cal.

**Mr. Alfalfa Grower—**If you want good seed at the lowest price, write me for samples and prices. Smooth Peruvian a specialty. O. C. Nordahl, Bard, Cal.

**R\*O\*S\*E\*S** 50 cents per dozen. Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

**New Crop Alfalfa Seed** now ready. Not the lowest in price, but high in quality. Leo Turner, Yuma, Arizona.

**Strawberry Plants—**Everbearing Northern grown, strongly rooted. Price list free. F. I. Moffett, Ellensburg, Wash.

## LIVE STOCK

**Butte City Shorthorns, Shropshires, Berkshires and Ponies.** Stock of all ages for sale. Can supply one or a carload. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal.

**Registered Shires—**Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

**For Sale—**Eleven weanling mules. Chas. Hubbard, Riverdale, Cal.

## LUMBER

**Lumber—Sash—Doors—Plumbing—**Supplies—Building materials of all kinds. New and second hand. "A" R. W. shingles 55 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

## AUTOMOBILE STORAGE BATTERIES

**Titian Batteries for Service.** Get our prices before buying or having an old battery repaired. Call or write. Olive Street Electrical Co., 910 South Olive St., Los Angeles, Cal.

## Household Department

## MY CABIN

Written for California Cultivator  
By Ida M. Blake

I'm so tired of the city,  
Its noisy roar and din,  
And I think of my little cabin  
And its welcome, "Tumble Inn."

It's just a mountain cabin  
Of logs and stones unhewn,  
But it's near the heart of nature,  
Where the world is e'er in tune.

It nestles on the hillside,  
Beneath the big oak trees,  
Where all is calm and peaceful,  
And you hear the hum of bees.

You can hear the merry brooklet  
As it flows o'er rock and rill,  
See it glisten in the sunlight  
That comes peeping o'er the hill.

Where birds are ever singing  
Their happy songs of cheer,  
For life is always joyous,  
They worry not, nor fear.

Hear the saucy squirrels chatter,  
As they hop from bough to bough,  
"Oh come and live in the mountains,  
And let Mother Earth tell us how."

## THE PROVIDENTIAL WELL

Written for California Cultivator  
By Caroline M. True



S Mrs. Leighton straightened up from lighting a great pile of sage, she was surprised to find the sun almost down.

Looking regretfully at the unburned rows ahead, she called the children who were raking up sage farther down the field.

"O, why can't we finish, Mama, you know Papa has to plow the ditches tomorrow?"

"Well, here he comes, we'll ask him if he wants it finished bad enough to have a late supper."

Mr. Leighton came slowly across the field, driving the big gray team hitched grotesquely to each end of a long railroad iron which left in its wake a broad swath of torn up sage brush. As he came to where his wife and children stood waiting, he stopped, pushed back his hat and wiped the perspiration from his brow.

"You and the Kids are making a fine showing," he said, looking appreciatively over the wide clear strip behind them.

"Harry says you wanted this finished tonight so you could plow the irrigation ditches tomorrow. Shall I let the supper wait while the children and I finish it?"

"Not by a long sight, I am as hungry as a dog right now. We will make some fireworks out of it tonight."

"O, goody," said little Marjorie, "I love to see the sparks fly."

"All right, you and Harry and Jim dust down there and finish the stacking while Mamma gets supper and I put up the team and do the chores, and right after supper we'll all come out and make the sparks fly."

With a whoop, they scampered to their unfinished task.

"I'll tell you what, Ethel, this level field looks mighty good to me."

"O, I know the land is all right, but what scares me to death is the fear that the well borers won't strike water."

Mr. Leighton threw back his head and laughed heartily.

"You must think we are awful mean, for Providence to discriminate against us that way."

"Any one that digs for water in this country, shouldn't blame the Lord if he don't find it," she retorted.

"But, My Dear," he expostulated, "when they have found water on both sides of us, how can we help striking it?"

"Of course I really think we will; if I didn't I should simply die right

now; there's too many plans and hopes bound up in this place, I can't tolerate the idea of any thing interfering with them."

"O course not, but you shouldn't worry so much. You remember how long it took to persuade you to come to California after the earthquake. If that cyclone hadn't have taken the roof off our house last summer I don't know as we would be here yet."

His wife shuddered.

"Don't talk about that; it scares me yet. Any way, we don't have cyclones here, but I must hurry or supper will be late."

The next day about the middle of the forenoon, little Marjorie came running in, exclaiming breathlessly:

"There is a big dust coming up our road." Our road was a long wandering cut-off across the open sage, which no one used unless coming to the ranch, so a dust on it proclaimed visitors as a rule, though some times only a whirlwind. But today the dust grew to a thick cloud and finally resolved itself into a tractor, pulling several heavy wagons laden with strange machinery, a very tall derrick and a camping outfit. Marjorie stared in round eyed wonder, and Mrs. Leighton was puzzled for a moment, but suddenly realizing what it must be, exclaimed: "It's the well rig at last."

Marjorie sped away to tell the boys who were grubbing sage at the other end of the ranch, while her mother tried to resume her work, but found she could keep neither her eyes nor her interest off the setting up of the well rig, which the children were watching with all their eyes and with which her husband was helping. It looked dangerous, as they lifted the great derrick and guyed it with large cables. She hoped Harvey would be careful and warned the children not to go too close.

At noon Mr. Leighton came in jovial and elated:

"Well, they are ready to start after dinner, and Stine says they will have the surface well down by night if everything goes well."

"Can he tell from that whether the deep well will flow?" asked his wife.

"He says he can make a pretty good guess, but of course can't be certain until he sees the water running."

All through the afternoon the great drill bit into the soft earth, and, down, down sank the rods. By the time water sand began to appear on the dump the whole family were watching eagerly.

"Well, Folks, we've struck it," he said, as he dumped out the shining sand, "but it is a little deep, and you mustn't be surprised if your well doesn't flow."

It had happened. The well wasn't going to flow, and they didn't have enough money to put in a pumping plant. Mr. Leighton had looked that up some time ago. The parents exchanged despairing glances, and the expectant faces of the children fell in sympathy. The mother tried to rally her sinking spirits by remarking:

"At least, we know now that there is water here."

"There has never been any doubt of that," said the well borer, "and if the deeper strata are strong, I may get you a flowing well yet. But you are on the border line here, and it is very uncertain; though you have much better land than if you were in the heavy flowing district."

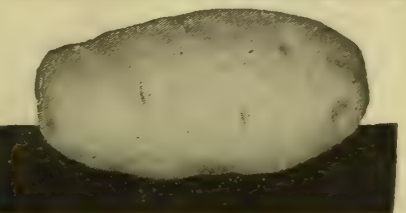
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8637—Children's Dress. Cut in sizes 2, 4, 6 and 8 years. The lower part of the dress is gathered to the yoke at front and back, and a pretty lace-edged collar finishes the neck.

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8616—Misses' and Small Women's Box Plaited Skirt. Cut in sizes 16, 18 and 20 years. This is one of the new shallow plaited models which has box plaits.

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"That's some comfort," said Mr. Leighton, "and the fact that it does not flow wouldn't bother me a bit if I had the money for a pumping plant."

The succeeding days to the anxious family resembled those spent by the bedside of a patient, awaiting the crisis. They harassed the well borer with questions as to his progress until his patience was on the breaking point.

"I tell you, Folks, you never know what you are going to run on to underground; no two wells are alike."

At the end of the week they struck a very strong stratum, and the hopes of the watchers rose high; they could hardly wait until a clay formation would permit them to anchor the

said, suddenly calm now that she knew the worst, "Papa will find a way to get it on the land. The main thing is to get a good well and we have that."

When Mr. Leighton came in to breakfast he announced the water at ten feet. The family ate breakfast in a very unusual silence. Even the spirits of the children failed to rise. At its close Mr. Leighton rose slowly and stood uncertainly by the table, considering.

"My plans are so upset I hardly know what to do," he said finally.

"I believe the best thing to do is just to finish our clearing and get the ditches ready, as though everything was all right, and we can think it over,

"It is so warm for the time of year, I should be almost afraid of a cyclone if we were in the East," said Mrs. Leighton, as they went in the house to prepare for bed.

Several hours later Mrs. Leighton awoke with a peculiar impression of something impending. She could not tell what had disturbed her, but lay listening anxiously as though she expected to hear something. Suddenly every window in the house began to rattle, and the bed rocked back and forth. She sprang out of bed and rushed for Marjorie's bed, screaming:

"Harvey, get the boys, quick, there is a cyclone coming." Mr. Leighton sat up, startled and half dazed, then rushed to the window and looked out at the calm and peaceful night.

"Why Ethel, you must have had a nightmare, there isn't a breath of wind blowing."

"A nightmare could not rattle the windows and shake the bed," she replied.

"That describes an earthquake," he said. She sat down suddenly upon the bed and gasped:

"Of course that was what it was, why didn't I think of that at first?"

"Your logical mind had never experienced one," he laughed.

"If that is all there is to it, it isn't much of an experience," she said, "but I am sure I shan't sleep any more tonight for fear of another one."

"Nonsense, such slight shocks don't amount to anything, and, even if we had a hard one, there's no danger in these low California houses."

In spite of this assurance, it was almost morning before she fell asleep, and immediately afterwards she was awakened by her husband, shaking her excitedly.

"What is it," she cried, "is it another one?"

"No, but just come and see what that one did!"

Seizing a dressing gown, she hastened after him, her mind filled with dire forebodings. Once outside, she stood transfixed with wonder, for before her eyes, every drop shining in the sun, arose a great column of water. The well was flowing at last.

As if fascinated, the whole family moved nearer and nearer until the spray sprinkled their faces. Silently they looked upon the miracle with mingled feelings of awe and reverence. Suddenly Harry darted toward a little pool and held up something shining in his hand.

"A fish, Papa, just look, a fish."

"It can't be," said his mother.

"There are no fish in wells."

"But it is," said his father, who was examining it, "and a blind one at that. I'll tell you what has happened. The earthquake has connected us with an underground lake."

"I am afraid we are all crazy, and this isn't really happening; such things never happen outside of Rider Haggard's novels," said his wife.

"Let's stay crazy then. Harry, get your pony and hurry over and tell Mr. Stine to come and cap this well before all the fish get away."

### SAMMIES

History records that American troops were first called Sammies in France, and history has put her foot in it, not for the first time. An eye-and-ear witness of the landing now reports that what the French crowd shouted was not "Sammee!" but "Nos amis!" — pronounced "nose ammee," and by interpretation, "our friends." Some bystander caught only part of the outcry. Hence "Sammee." Hence in its turn "Sammy."

Our troops are not pleased with

## What Food Saving Involves

Sign the pledge and enroll as a member of the United States Food Administration, and you will be asked to do these things:

**Eat plenty, but wisely, and without waste.**

**Buy less; cook no more than necessary; serve smaller portions.**



**Preach and practice the "gospel of the clean plate."**

**Use local and seasonal supplies;— watch out for waste.**

**Whenever possible use poultry, game and sea foods in place of beef, mutton and pork.**

**Use potatoes and other vegetables freely.**

**Save wheat by substituting, in part, corn meal and other cereal flours for wheat flour.**

**Save butter and lard. Use butter on the table, but substitute vegetable oils for cooking.**

**Save sugar. Use less candy and sweet drinks and less sugar in tea and coffee.**

"This is a duty of necessity, humanity and honor. As a free people we have elected to discharge this duty, not under autocratic decree, but without other restraint than the guidance of individual conscience."

—Herbert Hoover.

well. This was reached at 300 feet, and the boring was finished.

The next day at dinner time Mrs. Leighton remarked:

"Why don't the wellborers stop for noon? They seem to be pounding away as hard as ever."

"He told me that he wouldn't dare stop until the casing was all in for fear of losing the well."

"What new bugbear is that? At first we don't know whether there is any water; then they're sure it won't flow, and now they talk about losing it all together?"

"I don't care," blurted Harry, "if they go and lose it they won't get no pay, for they said they would give you a whole well."

Mr. Leighton chuckled at the consternation his words called up:

"I don't believe we need worry," he said, "they don't mean to lose it. He said they would probably work most of the night."

There was only a pink glow in the east when Mrs. Leighton came to the kitchen to prepare breakfast, but her husband and sons had already departed for the well rig, over which hung an ominous silence as though it was worn out and had given up. She hardly had the fire going before the boys rushed in, almost wailing:

"It didn't flow! It didn't flow! Mamma."

"Don't worry about it, Boys," she

and may be something will turn up, meanwhile," said his wife, cheerfully.

"You are a regular old Micawber," laughed her husband.

"Just remember something good 'turned up' for dear old Micawber in the end," she returned.

Several weeks had elapsed when one evening the family gathered on the porch to enjoy the beautiful afterglow of mid-October. Mrs. Leighton leaned back in her big willow rocker and looked forlornly across the dry, sandy stretch of level soil that formed her front yard:

"I did so want to get my lawn started in the spring," she sighed.

"Yes, and I meant to get the south 40 all ready for alfalfa," added her husband in the same tenor.

"And I was going to have a fish pond in the reservoir," said Harry.

They all laughed at that and called for Jim's and Marjorie's plans. Jim owned up that he wanted to learn to swim in the reservoir, and Marjorie had the promise of wading in the ditches.

"You see you worried about the wrong thing before we came out here; instead of earthquakes it should have been water."

"I have a logical mind and could not worry without data; the papers were full of the San Francisco earthquake."

They sat till far into the evening, discussing ways and means and enjoying the soft, balmy air.



the sobriquet. They protest. We fore-saw their indignation and printed several weeks ago some paragraphs entitled "Nix on Sammy." But the sobriquet sticks. We doubt if "Samson" proposed as a substitute, will manage to supplant it, nor do we quite see why it should. Already the nickname has become glorious. It is the dignity of an honorific title. At the same time it has the endearing jollity of a slap on the back.

Bear up Sammy! T. Atkins once hated being a Tommy. Look at him now. There was a blunder at our christening. Admitted. But we guess that if "Sammy" ever failed to reflect credit on you, you are now reflecting abundant credit on "Sammy."—Chicago Tribune.

HOW TO REMOVE STAINS

**U**NCLE Sam says that if the housewife knows the cause of a stain she can find a commonsense way to get rid of it by following the directions given in Farmers Bulletin 861. Methods are outlined for the removal of practically any kind of stain, from "acids" to "whitewash." This bulletin will be sent free to anyone who writes Department of Agriculture, Washington, D. C., requesting it.

One of the first requisites in removing stains, says the bulletin, is to know the kind of fabric which is spotted and, if possible, the nature of the stain. Some stain removers which will give admirable results on cotton or linen may, if applied to woolen or silk, remove pieces of the fabric as well as the stain. Likewise, stain removers which are entirely satisfactory for cleaning silk or woolen materials cannot always be used for removing stains from vegetable fibres, such as cotton or linen. Similarly, treatment which will remove some stains immediately will cause those of a different nature to take firmer hold on the fabric.

The second cardinal principle in spot removal is to work while the stain is fresh. Cold or lukewarm water is usually the housewife's first best bet if the nature of the stain is not known and if the fabric is not injured by water. Hot water should not be used until it is determined that the staining material is such that it will not be "set" by heat. Stains from meat juice, blood, egg, milk, and other materials containing protein are set by hot water.

THE RIGHT WAY TO COOK DRIED FRUITS

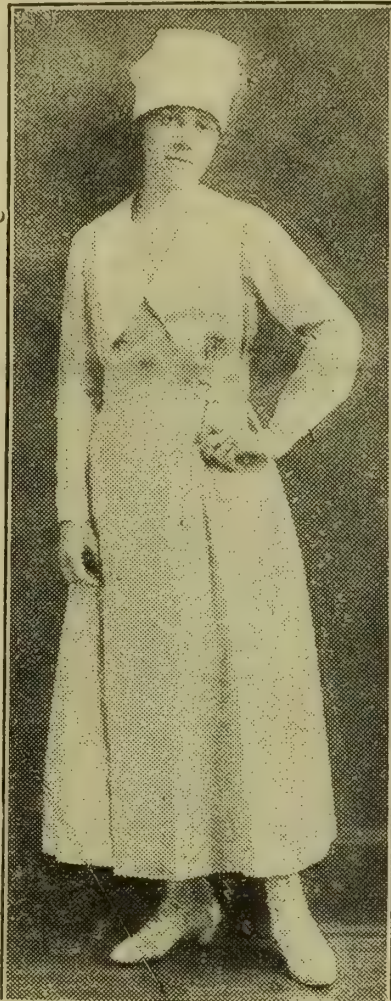
As commonly cooked dried fruits are insipid. This is due to improper cooking. When cooked properly, the natural flavors are developed and, in the case of some fruits—prunes and figs for example—no sugar should be added. The fruit should be washed in several waters, then soaked in an excess of water for 24 hours. It may appear tender at the end of this soaking period, but, as has been said, it must be cooked to give flavor. A short cooking will not do this. The best method for cooking is slow stewing, although baking will also develop the flavor. It can be cooked slowly in the furnace or put on the back of the stove when the housewife is baking or washing. If sugar is to be added, as will be necessary with apples, peaches or apricots, it should be added just a few minutes before the fruit is removed from the stove. This helps to give the fruit a fresh flavor.

There are a great variety of dishes that may be prepared from the dried fruits. There is no excuse for them

always appearing as a sauce. Short-cakes using the different fruits may be varied by different sauces, as hard, marshmallow or custard sauce. Cooked dried fruits will be found to be attractive and palatable in almost any gelatine desert. They are excellent for cobbles and fruit puddings, also. —Magdalene Hahn, Colorado Agricultural College.

VALUE OF SKIM MILK

While skim milk is good for stock, the fact remains that its highest ef-



Official uniform of the Food Conservation section of Food Administration. Pattern may be obtained by mailing ten cents to Food Administration, Washington, D. C.

iciency can not be had through turning it into meat. Skim milk is used most economically in animal production when fed to hogs, yet it takes 20 pounds when fed alone to produce one pound of pork. The same quantity will make three pounds of cottage cheese. In addition, cottage cheese contains 1½ times as much protein and one-third as much energy as pork, so that the skim milk in the cheese form gives quite as much energy and 4½ times as much protein as it would if converted into ham or bacon.

Even at the highest prices paid for hogs, skim milk fed to them is worth not more than one cent a pound. Yet one cent a pound, or approximately one cent a pint, is very cheap for any human food, and particularly for a food so high in nutritive value as skim milk.

FACTS ABOUT FOOD CONSERVATION

In Europe fines up to \$500 are levied on persons who throw away stale bread.

The success of food conservation in American homes depends entirely upon voluntary action.

Our Allies are dependent on us for food because the route to North America is the shortest and the safest.

Scarcity of ocean-going ships makes it important for us to export foods of concentrated value, such as meats, sugar, wheat, condensed milk and fats.

The success of the Allies will depend largely on winning the war against food waste in this country. It is now being waged in 22,000,000 American kitchens. Are you winning yours?

The people of the United States consume double the amount of fatty foods needed for proper nutrition. Our European Allies are suffering privations from lack of sufficient fat in their diet.

CRYSTALLIZED FIGS

White figs are best for this. They should be well washed and dried. Make a very thick syrup. Boil figs in this for one hour three days in succession, removing them at the end of hour to platter. Put them in the sun, bringing them in at night. After the three days' boiling put in the sun each clear day until they are perfectly dry. Then pack in tin boxes lined with oiled paper.—E. A. Tomblor in Sperry Cook Book.

NEW WAY TO DARN STOCKINGS.

A new way to darn the knees of children's winter stockings is to run the threads from side to side of the hole, then begin at the top and chain-stitch down, catching the stitch in each crossthread. When the hole is mended it will look like the knitted part of the stocking.

THE LATEST

After showing stacks of table cloths, the clerk brought out another lot. "Now these are the newest patterns," he said. "You will notice that the edge runs entirely around the border and the center is in the middle."

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Cauliflower, doz. .... 75@80  
Celery, cr. .... 3.50@3.75  
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Egg Plant, lb. .... 7@8  
Horseradish, lb. .... 15  
Lettuce, doz. .... 30  
Leeks ..... 30  
Mint ..... 40  
Onions, green, doz. .... 25  
Okra, lb. .... 13@14  
Peas, lb., Telephone ..... 14  
Peppers, Chili, lb., 8; Bell ..... 12  
Parsnips, doz. .... 40  
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(25-lb. bx., faced, 50s, ½c less.).  
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apricots, ch., 18; extra ch., 18½; fy., 19;  
pears, 12½; peaches, ch., 12; fy., 12½;  
peeled, 15; citron, 30 lb.; lemon peel, 25;  
orange peel, 25; prunes, 20-30s, 16½; 30-  
40s, 12½; 40-50s, 11; 50-60s, 10; 60-70s,  
9½; 70-80s, 9-10-100s, 8.  
Figs—Bulk, 25 lb. bx., blk. \$2.75, wh.  
\$2.75; Calmyrna, 10 lb. bx., \$2.25.

## NUTS

Almonds—Not growers' prices but prices  
of wholesaler to retailer.  
I. X. L. .... 23½  
N. P. U. .... 22½  
Hickory Nuts, lb. .... 10  
Peanuts, raw ..... 15  
Pecans, lb. .... 19  
Walnuts—Cal. Walnut Growers' Associ-  
ation named prices Oct. 1:

No. 1 Soft Shell, lb. .... 20  
No. 2 Soft Shell, lb. .... 16  
Budded, Diamond Brand ..... 24  
Budded, Standard Brand, (same size

as No. 1 Soft Shell) ..... 21  
Prices delivered in East 1½c higher.

## HONEY

Prices of wholesaler to retailer:

Extr. White, lb. .... 12@14  
W. W. lb. .... 13@15  
Comb, case, W. .... 4.00@4.50  
W. W. case ..... 4.80@5.00

## RICE

Wholesale quotations:

Cal. .... 7.50  
Broken ..... 6.60@6.00

## BEANS

These are prices made by wholesaler to

retailer.  
Lady Washington ..... 13.00@13.50  
Limas ..... 13.00@13.50  
Pinks ..... 8.50  
Manchurian Reds ..... 3.25  
Baby Mex. .... 9.00  
Garbanzos ..... 10.00  
Small White ..... 13.00@13.50  
Blackeyes ..... 10.00  
Tepary ..... 9.00@10.00  
Lentils ..... 25.00

## HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oat ..... 25.00@27.00  
Volunteer Oat ..... 18.00@20.00  
Wheat ..... 20.00@23.00  
Barley ..... 23.00@26.00  
Alfalfa ..... 22.00@25.00

The Alfalfa Growers Association of  
Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where  
the \$1.50 freight rate applies, and \$29.00  
f. o. b. where the \$2.50 freight rate ap-  
plies.

## GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal ..... 1.95  
Alfalfa Molasses ..... 2.00  
Barley, Rolled ..... 3.20  
Barley, Recleaned, Whole ..... 3.25  
Barley, Hulls ..... 3.80  
Beet Pulp ..... 2.00  
Bran, Heavy ..... 2.25  
Cocoanut Meal ..... 2.50  
Cottonseed Meal ..... 3.40  
Corn, Yellow ..... 4.45  
Corn, White ..... 4.55  
Corn, Cracked ..... 4.50  
Corn, Feed Meal ..... 4.55  
Corn, Egyptian ..... 3.60  
Middlings ..... 3.25  
Milo ..... 3.15  
Oat Chop ..... 1.90  
Oats, White ..... 3.30  
Oats, Roiled White ..... 3.35  
Oats, Hulls ..... 4.75  
Oats, Roiled Chicken Groats ..... 4.85  
Ollcake Meal ..... 3.65  
Wheat, No. 1 ..... 4.00@4.05  
Wheat, Cracked, No. 1 ..... 4.40  
Red Millet ..... 4.65@4.75  
Rye ..... 4.00  
Blood Meal ..... 5.00@5.10  
Bone, Green ..... 2.75@2.85  
Bone, Dry ..... 2.95@3.05  
Charcoal, 50-lb. sk. .... 3.00  
Clam Shell ..... 70@80  
Grit, Granite ..... 75@85  
Oyster Shell ..... 1.45  
Sunflower Seed ..... 5.25  
Soya Bean Meal ..... 3.60  
Scratch Feed ..... 3.80@3.90  
Gritless ..... 3.90@4.00  
Rice Bran, ton ..... 40.00  
Middlings, ton ..... 45.00  
Rice Polish, ton ..... 49.00

## San Francisco Markets

San Francisco, Dec. 31, 1917.

## BUTTER

Dairy Exchange quotations, lb.:  
Fresh extras ..... 49  
Prime firsts ..... 47

## CHEESE

Dairy Exchange quotations:  
Cal Flats, 22½@23. Y. Am. .... 25  
Ore. Young Am. .... 24  
Jack cheese, full cream ..... 24@25  
Half skim ..... 18

## EGGS

Extra ..... 53  
Selected Pullets ..... 46

## POULTRY

We quote from producers, lb.:  
Hens, large, 26@27; Leghorns ..... 25@26  
Small Colored ..... 25@26  
Broilers, 1-1½ lbs., 40, 1¼-1½, 35@40;  
1½-2, 30@33; 2-3, 28@30.  
Capons, lb. .... 38@40  
Roosters ..... 26@27  
Squabs, doz. .... 4.00@5.00  
Ducks ..... 17@23  
Geese ..... 19@20  
Belgian Hares, live, lb. .... 18@20  
Turkeys ..... 32@36

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾c  
more.  
Steers, lb. 8¾@10; undesirable, 6@8;  
cows and heifers, 7@8¾; undesirable, 4  
@6; calves 7@9½.  
Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 14½; 140 to 175 lbs., 15; 175 to 300  
lbs., 15½.  
Sheep—Wethers, 12@12½; ewes, 9½@  
10½; lambs, 12½@16.

## POTATOES

Wholesale selling prices at wharf:  
Ore., Wash. Burbanks ..... 1.75@2.00  
Salinas Burbanks, cwt ..... 2.75@3.00  
River ..... 1.50@1.90  
Sweets, cwt. .... 3.90@4.00

## ONIONS

Wholesale selling price on wharf:  
Australian Brown, cwt. .... 1.75@2.00  
Bermudas ..... 2.00@2.50  
Garlic, lb., new ..... 4@5

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 40@75  
Beets, sk. .... 1.25@1.50  
Beans, string, lb., 10@12½; Limas ..... 7@8  
Brussel Sprouts, lb. .... 4@5

Carrots, sk. .... 90@100  
Celery, cr. .... 1.75@2.75  
Cucumbers, Hothouse, bx. .... 2.00@2.50  
Egg Plant, lb. .... 6@8  
Lettuce, cr. .... 1.40@2.25  
Peas, lb. .... 6@19  
Parsnips, sk. .... 1.00@1.25  
Peppers, Bell, lb., 6@8; Chili ..... 4@6  
Pumpkins, sk. .... 85@100  
Rhubarb, bx. .... 1.50@2.00  
Squash—Marrowfat, sk. .... 75@85  
Cream, lug ..... 1.00@1.25  
Hubbard, sk. .... 1.00@1.15  
Tomatoes, lug ..... 1.00@2.00  
Southern, cr. .... 1.00@1.25  
Turnip, sk. .... 90@100

## FRESH FRUITS

Strawberries, ch. .... 6.00@9.00  
Pears—Winter Nellis bx., 1.25@2.00;  
winter pears, 1.00@1.50.  
Apples—Bellflower, 1.10@1.50; Spitzen-  
burg, 1.00@1.85; Red Pearmain, 70@1.05;  
W. W. Pearmain, 1.10@1.50; Newton  
Pippins, 1.00@1.50.  
Avocados, doz. .... 2.00@3.50  
Citrus Fruits—Lemons, bx., according  
to size, fy., 4.00@6.50; ch., 3.50@5.50;  
lemonettes, 1.25@2.25; grapefruit, 2.50@  
3.00; ch., 2.00@2.50. Tulare seedless  
limes, small bx., 1.25@1.50. Oranges, bx.:  
Navels, ch. to fy., 4.00@5.00; culis, 2.00@  
2.50.  
Pomegranates—One-half orange bx.,  
1.75@2.00.  
Persimmons—Bx.: 1.25@1.50.  
Olives, ton, 160.00@200.00.

## DRIED FRUITS

Not producers' prices but prices of  
wholesaler to retailer.  
Peaches—Unpeeled, lb. standard, 9½;  
choice, 9½; extra choice, 10; fancy, 11.  
Figs—in 50-pound boxes, per pound.  
White Adriatic, standard, 8½; choice,  
9½; extra choice, 10½; fancy, 11½; Cal-  
myrna, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 18½;  
ch., 15; extra ch., 15½; fy., 16½; extra fy.,  
17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—60s to 90s, 6½ basis; 50s to  
60s, ½c premium; 40s to 50s, 1½ prem  
ium.  
Apples—in 50-pound boxes, lb.: Fancy  
14½; extra ch., 14; ch., 13½.  
Pears—Bulk basis, lb.: Fancy, 11½;  
extra ch., 9½; ch., 8½; standard, 6½.  
Raisins—Cases: Sun. Maid, seeded, 16-  
oz. cartons, \$4.20 for 48s and \$3.15 for 36s;  
oz. 45 to cs. \$5.25; ch. 16-oz. cartons, \$3.00  
for 36s; do, 12-oz. cartons, 45 to cs. \$3.10.  
In bulk: Sun. Maid, 1.75; fy., 1.90; ch.,  
1.75.  
Sulphur-bleached Thompsons, extra fy.,  
\$5.37½; fy., \$5.12½; ch., \$4.87½; soda-  
bleached, \$4.75.  
Loose: One-crown, \$4.15; 2-crown,  
\$3.40; 3-crown, \$3.65; 4-crown, \$3.20.

## NUTS

Almonds—Cal. Almond Growers' Exch.  
Gross prices: Nonpareils, 21½; I. X. L.,  
19½; Ne Plus, 18½; Drakes, 16; hard  
shell, 11½.  
Chestnuts, Cal. lb. .... 10@20  
Peanuts ..... 11@12½  
Pecans, lb. .... 19@20  
Pine Nuts ..... 19@20

## HONEY

Comb, W. W., lb., 15@18; Amber .12@15  
Extr. W. W. Alfalfa ..... 14@15  
W. W. Sage ..... 16  
Lt. A. Alfalfa, 14; do Sage ..... 15  
Amber Sage ..... 11½@13½  
Beeswax, lb. .... 38@40

## BEANS

Jobbers' prices, cwt., recleaned:  
Limas ..... 12.60@12.75  
Bayous ..... 8.75@9.00  
Small Whites ..... 12.00@12.25  
Mexican Reds ..... 8.50@8.75  
Large Whites ..... 11.25@11.50  
Pinks ..... 7.40@7.60  
Blackeyes ..... 8.00@8.25  
Red Kidney ..... 13.00  
Cranberry ..... 11.75@12.00

## HOPS

Per lb.: California crop of 1917, 28@  
33; on contracts, spot, 1916 crop, 18@22;  
old, 8@15.

## RICE

California rice, new crop, cleaned, 100  
pound head rice, 6.45@6.50; brewers, 5.25;  
screenings, 5.37½.  
Rough rice, 100 lbs., 3.50@3.60 to grow-  
ers at shipping points.

## HAY

Under date of December 29, Scott,  
Magner & Miller says:  
Arrivals of hay for the week were 1356  
tons.

There are no changes to note either in  
the market or the railroad situation. It  
is still most difficult to obtain a sufficient  
amount of cars at the various shipping  
points to fill orders.

There have been no government orders  
placed in California other than those  
noted in our last report. At the same  
time the news of the government order-  
ing a full and complete division of 40,000  
men to Camp Fremont will probably have  
its effect on the hay situation as without  
doubt the usual number of animals to ac-  
commodate this number of troops will  
naturally have to be there also.

The local situation is somewhat ser-  
ious. Even though we have had a  
shower amounting to as much as an inch  
of rain in some localities north of San  
Francisco, we have had very little mois-  
ture to speak of south of San Francisco,  
and stockmen are facing a most serious  
situation as there is practically no pas-  
ture and baled hay is at such figures that  
they cannot afford to buy it to feed their  
stock. The food administration in  
Washington is considering the necessity  
of placing restrictions on the hay trade  
similar to those found necessary in other  
lines. In confirmation of this a dele-  
gation of hay men were requested to meet  
the food administration in Washington  
some ten days ago to formulate rules to  
cover the hay trade. The result of this  
meeting has not been announced as yet  
but may be expected shortly. This may  
have a decided bearing upon prices later  
on and especially for the new season.

Fancy Wheat Hay  
(light 5 wire bale) ..... 29.00@30.00  
No. 1 Wheat or Wheat and

Oat Hay ..... 26.00@28.00  
No. 2 Wheat or Wheat and  
Oat Hay ..... 23.00@25.00  
Choice Tame Oat Hay ..... 27.00@27.50  
Other Tame Oat Hay ..... 23.00@25.00  
Wild Oat Hay ..... 23.00@25.00  
Barley Hay ..... 24.00@26.00  
Alfalfa ..... 24.00@27.00  
Stock Hay ..... 20.00@22.00  
No. 1 Barley Straw ..... 60@90

## GRAIN

Grain Exchange prices, cwt.  
Corn, Cal. Yellow, cwt. .... 3.30@3.40  
W. Egyptian, 3.20@3.25; Brown 3.05@3.10  
Barley, Feed & Brewing, cwt. 2.85@2.87½  
Milo ..... 3.05@3.20  
Oats, Red Seed ..... 3.00@3.25  
Feed ..... 2.77½@2.85  
New Black ..... 3.40@3.60  
Wheat—Government prices: Common  
white hard, base price is \$3.50 per cental,  
or \$2.10 per bushel of 60 pounds deliver-  
ed in terminal warehouses in bulk; soft  
wheat, base price 2 cents per bushel less,  
or \$2.08 per bushel; white club (including  
Sonora), \$2.06 per bushel. If wheat, after  
cleaning, weighs 60 pounds or more to  
bushel, base price stands; if 58 to 60  
pounds to bushel, 3 cents per bushel re-  
duction; if 56 to 58 pounds, 6 cents per  
bushel less; if less than 56 pounds, grain  
becomes sample grade and sells on its  
merits up to within 1 cent per bushel of  
56-lb. wheat. Sacked wheat 4 cents per  
bushel more, less tare for weight of  
sacks.

## FEEDSTUFFS

Wholesale prices per ton:  
Bran ..... 35.00@40.00  
Cornmeal ..... 81.00@82.00  
Cracked Corn ..... 81.00@82.00  
Cocoanut Meal ..... 45.00@46.00  
Middlings ..... 50.00@54.00  
Alfalfa Meal ..... 32.00@33.00  
Rolled Barley ..... 58.00@60.00  
Shorts ..... 41.00@42.00

## SEEDS

Prices in round lots, lb.:  
Millet, recleaned ..... 4½@5  
Alfalfa ..... 20@21  
Flax ..... 6@6½  
Rape ..... 2½@3

## Citrus Fruit Market

Los Angeles, Jan. 2, 1918.

The calendar year ended with a total  
shipment of citrus fruit from all Califor-  
nia of 22,441,902, or a total of 55,870 cars  
of 400 boxes each. Prices have been the  
biggest ever in the history of the indus-  
try. The output for the next 12 months  
will be little more than half that, but  
prices promise to be even higher than  
last year. At the present moment the  
entire Eastern market is taking every  
orange and lemon offered at long prices.

## Shipments

Total shipments of citrus fruits from  
Southern California since November 1,  
1917: Oranges, 2069; lemons, 494; total,  
2563. To same date last year: Oranges,  
2348; lemons, 717; total, 3065. From Cen-  
tral California: Oranges, 1616; lemons,  
60; total, 1676. Same date last season:  
Oranges, 3542; lemons, 104; total, 3646.  
From Northern California this year: Or-  
anges, 178. Last season to same date:  
Oranges, 809.

## AT THE AUCTIONS

December 26  
New York: 9 Nav. 6 Val. 5 Lem. Nav.  
\$2.90-\$5.20, Val. \$2.45-\$5.20, Lem. \$4.60-  
\$7.25.  
Philadelphia: 1 car. Lem. \$1.65-\$3.05.  
Cleveland: 6 cars. Nav. \$3.00-\$5.50,  
Lem. \$2.05-\$4.65.  
Cincinnati: 1 Nav. 1 Lem. Nav. \$3.15,  
Lem. \$2.15-\$3.20.  
St. Louis: 1 car Nav. averaged \$4.90.  
Boston: 3 Nav. 3 Val. 1 Lem. Nav.  
\$3.75-\$5.45, Val. \$3.50-\$5.15, Lem. \$5.00-  
\$6.60.

December 27  
New York: 8 Nav. 4 Val. 4 Lem. Nav.  
\$2.50-\$5.30, Val. \$2.85-\$5.40, Lem. \$2.90-  
\$5.65.  
Boston: 7 cars. Nav. \$2.50-\$4.30.  
Philadelphia: 1 Nav. 1 Lem. Nav. \$4.70,  
Lem. \$5.00-\$6.15.

December 28  
New York: 4 Nav. 3 Val. 3 Lem. Nav.  
\$3.95-\$5.60, Val. \$3.55-\$4.95, Lem. \$2.60-  
\$5.45.  
St. Louis: 5 cars. Nav. \$2.80-\$3.40,  
Val. \$3.15-\$4.75, Lem. \$2.65-\$3.75.  
Cleveland: 6 cars. Nav. \$3.40-\$5.35,  
Lem. \$6.30.  
Pittsburg: 3 cars. Nav. \$4.25-\$4.50,  
Val. \$4.50-\$4.60, Lem. \$2.35-\$3.15.  
Boston: 4 cars Nav. 2 Lem. Nav.  
\$2.45-\$5.05, Lem. \$1.55-\$6.40.

## MARKET NOTES

Telegraphic reports from truck crop  
sections of California indicate a decidedly  
poor condition of cauliflower and lettuce,  
with other crops, excepting celery, show-  
ing fairly well. Celery crop has been ser-  
iously injured by the extreme dry  
weather, and more than ten per cent of  
the acreage has been cut. Prices have  
been low, not much better than half of  
last year. The cauliflower injury has also  
been because of the drouth, both ship-  
ments and prices lower than last year.  
High quality lettuce has not begun to  
come into the market yet, but will within  
a very few days.

Truck crop conditions are: Asparagus,  
93; artichokes, 85; cabbage, 82; carrots,  
89; cauliflower, 70; celery, 79; tomatoes,  
86; lettuce, 78; onions, 87; peas, 86;  
spinach, 88; strawberries, 87; turnips, 84.  
Four hundred acres of Brussels sprouts  
in San Mateo County, seriously affected  
by dry weather, have been given tem-  
porary relief by light rains of last week.  
Imperial Valley lettuce is making the  
largest heads ever shown. It is charac-  
terized as a 100 per cent quality crop.  
Imperial Valley is beginning the planting  
of 9000 acres cantaloupes.  
Truck crops in Atlantic states north of  
Florida have been injured by severe  
cold. For instance, South Carolina cab-  
bage crops reported 40 per cent of nor-  
mal and lettuce 50 per cent. In Louisiana,  
conditions are much better, lettuce, on-



ions, beets and other similar crops ranging from 70 to 75 per cent of normal. Florida reports condition of cabbage, 85; celery, 80; lettuce, 75; onions, 80; peppers, 50; strawberries, 75; tomatoes, 60 per cent of normal. Thrrips are reported doing serious damage to cabbage and onion crops of Texas. Spinach is also being seriously injured, one county of the state showing 50 per cent of normal. Coachella Valley onions promise large crop of exceptionally fine product. Central California will ship 1000 cars of celery. Post card reports to the bureau of markets of the United States department of agriculture show shipments from California during the week ending December 31, approximately as follows: Apples, 4 cars; cabbage, 3; cauliflower, 48; celery, 67; dried figs, 5; dried fruit mixed, 92; lettuce, 34; mixed vegetables, 46; mixed fruit, 5; onions, 6; olives, 1; peas, 1; potatoes, 49; raisins, 118; sweet potatoes, 7; squash, 2; tomatoes, 1.

WE NEED MORE SHEEP

**W**OOL from 20 sheep is used to make the clothing and other equipment of one soldier.

Six farms out of every seven in the United States have no sheep.

Sheep can be produced profitably on almost every farm.

What about your farm? If you keep 20 sheep you are outfitting a soldier who is risking his life for your freedom. If you have a flock of 200 sheep you will clothe ten men who are fighting in France. And if you have no sheep you are failing to do all that is in your power to help win the war.

Get some sheep.

They make both meat and wool—and both are badly needed. By proper management they can be produced on the average farm without entailing a reduction of other live stock and without interfering with any other agricultural plans.

More than the entire wool production of the United States will be used for our armies. Where will we get the wool to make clothes for the civilians? Every ship is needed to transport men and supplies from America to Europe. Unless the necessity is extreme we can't spare ships for long voyages to Australia, South Africa and South America to get wool. Furthermore, those countries have not increased their production. The problem must be solved by the production of more sheep on farms throughout the United States. We must produce our wool at home instead of hauling it from the other side of the world. We can do that if the six farms out of seven that have not kept sheep will begin to build up flocks in proportion to the size of the farm—at the ratio of one sheep to each three acres. We can do it if you will put some sheep on your farm.

You will be helping produce clothing and meat for our soldiers and yourself. You will be helping win the war. You will be making more money from your farm.

Sheep, in proportion to the value of their products, are produced more economically on the farm than any other live stock; the feed and labor requirements are less. They fit in with practically every kind of farming, get much of their subsistence from forage, from grazing weeds and grass that would not support other stock. They eat almost no feed that has a value as human food, and need less grain than other animals. They add materially to the farm revenue but add very little, relatively, to the farm expense.

Since 1914 wool and mutton prices have doubled and some grades of wool have trebled. Those who are in close touch with the sheep industry believe that attractive prices will continue. During the war over-production seems impossible.

The United States now has 1,200,000 fewer sheep than in 1914. Our

production of wool has steadily declined since 1910, when it was 321,362,750 pounds, to 290,192,000 pounds in 1914, 288,490,000 pounds in 1916 and 285,573,000 pounds in 1917. But while our production decreased our manufacturing consumption increased, from 550,356,525 pounds in 1914 to 737,679,924 pounds in 1916. In 1917 the amount manufactured will be even larger, and it seems certain that it will continue to increase during the war.

The difference between the amounts we produced and manufactured represents our wool importations from other countries. We have gotten into the habit of using a great deal more wool than we produced—we'd just send over to Australia or South Africa or perhaps somewhere in Asia and get what we needed. But the ship shortage now interferes with that uneconomic arrangement—which, in the long run will be a very valuable thing for America. Present war necessities will teach us the lesson we would have had to learn at some time—to establish sheep production permanently as a part of general American agriculture.

The need is immediate as a war measure. But war or no war it would have been necessary for us to produce more sheep. A man cannot draw money out of a bank indefinitely unless he makes deposits. We were constantly consuming more wool and mutton, but raising fewer sheep. The principal sheep countries were not increasing their productions before the war and seemed to have reached their maximum. There was a discrepancy between consumption and production that was rapidly becoming critical. The war brought the problem to a crisis.

What about your farm?

Is it one of the six out of seven farms in the United States that have no sheep?

Get some sheep!

Remember that 20 sheep will clothe a boy who is risking his life "over there."

SILAGE FOR HORSES, SHEEP AND SWINE

By Wm. Hislop

**H**AY, grain, mill feeds and oil cake have reached such forbidding prices as to discourage some stockmen. Men who have silos are less fearful of "dried-up" pastures and winter feed than those who have none. Silage, however, is not a panacea for all these troubles, but it mitigates them to a very large extent. Dairymen are given credit for having used silage first, and some people think that it is a feed fit only for the dairy cow. True, the use of silage and profitable dairying are closely associated, but such are not its limitations.

Horses and Mules

Experiments at the Pennsylvania, Missouri and North Carolina stations have shown that corn silage can be used as a part of the rations for all classes of horses and mules. Mouldy, spoiled, rotten acid or frozen silage is very unsafe as a horse feed, and none but the best should be fed. A good daily ration for a 1400 pound draft horse at work consists of 15 pounds silage, ten pounds legume hay and ten to 12 pounds oats. Idle horses can consume profitably about 25 pounds silage daily plus ten to 12 pounds hay. Weanlings, yearlings and two year olds will make satisfactory growth when silage constitutes a part of their roughage. In addition, they should receive some grain and hay. Mature-in-

foal mares, have produced strong foals on a ration of legume hay and corn silage. Silage is also a very excellent winter feed for horses on dry or oat and wheat straw. Many horses in the wheat belts of Washington would be in better shape for spring work if they received some silage. In starting horses and mules to eat silage only three or four pounds per head should be given daily along with other feeds. The silage should then be increased and the other feeds decreased.

Sheep

As with horses, the addition of silage to rations for all classes of sheep reduces their cost and supplies succulence, palatability, and variety. Likewise, rotten, mouldy, sour or frozen silage should not be used. Pregnant ewes should receive from three to four pounds per head daily during the winter. This should be supplemented with two or three ounces per head daily of cottonseed cake and some hay. After the lambs are born silage increases the milk flow of the ewes. In the fattening of lambs and yearlings for market, the cheapest gains have usually been made when silage constituted a part of the ration. Rams winter well on silage as a part of their feed.

Cattle

Silage is just as indispensable to successful beef-cattle raising as it is to successful dairying. In fact, during these times of high priced feed-stuffs it is highly essential. As with sheep and horses, silage alone is too wide a ration. Cattle receiving silage exclusively will not do well. Cotton-seed meal, linseed-oil meal, clover, alfalfa or pea hay should be fed with it. Fattening steers will eat 20 to 25 pounds per head daily. Wintering yearlings will do likewise. Calves may be fed all the silage they will clean up twice a day. Grain and legume hay should, in all cases, be fed in addition. Bulls also thrive on silage. From ten to 15 pounds per head daily plus hay and some grain are sufficient to keep them in good condition. Pregnant beef cows will eat 30 to 40 pounds of silage per head daily plus some hay.

Swine

Silage is too bulky for swine. However, it may be fed as a conditioner or tonic especially during winter, but hogs will not fatten profitably on it. They waste more of it than they consume. When pasture is unavailable, sows that are suckling litters would benefit by receiving a limited quantity.

This is a good time to plan and even plant some of the hardier garden crops. Thousands of failures were made in garden planting last year and few successes stand out and show wherein all could be patriotic. It is the gardener who counts on his head at this time who will probably succeed.

Madison Cooper, publisher of "The Modern Gladiolus Grower," Calcium, New York, has joined the procession, started by the war conditions, and has increased the price of the "Grower" to \$1.00 per year.

If you can't raise a pig, save one. You can do so by eating less pork.

BREAKING THE HEIFER

The injunction, "let patience have her perfect work," should be obeyed in breaking the heifer to milk. No matter how gentle she may be and how much she may have been handled, she will object to the first manipulation of the udder.

The udder is tender and inflamed from carrying the secretions for several days prior to calving. Then, not being used to being handled in this way, causes her to kick. If she is handled carefully and is not excited during the first three or four days, there is generally no trouble in making her a gentle cow.

If she insists on kicking, a good plan is to nail a board to a pole so that it will extend as far as possible below the pole. When ready to milk place this pole from the manger to the floor so that one end rests on the floor behind the cow. The board will then extend from the pole nearly, if not quite, to the floor, and by standing on the other side of this while milking, the cow can do the milker no harm. After she has kicked the board a time or two, she will become a little more quiet.

The udder should be manipulated with the utmost care while it is inflamed. If care is taken not to unduly irritate it, the heifer will soon learn that the operation is performed to relieve her and she will gladly stand. Patience is the only price to pay and generally a little of it will go a long ways toward successfully breaking the heifer.—Journal of Agriculture.

Cooperative selling organizations lend prestige to the fruit section in which they operate; and a greater confidence is extended to the pack and quality of the fruit put out by such organizations, and their business-like methods, than to the individual grower. In other words, the average purchaser would rather buy the same fruit from a well-organized association than from the individual.

ON THE RIGHT SIDE

"Wonderful mastery you have over these savage animals," said the admiring visitor to the lion tamer. "How do you manage it?"

"Easy enough, sir, if you keep on the right side of them."

"Ah, yes, but what is the right side of them?"

"Well," said the tamer, "I reckon it's the outside."

Comfortable barns keep dairy cows far more cheaply than high priced food.

ARMSTRONG NURSERIES

John S. Armstrong has a reputation for putting out nursery stock which "stands up." It is true to name; it is thrifty stock; and it gives a foundation for fine orchard or ornamental planting. One evidence of the quality of his stock is the quality of the catalogue he issues every year, and the 1918 catalogue is no exception or, if it be, it is that it is even finer than any predecessor. Nearly every page has its illustrations and every page is filled with information for the prospective planter. Those who would plant should write for it to the Armstrong Nurseries, Ontario.

WEATHER CONDITION

San Francisco, Cal., Dec. 29, 1917.

	Rainfall			Temp.	
	Wk.	Season	Norm.	Mar.	Min.
Eureka	.70	8.20	16.37	65	46
Red Bluff	.94	3.06	9.79	72	40
Sacramento	.40	1.20	6.92	68	38
San Francisco	.67	1.55	8.03	64	50
San Jose	.12	1.07	8.03	64	42
Fresno	.10	.49	3.41	66	40
San Luis Obispo	.14	.71	5.59	68	46
Los Angeles	.00	.42	5.00	86	50
San Diego	.00	.25	3.03	73	43

ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

BRENTWOOD IRRIGATED FARMS, In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address

BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco



# REO

"THE GOLD STANDARD  
OF VALUES"

## This Reo Six Is a Light Six But It Is Also a Sturdy Car

THE TERM "LIGHT" as so frequently used in speaking of motor cars, is a relative term only.

IT MAY MEAN MUCH—or nothing. Depending on whether the reader knows all the factors that enter in.

THIS REO SIX IS LIGHT—just as light as sound engineering will permit.

AND IT MAY SURPRISE YOU to know that—not in the "ads," but on the scales—this Reo Six is as light as many, and actually lighter than some, whose claims to lightness are their chief recommendation.

WE REO FOLK have never talked much about lightness—because that quality in itself is proof of nothing, and yet, as we've said, we make Reos just as light as may be, by the use of the best materials known to the art—as light as may be compatible with the safety factor we desire.

WE LAY MORE STRESS in our advertisements on the staying qualities of the Reo product and the consequent low upkeep.

BECAUSE THAT REALLY COUNTS—those are the qualities the buyer most desires and seeks in the car he buys.

WE DO NOT SACRIFICE endurance for an immediate effect—either in our sales talk or in our designing.

REO ENGINEERING is admittedly sound—it is the standard by which other engineering is compared by those who know.

AND SO WE DESIGN each part of a Reo with an eye single to long time service. Doing that, we automatically obtain low upkeep.

SO, AS WE'VE SAID, this Reo Six is light, using the term relatively—but more important, it is sturdily built.

PUT IT ON THE SCALES—then weigh other cars of similar power and wheel base and size, and you'll agree this is indeed a Light Six.

AND WHILE YOU'RE at it, examine carefully the size of the various parts, especially bearings and the shafts that carry the load and take the driving strains—and you will find other arguments why, at the same price, you should select a Reo Six for yours.

THE SAFETY FACTOR in a Reo is greater than that in any other make of car—save one. And that other is also, in its special class, the world's best car.

STRANGELY ENOUGH, the real proof of "lightness" is not to be found on the scales alone—but in the tire mileage.

SOME CARS are so flimsily made and some others so poorly designed that they are practically dead weight on the tires. Result, excessive tire wear and expense.

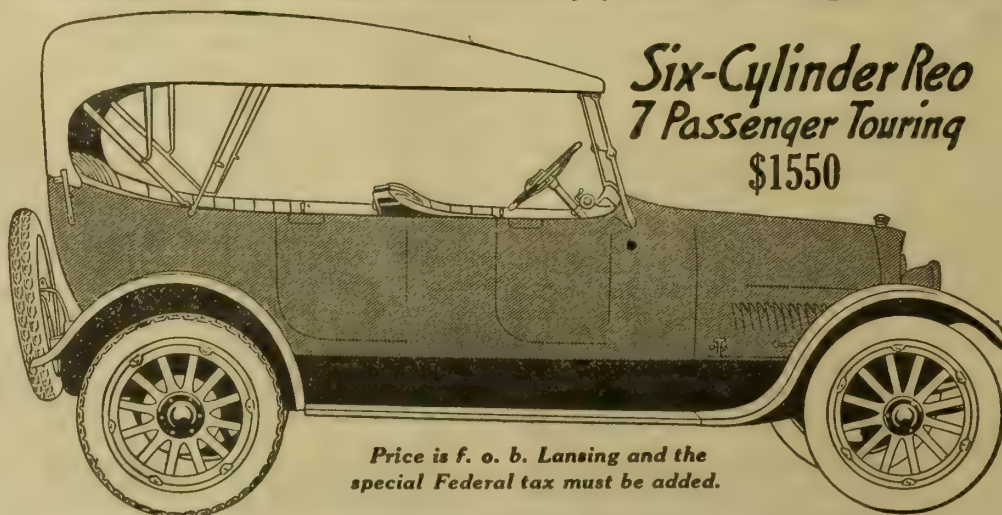
ASK ANY REO OWNER of any Reo model about his tire mileage, and his reply will convince you that the Reo is the "Lightest" Six made.

SUPPLY IS LIMITED—we cannot hope to supply all who will want this Reo Six.

SO ONLY WAY is to see your Reo dealer at once, place your order and secure an early delivery date before his limited quota is disposed of.

TODAY won't be a minute too soon.

**Reo Motor Car Company, Lansing, Michigan**



*Six-Cylinder Reo  
7 Passenger Touring  
\$1550*

Price is f. o. b. Lansing and the  
special Federal tax must be added.



# CALIFORNIA CULTIVATOR

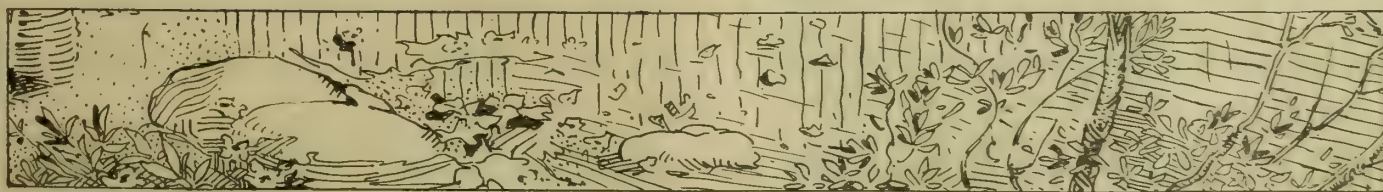
*THE LIVESTOCK  
and DAIRY JOURNAL* Combined with **CALIFORNIA  
CULTIVATOR**

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

January 12, 1918

SAN FRANCISCO



Marching to Join the Allies



## Keen Observation

*of your **TIRES** will demonstrate the superiority of this **GOOD LUCK** tire.*



**Pacific Rubber Co.**  
COAST DISTRIBUTORS  
LOS ANGELES, CALIFORNIA

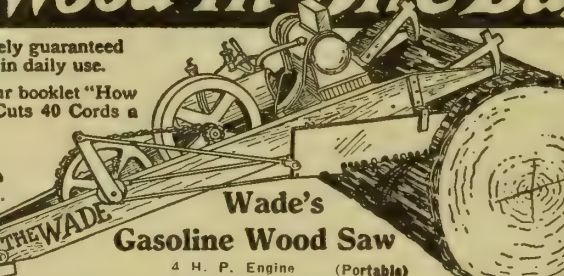
## This Saw Cuts 25 Cords of Wood in One Day

It is absolutely guaranteed—hundreds in daily use.

Write for our booklet "How Dan Ross Cuts 40 Cords a Day".

Delivered anywhere in the U. S. A. only

**\$165**




**Wade's Gasoline Wood Saw**  
4 H. P. Engine (Portable)

**REWADE & CO.**  
SINCE 1865

339 Hawthorne Ave., Portland, Ore.  
910 N. Howard St., Spokane, Wn.

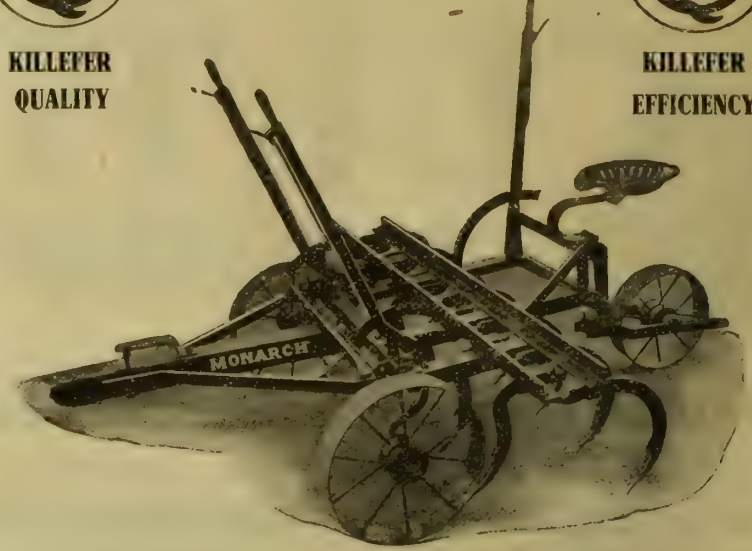
This wonderful invention does **TEN TIMES** the work of **TWO MEN** in the woods.


With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a **40 inch log** in **five minutes**. Write us today.



**KILLEFER QUALITY**

## Monarch Cultivator





**KILLEFER EFFICIENCY**

The Killefer Monarch Cultivator has more varied uses on the ranch than any other tool we manufacture. As a Beet and Bean Chisel it has no equal. As an Orchard Cultivator, where deep cultivation is desired, it gives perfect satisfaction.

As an Alfalfa Cultivator, when fitted with our Special Alfalfa Tooth, it does excellent work, loosening the ground to a depth of from six to eight inches without injuring the stand. This deep cultivation enables the water to percolate to a greater depth than any other method except subsoiling.

The Killefer Mfg. Co.  
Los Angeles, Cal.

Corvallis, Oregon, April 3, 1916.

Gentlemen: The Monarch Cultivator did us a good job in our alfalfa field taking out a tough grass sod which nearly had the alfalfa whipped out. Am pleased with the performance. We are handling it with a 30 H. P. motor.

Yours, J. B. CORRIE.

**THE KILLEFER MANUFACTURING CO.**  
**2209-21 Santa Fe Ave. Los Angeles, Cal.**

# DOAK ENGINES

Simple, Reliable, Efficient

Operate on Stove Distillate,  
No. 1 Distillate or Gasoline

Made in sizes  
from 5 to 240 H. P.

WRITE FOR CATALOGUE



**Doak Gas Engine Company**  
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**THE Martin**

**DITCHER & GRADER**

Here is the farm tool that has solved the labor problem as to making and cleaning ditches, grading roads, terracing and levee building.

**DITCHER & GRADER** used exclusively by thousands of farmers and ranchers in 48 states. Gives satisfaction wherever used. Does the work of 50 men. Does it quick.

**Simple—Practical—Efficient**

All steel, reversible, adjustable. Long life. No repair bills. Size for every requirement. Write for catalog and list of users near you free.

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Every Martin is Sold On **TEN DAYS' TRIAL** Money-Back Guarantee

# -MANURE-

Sheep Manure, Horse Manure,  
Cow Manure and Rotted Manure

CALL OR WRITE

**Pacific Manure & Fertilizer Co.**  
429 Davis St. San Francisco



## High Protein Tankage For Hogs

"Prepared with the Greatest Possible Care"

1000 Lyon St., Los Angeles, Cal.

## Krogh Manufacturing Company

206 No. Los Angeles St.  
Los Angeles, Cal.

**Krogh Pumps are Absolutely Water Balanced**  
**No End Thrust Possible**

147-159 Beale St.  
San Francisco, Cal.

**No Set Collars Used**  
**THE NO TROUBLE PUMP**




**Krogh Direct Motor Driven Pump**

Fitted with Ring Oil-  
ing Bearings

Renewable Babbitted  
Bushings

Ring Oiling Gland

We also build deep well  
turbines, deep well plungers,  
horizontal and vertical  
pumps for mining, irrigation,  
drainage.



The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.



## Fig Growers Convention at Fresno

A Largely Attended Meeting Which Will Result in a Marketing Organization, Likewise in More General Production of Figs, of Which the Country Still Imports Thousands of Tons

**H**ENRY MARKARIAN is elected president of the new fig growers' association and the fig growers are determined to back him in the work of upbuilding a greater industry. The fig industry of Asia is paralyzed and California is in a position to meet the world's need. Besides, California can put up a wholesome, attractive food, while food packed by Turks never has

developed the necessity of cooperative effort, through organization, as at the present day. In the great world struggle for military supremacy, who of us can foretell to what extent the application of these fundamentals may determine the result? With the brightest minds and the ablest men of the warring nations devoting their every thought and energy toward the perfection and application of these princi-

spirited business men, realizing the benefits which accrued to the raisin industry through the organization of the California Associated Raisin Company, decided, if possible, to organize the peach growers of the state along similar lines, and thereby save a great industry from irreparable ruin.

Accordingly, a meeting was called for this purpose on August 21st, 1915, at the Fresno Chamber of Commerce building. Preliminary steps were there taken toward the formation of a peach growers' organization, sufficiently capitalized to finance the grower and properly and successfully manufacture and market the product. At this meeting an organization committee was appointed, consisting of William Glass, J. C. Rordan, T. B. McKelvey, J. P. Bolton, I. Teilman and Granville Kimball, their duty, in accordance with resolution passed at this meeting, was to promulgate a plan of organization and call a mass meeting of growers for the purpose of the completion of a cooperative association.

This mass meeting was called for and subsequently held on August 28, 1915, at which were present about 300 growers, all alive to the necessity of the business at hand. The chairman, William Glass, outlined the existing conditions necessitating the calling of the growers together for the purposes of organization. He presented to the meeting the recommendation of the committee that the peach growers incorporate as a stock company, capitalized at \$1,000,000, issuing 25,000 shares of capital stock at a par value of \$40 per share. The committee's recommendation was adopted by this meeting and stock subscriptions were called for, resulting in the pledging of

men for the able and businesslike manner in which they carried on this work, beset with many perplexing problems, to fruition, with no thought of compensation, except the desire to see a great industry placed on a profitable basis.

January, 1916, was the month set for legal incorporation, at which time it was necessary that a subscription to capital stock reach an aggregate of \$250,000. Hard and persistent work was necessary. However, by the set date the necessary amount had been subscribed and a mass meeting of growers was called for January 12, 1916, to be held at the Auditorium, Fresno. This meeting was attended by representative peach growers from every section of California where acreage had been signed and stock subscribed. Twenty-five trustees were elected, representing these several sections.

Legal incorporation of the California Peach Growers was effected, and William Glass was the unanimous choice as the first president of this association.

The work of securing further stock subscriptions and crop contracts was prosecuted with renewed vigor, resulting in obtaining, by August 1, 1916, less than one year from the inception of this movement, crop contracts covering 45,000 acres of bearing peach trees, and capital stock subscriptions totaling \$850,000, the latter in the aggregate representing 6,000 stockholders, 5,700 of which were actual growers. Though to some it might seem these figures could hardly be attainable in so short a time and from all parts of the state, they evidenced the fact that the growers themselves



The Maslin Fig Orchard at Loomis

A scene taken by the Cultivator camera some time ago. This orchard has some remarkably fine types of figs which are being made the foundations of orchards.

been particularly appetizing. There were fig growers from all parts of Central California and they said "we will organize and the new association shall be California Fig Growers' Association."

No single voice was raised against organizing and thousands of acres have already signed up. Central offices will be established at once in Fresno which will be under the general supervision of nine directors. The first assessment was merely nominal, that of 10 cents per acre and to bear the expense of organization.

The committee on organization consists of E. Newbby, F. W. Yokum, Henry Markarian, E. W. Sheridan, W. S. Clarke, J. S. Douglas, Robert McHenry and J. H. Sampson. Of the purposes of the organization we will speak more at length in a later issue.

One of the inspiring addresses which aided in leading up to the organization, was the address of Frank Wilson, head of the Peach Growers' Association. We give Mr. Wilson's address practically entire:

**T**HE Benefits of Cooperation, Organization and Standardization," when taken in its entirety, covers an exceptionally wide scope, and the dove-tailing of the whole into the workings of a cooperative organization is necessary to insure positive success.

This subject is today commanding the attention, not alone of the producing classes of California, but of the great nations of the world, who realize the absolute necessity of cooperation, organization and standardization, that the goal of "Efficiency" may be reached. Perhaps at no time in the history of the world has there de-

veloped the necessity of cooperative effort, through organization, as at the present day. In the great world struggle for military supremacy, who of us can foretell to what extent the application of these fundamentals may determine the result? With the brightest minds and the ablest men of the warring nations devoting their every thought and energy toward the perfection and application of these principles, with efficiency as their ultimate goal, should any of us question the wisdom of applying these methods in the growing and marketing of our products? To the skeptical, we have but to refer to the success made by our local organization, the California Associated Raisin Company. The California Peach Growers and the several kindred associations of producers throughout the state are as well concrete examples of achievement along these lines.

Being an official of the California Peach Growers and quite an extensive grower of peaches, I feel in a position to be able to present to you a short resume of the history and work of this grower's organization in the placing of the peach industry of the entire state upon a firm and sound foundation.

The adage, "Necessity is the mother of invention," was truly applicable and fitting in the case of the California peach grower. For several years prior to organization the industry was in a most deplorable condition, especially with reference to the freestone varieties. Farmers, unfortunately burdened at that time with a freestone peach orchard, were compelled to dispose of their cured crop to speculative operators at a net loss of about \$40 per ton. Because of this condition, the fruit was grown, picked and cured, if at all, in a desultory manner, was inferior in quality and decidedly unpopular with the trade, in fact everybody had a knock at the peach.

The awakening, the dawn of a new era, for the peach industry was ushered in when some of our most enterprising growers and a few public



Drying Figs in California

This drying scene is in the yards of the Kearney Estate now the property of California University. California is now shipping thousands of tons of high quality cured figs. The demand is for still more.

\$30,000 in subscriptions to the capital stock before adjournment was taken. William Glass was elected chairman of the organization committee and the initial and subsequent work attendant to the formation and organization of the California Peach Growers was prosecuted by the gentlemen comprising this committee with characteristic determination. A debt of lasting gratitude is due these gentle-

men for the able and businesslike manner in which they carried on this work, beset with many perplexing problems, to fruition, with no thought of compensation, except the desire to see a great industry placed on a profitable basis.

Success or failure at this juncture lay largely with the management, who, I assure you, fully appreciated the responsibilities and difficulties yet confronting them before the industry

Continued on Page 38



## Olives in the Antipodes

Australia is Picking up the Olive Industry. Comparisons of Its Output with Other Sections of the World.



CALIFORNIA is, we have sometimes thought, a fairly extensive producer of olives, but from the Australian standpoint we are left out, even from the "also present" list. We note an article in "The Fruit World" of Australasia in which Mr. Beaumont, manager of the government orchards at Blackwood, South Australia, treats of olive production in that section. In introducing his subject he refers to Italy with its 4,000,000 acres planted to olives and other countries with fairly extensive plantation, but makes no mention of California as a producer. South Australia is the principal producing state of Australia, yet it is growing only about one acre for every 100 California is growing.

However, there are some most interesting points in Mr. Beaumont's article as to conditions and methods in Australia. In proof that South Australia is still pioneering note that the writer mentions the fact that there are some 45 varieties. Commercially, California has reduced the great number she grew at one time to three or four, in fact, practically to one variety. The Mission is a long favorite, with Manzanillo a tardy second, and the Ascolano or other large varieties fill the demand for the mammoths.

From Mr. Beaumont's article we give the following:

The principal producers of the olive today are Italy, Spain, Algeria, Greece and Turkey. Italy has over 4,000,000 acres, and Turkey has over 1,000,000 acres, while South Australia has about 1,000 acres. South Australia grows more olives than all the other states of the commonwealth combined, so that as far as Australia is concerned the olive industry is in a very small way indeed.

From my own experience I should say that a large percentage of the olives of South Australia are seedlings. The olive is the same as most of deciduous fruits in that the seed does not come true to the parent stock, but is more or less worthless—in fact, it has been demonstrated that only about one-half per cent of seedling olives have any commercial value.

The originals of our best types of trees were probably selected seedlings, but the better methods of getting desirable varieties are by grafting or budding or by layers or by cuttings, of which there are two parts used—the soft tips and the hard wood of the bigger branches, generally known as truncheons. Budding may be done any time when the sap is flowing freely, and either a single bud or a twig with several buds may be used in the ordinary way, and the new growth must be cared for as attentively as is necessary in other fruits. Budding the olive is not so easily done as other fruits; the bark does not lift so readily and does not heal quickly, hence budding is not often carried out.

In like manner and for the same reason grafting is not very successful, though in certain cases well worth trying—that is where there are well-grown trees which do not bear, or else bear fruit of an inferior quality, and in such a case I would advise grafting only a section of the tree in one season.

Most of the olive trees are raised from cuttings. Layering is more certain, but is too costly and takes too long. The planting of cuttings of the soft tips seems to be coming more and

more into favor, and is simple and fairly effective; the cuttings go into small space, and are planted much as we do the vine cuttings.

As a general rule the tops of growing shoots are cut off about four inches in length, just when the wood is passing from the soft state to the fibrous. The tips should be cut just below a node, and the lower pair of leaves should be removed. They should be planted in a shady spot—a shadehouse is best—in fine sandy soil, and be kept constantly moist. When the roots start, transplant into small pots, and from them into their position in the grove when about one year old. To root ten per cent of these cuttings must be considered a fair return. There is no doubt but that the truncheons are the best if they can be procured. These truncheons should be made in winter, and may be from one inch to three inches in diameter. Remove any of the twigs and cut into lengths of about 15 inches; the actual cutting may be done with a sharp axe on a solid block, care being taken not to split or to splinter the ends. There are several ways of dealing with these truncheons. By some growers they are tied into bundles and buried in horizontal position about one foot deep in damp soil, but it must be well drained; then in early spring they are planted in rows in a slanting position, with one end three inches out of the soil. The soil is then ridged up so as to cover the ends.

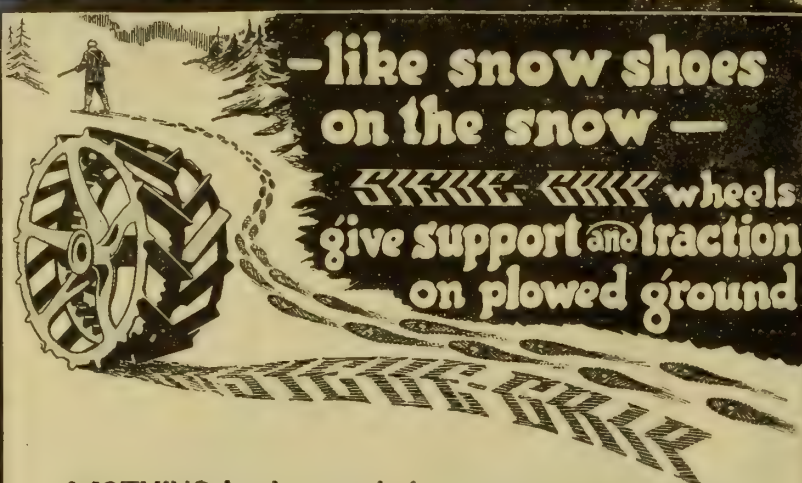
The olive will grow practically everywhere; of course it will thrive best in a good rich, free soil, with clay under, but with variation of treatment it will do well under almost any circumstances—for instance, they are now planted in some of the most arid parts of America, and I have seen olives in parts of Australia where it was almost impossible to grow anything else.

The pruning of the olive is carried out at first, as is usual with other trees, namely, to obtain a good base or form or shape, as you may desire to call it. The tree should not be permitted to become dense and bushy.

The olive bears upon the wood which grew the preceding year, and upon no other, therefore to encourage the growth of new twigs along the heavier limbs must be the pruner's endeavor, but care must be taken not to allow a dense growth, as any tree which has not a free circulation of light and air cannot bear fruit. At the same time care should be taken in thinning out a tree not to expose the bigger limbs to the direct rays of the sun; if you do the bark will burn, and the limb will die.

As far as disease goes, the olive is a very hardy tree, and is not easily injured, but its greatest scourge is the olive scale, which undoubtedly spoils the beauty and usefulness of the tree, but it is easily dealt with, and I think it is to be regretted that trees, even within the parks of Adelaide, are allowed to go uncared for, and thus to spread the trouble far and wide. On the secretions from the olive scale, the "sooty fungus" which we are all so familiar with, exists. Unfortunately this scale and the fungus frequently attack other fruits and flowering shrubs. An occasional spraying with kerosene soap wash will clean the trees effectively.

The curculio beetle is fond of the olive, but it may be checked with



—like snow shoes  
on the snow—

**SIEVE-GRIP** wheels  
give support and traction  
on plowed ground

NOTHING has been made for carrying a man over soft snow better than the snow shoe. The light weight mesh and broad surface, enables a man to travel over snow—the snow shoe gives traction and SUPPORT.

Just so is the action of Sieve-Grip Wheels on soft, plowed ground. The angular grips of the skeleton tread act just like the cross-woven thongs of the snow shoe. The principal of construction and results of both are the same, yet the material is different.

The Sieve-Grip Wheel is one solid piece of steel—no parts to loosen or wear out—gives the Tractor ample support—does not pack—It CULTIVATES; and is only one of the features that make for the superiority of

**SAMSON**  
**SIEVE-GRIP**  
Reg. & Pat. U. S. & Foreign Countries  
**TRACTORS**

Many hundreds of farmers are doing their farm work better and with more profit as a result of Sieve-Grip cultivation. You, too, can increase your profit and INCREASE CROP PRODUCTION. Let us tell you more about the Snow Shoe Tread Samson Sieve-Grip Tractor. WRITE TODAY.

**SAMSON SIEVE-GRIP TRACTOR CO.**

Stockton.

(Division of General Motors Corporation)

California.

## TEAGUE QUALITY CITRUS TREES

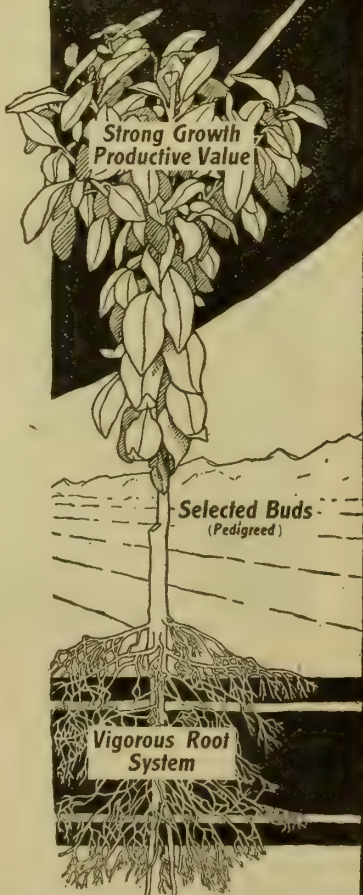
AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

**The R. M. Teague  
Citrus Nurseries**

Box 67, SAN DIMAS  
CALIFORNIA

FOUNDED IN 1889  
AT IT 29 YEARS





arsenate of lead, one pound to five or ten gallons of water.

And now a little about the produce. It seems passing strange that though everyone is agreed that only certain varieties of apples, pears, plums and other fruits are of commercial use, they think that any old olive is quite all right. They have not gripped the fact that only a few varieties of the olive are worth planting. We have 45 varieties at Blackwood, but it remains to be seen how many are of value. It is not necessary to go into the question of the picking of the fruits; machines have been tried, but a man who means business is the best when it comes to picking olives. One firm in Adelaide has over 100 adults picking olives this year; that in itself is enough to show that it is profitable. I would sooner pick olives than cherries any day.

The price, at 13.6 per hundred, should pay handsomely if you have good trees, well cared for. The main product of the olive is olive oil, and it is beyond the scope of the present paper to go into the details and mysteries of its production. One ton of olives should yield 35 gallons to 45 gallons of oil. A grove of 14 acres of trees, now 30 years old, has averaged 450 hundred pounds of olives per acre for 20 years, the annual yield varying of course with the seasons. Simply let me tell you that the olives are crushed thoroughly so as to free all the oil contained, the crushed product is placed in mats of esparto grass, and subjected to pressure, say about 300 pounds. The mass is then broken up, and warm water added, and is again pressed, perhaps three or four times, and up to a pressure of 1,000 pounds. The oil and water are separated as soon as possible after being released, and the oil is either filtered or allowed to settle, according to the method adopted at the various factories.

Our consumption of oil is at present about 60,000 gallons, and we produce about 14,000 gallons, so there is room for improvement, and when we allow for the further fact that we import about 300,000 gallons of cheap cotton seed and colza oil, we will find even a greater reason for extending the culture of the olive. Then there is the preparation of the ripe olive as a food, and the green olive as an appetizer. Here again is great scope for enterprise. Olive oil is a powerful food, and is a splendid substitute for animal fat, and has practically no waste. There is nothing better for the frying of foods. It is a fine preservative; we are all acquainted with its use in tinning fish, etc.

As a medicine it is most useful, either internally or externally; it will heal cuts and prevent chapping; it is a true remedy for constipation; it is of great assistance to anaemic people in forming new blood, and has been strongly recommended as a food to persons suffering from diabetes, who are not able to assimilate starchy foods; in fact, olive oil and ripe olives are invaluable, though little understood adjuncts to health, and when the price charged is reduced to something within reason, there is no doubt they will come into general use.

#### FROST PROTECTION FOR OLIVES

**D**ISCUSSING frost protection for olives, the Olive Journal says:

When it comes to considering protective methods in the case of frost, we have conflicting opinions as to the results that follow such methods. We have been



## Why This Oakland Wins Wide Favor

**I**T is no accident, nor mere caprice of opinion, that has given the Oakland Sensible Six its high place in the regard of the American farmer.

It is, rather, that this car more ably meets his wishes and his needs than any other, and better serves him at a lower upkeep cost.

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assured by some that the use of crude oil, as used ordinarily in orchard heating of other fruits, is injurious to olives for pickling or the making of oil. On the other hand, we have been given equal assurance that no such injury results. We have eaten processed olives that were said by the packer, who also grew them, to have been subjected to not less than six "smudgings" with crude oil, and we found them no different in taste from olives not thus treated. But we cannot settle his question by any proof that we have at hand, and nothing less than a series of careful experiments made in orchard and processing plant, under rigid conditions of impartiality, will be sufficient to demonstrate the point so that the industry may know once and for all which of these two opposing views is sound. We incline strongly, ourselves, to the view that olives can be saved from frost as other fruits are saved, and that by the use of crude oil in orchard heating, and we feel this way about it because we have no proof before us that oil heating does injure olives for processing. If any packer or grower is possessed of indisputable proof that olives have thus been rendered unfit for pickling, it will be our duty to promptly change our views and to give as wide publicity as we can to the facts.

In the meantime it is planned to carry out some exhaustive tests along this line in both grove and plant this coming season, and the results will be carefully watched.

### FIG GROWERS' CONVENTION

Continued from Page 35

could be placed upon a sound and profitable basis.

By the terms of the grower's contract the association was obligated to receive and grade all deliveries, paying the growers, on a graded basis, a minimum of \$100 per ton on No. 1 fruit. Of this amount, 70 per cent was to be met by cash on delivery, the remaining 30 per cent, optional with the association, could be covered by cash or interest-bearing notes.

I shall not attempt here to recount the difficulties encountered, and surmounted, during the first year of the existence of the California Peach Growers. Rather I would express appreciation and thanks for the loyalty displayed by the growers, and the confidence shown by the banking institutions of the state, who, with scarcely an exception, extended every courtesy within their power.

I am pleased to report the growers received in final settlement on 1916 crop an excess of nearly one-half cent per pound over the guarantee; a seven per cent dividend on the capital stock was declared and a reserve of \$20,000 set aside for emergency.

The California Peach Growers received and marketed, during its first season's operation, in round figures, 24,000 tons of dried peaches, this in the face of a carry-over from 1915 of an amount variously estimated at from eight to 12 thousand tons. This crop was marketed at a price returning a profit to the grower and a saving to the peach industry of at least one and one-half millions of dollars.

Furthermore, during their short life the California Peach Growers had succeeded in building up their own manufacturing and marketing machinery and had acquired all rights to a patent, which has been applied for, on a dried peach peeling device, which is of inestimable value to the industry and through which, together with a thorough system in the standardiza-

tion of grading and packing, this association will establish an asset in the reputation of its brands, that its output will be sought after and for which the trade will pay a premium.

Summarizing, we find through cooperation and organization a few of the distinctive accomplishments of this one industry made in one short year, such as:

The elimination of excessive speculation, through financing the grower, and the marketing of his products.

A saving to the industry of a million and a half dollars per annum.

The establishment of a system whereby the grower receives payment, based on graded quality of fruit delivered.

The acquiring for the association a United States patent on a peeling and re-cleaning device, which is worth millions to the industry by the placing upon the market of a sanitary and wholesome food product.

And last but not least, the preservation of land values and home comforts.

These advantages, and many more, have been accomplished for this one industry through the medium of cooperation, organization and standardization. Many like associations have had similar experiences.

The cooperative spirit, as applied to agricultural efforts, is gaining favor, in fact becoming particularly popular

## Now's the Time

to get in your dormant or winter spraying. If done properly—this will prevent the accumulation of certain insect and fungus enemies; will clean your trees and soften the bark; and will keep the trees in better health, vigor and fruitfulness. For this purpose there is nothing so effective as

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In California. Growers' cooperative concerns are now looked upon with favor in the great trade centers of the United States. As a standardizer of quality and a stabilizer of price, it has the confidence of the present channels of trade, the broker, the wholesaler, the jobber and the consumer.

One important thought in connection with a contemplated movement of this nature is whether it is wise to operate a stock corporation, with sufficient capital to finance the grower, or to simply incorporate as a cooperative concern without capital, as some of our most successful associations are doing today.

I am convinced that there is a distinct advantage through the employment of the former method as the great percentage of growers generally need ready money during the harvest season, and only an association with capital can secure to the grower this accommodation.

It is an historical fact that many of the failures in cooperative effort are directly traceable to the absence of capital with which to finance the grower at a time of need.

I would strongly recommend that growers' associations confine their memberships exclusively to growers actually producing the particular commodity handled by that certain association.

While we are, in spirit and in truth, a cooperative concern, we are in the unique position of appearing as a stock company, capitalized and operating for the benefit of our stockholders, while in effect all profits of our association revert to our grower members. By confining our membership to grower stockholders exclusively, we are not subjected to a false interpretation of manipulating for profit.

However, there is, to my mind, one basic principle that underlies and envelops the entire structure of any business concern and which is especially applicable to cooperative associations—confidence. This supreme attribute cannot be acquired by capital alone, but rather through a strict adherence to business integrity, honesty of purpose and square dealing.

Only when complete confidence is established with the grower, the financier, the trade and the consumer can the success, success that means all the word implies, be attained.

In conclusion, I wish to say it is my honest conviction that cooperative organization, composed of and for the farming classes of California, is the best safeguard known today for the insuring of positive and continued profits on the millions of dollars invested in agricultural pursuits.

The theme is right in principle, and under careful and unbiased management, skilled in the arts of competitive business, is right in practice.

When such an organization is formed and managed along the lines previously mentioned it fraternizes the members, in fact, is an industrial democracy.

There are many lines of agriculture still under the spell of gamblers in produce. Let us hope that many of these will eventually harken to the cry of cooperation, the application of which will mean positive prosperity to the producing classes adopting its protection.

Few gardens are made rich enough to grow vegetables well. Unless they are pushed rapidly to maturity much of the fine flavor and crispness is lost. This does not mean forcing them by artificial means, because in that case, too, they lack flavor. A healthy, normal growth is to be desired.

### THE MISSION FIG

From J. W. Mills' Paper Read at Fresno Fig Meeting



WICKSON in his California Fruits says: "The fig is, perhaps, the grandest fruit tree of California. Its majestic size and its symmetry

make it a crowning feature of the landscape, and its dense foliage renders the wide space embowered by it a harbor of refuge from midsummer heat, both for idlers and the industrious. On adjacent farms in Pleasant Valley in Solano County there are large fig groves; one serves as a shelter for the packers of fruit from the contiguous orchard and the other encloses and shades a croquet ground." Wickson also records the measurements of several large Mission fig trees growing in California. At Knight's Ferry in Stanislaus County there is a Mission fig tree 60 feet in height whose branches cover a circle 70 feet in diameter. At the same place is a grove with the trees set 60 feet apart, yet the branches intermingle and form a dense shade.

Generally speaking, the local popu-

larity of the Mission fig predominates over that of other varieties. This is because it is so much more widely grown and common than other varieties and not because it is possessed of any superior qualities. In the markets outside of California it will never supplant the Smyrna or Callmyrna. The latter has become established for more than a generation in the Eastern markets and besides the quality and appearance are far superior to that of the Mission fig. Were the quality and appearance of the Mission fig superior to any other it would have had the lead in the markets of the world before now.

Within the last few years the Mission fig has proved to be a reliable money maker, but previous to this time there was doubt in the minds of many growers as to the advisability of planting it on a commercial scale. The dark color of the dried fruit and the sugar coating which develops soon after packing make it unattractive for the Eastern consumer, who usually mistakes the sugar for mold. In spite of this, the market has strengthened for this variety, and of

late years prices have been good, with a consequent increase in planting. The Mission is a lazy man's fig. After the orchard is once established he need not go near it except to pick up the dried fruit at harvest time and sack it.

The large size to which the Mission fig tree grows necessitates wide planting. No nut tree or other fruit tree requires so much space as this variety of fig. Even though the branches do not touch in old bearing orchards, unless plenty of moisture is present in a loose deep soil, the fruit will be small and the trees will show signs of distress. Several orchards in Solano and Yolo Counties testify to this fact. Never plant closer than 48 to 50 feet. Intercropping can well be resorted to in the young fig orchard with no injury to the trees.

Two-year-old trees are better than one-year-old. The roots that grow on the bottom of a fig cutting the first year are very tender, and careless digging or handling after digging will break the bark at the point where it joins the cutting, rendering it worse

Continued on Page 43



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## The Nutritive Value of Dried Fruit

Prof. M. E. Jaffa of Our State University Tells Why We Should Eat More Dried Fruit



**D**RIED fruits should be eaten in much larger quantities than at present.

We must remember that there are two chief objects of foods—to build and repair tissues, and to yield energy.

Can dried fruit build and repair tissue? Can dried fruit yield energy? The answer to both these questions is, "Yes." The dried fruits, however, can not build to any appreciable extent either muscular tissue or bony tissue; it builds fatty tissues.

The chemical analyses of dried fruits, flour, and bread, as determined from a number of samples, show them to have the following composition:

These data show us conclusively that the chief nutritive element in the dried fruits generally is sugar, one of the most valuable of the carbohydrates, and certainly most easily digested and assimilated of all. When we consider that the consensus of opinion among physiologists and nutrition investigators is that the carbohydrates of our food, and not the nitrogenous compounds, are the source of muscular energy for the body, we can better appreciate the high nutritive value of dried fruits. The average amount of carbohydrates, mainly sugar, in the dried fruits is about 62

per cent, while the average amount of carbohydrates, mainly starch, in flour is 75 per cent. In other words, the carbohydrate element in the dried fruits is not very much below that noted for flour. If we refer these data to the grain itself, then the carbohydrate content of the dried fruits very closely approaches that of the grain.

The value of fruits and vegetables also in the diet is further emphasized when the mineral ingredients of foods are considered. These for convenience and brevity may be divided into base-forming and acid-forming elements. Those contributing to the former are potash, soda, lime, magnesia, etc.—to the latter, sulphur, phosphorus, chlorin, etc. In meat and eggs we have an excess of the acid-forming elements. The grain by-products indicate sometimes a balance or a slight predominance of acid-forming elements, and the more refined the product the greater is the excess. In milk the balance is in favor of the bases. Vegetables and fruit contain a large excess of base-forming elements. These statements indicate very

strongly the desirability of having in the diet a generous proportion of fruits. A diet consisting only of cereals, meat and eggs in which therefore the acid-forming elements would greatly predominate would result in bringing about disturbances of metabolism.

Another way of comparing the total food value of one food with another is by means of the caloric or unit of energy. An inspection of the figures giving the caloric values of the foods above listed, indicates that flour possesses the highest fuel value, due to the fact that it contains much less water than do any of the other food products mentioned in the table. At the same time one quite often meets with dried fruits containing no more than 15 per cent of water, in which case there is very little difference between the total value of the fruit and the flour, particularly in view of the fact that "our frequently contains upwards of 12.5 per cent of moisture. The caloric value of white bread, as ordinarily made, is 1,270 calories per pound as shown by the above data.

The comparison, however, of the chemical composition alone does not give one always the true physiological or nutritive value of a food. While it is true that flour possesses the higher total food value, when compared with the ordinary dried fruits, still a combination of the two is far better than either alone.

In using dried fruits we obtain not only the nutritive value of the sugar, but whatever other hygienic or medicinal value they have by virtue of the salts and organic acids found in fruits and also in vegetables.

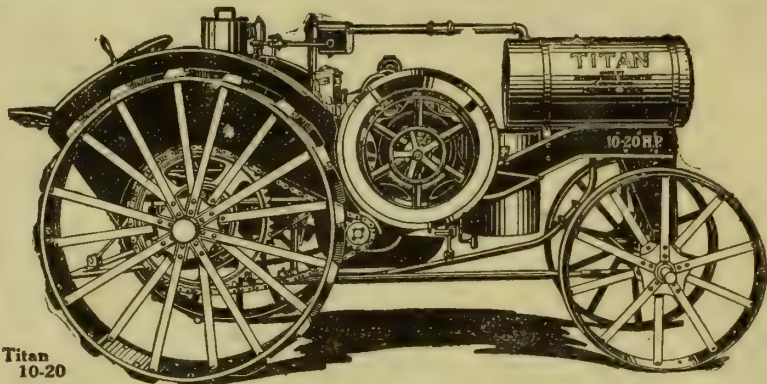
The craving for sweets, exhibited in most children and many adults, is a natural demand on the part of the system for a needed food. This truth is brought home to us more clearly when we remember that nature's food for the infant, mother's milk, contains, of its solids, 50 per cent sugar. Nature continues to provide sugar for the older children in the form of sweet fruits. But it must be borne in mind that after we have outgrown the milk, all the necessary ingredients in the proper proportion are not found in any one food as they are in milk. It is therefore left to the instinct, judgment and wisdom of man to provide for himself with the different foods and to combine them for himself into a perfect whole. If he ignores one class and over-eats of another he is usually punished for his mistake.

Whether it is instinct or knowledge that led man to combine nuts and dried fruits, it matters not—the result is a happy one. The nuts furnish what the dried fruits do not—nitrogen and fat. If these two foods are used with bread or crackers, or other flour preparation which would supply starch and bulk, we have a well-balanced meal.

### SWEET SOIL

A fertile soil must be sweet, not acid, and well supplied with organic matter and humus. It must have a suitable texture and tilth—a favorable environment for the plant roots. The necessary bacteria which have to do with soil activities must be present and conditions favorable for their growth and multiplication. The soil must be properly aerated and have a sufficient supply of soil moisture, which includes proper tillage, irrigation and drainage. All of these factors and others must be associated in a careful systematic plan of soil management in order that the land may be fertile and produce large crops.

	Raisins Dried	Prunes Dried	Figs Dried	Dates Dried	Apricots Dried	Apples Dried	Flour	Bread White
Water .....	28.47	29.14	22.7	38.2	29.4	28.1	12.5	32.9
Protein or Nitrogenous compounds .....	4.55	2.54	4.3	2.9	4.7	1.6	10.8	8.7
Fat .....	.61	.59	.7	.3	1.0	2.2	1.0	1.4
Sugar, starch, and Crude fiber .....	62.57	63.37	62.5	55.0	62.5	66.1	75.1	56.5
Mineral matter or ash.....	3.14	2.71	1.3	1.4	2.4	2.0	.5	.5
	100.00	100.00	100.0	100.0	100.0	100.0	100.0	100.0
Fuel value per lb., calories.	1,336	1,292	1,395	1,125	1,290	1,350	1,650	1,270

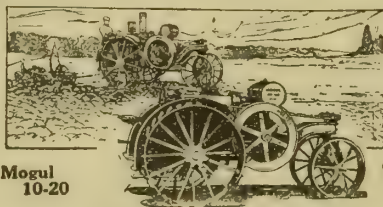


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## Guard Against Bee Diseases

**I**N THE present effort to meet the demand for sweets there are many who are buying a stand or a few stands of bees who have little knowledge of some of the requirements of bee keeping. Above all, these beginners should be aware of the fact that serious injury may be done to their own bees, and even to the welfare of the industry of the state, by ignorance of diseases which may affect their brood. A specialist of the U. S. D. A., now in California, has given warning on this point. He says:

"One of the most serious factors mitigating against large production is bee disease, and a constant danger to the industry is the careless amateur bee man who does not give his stands the necessary attention and allows foul brood to develop unchecked by weakening his stand. His bees are not able to hold their own against attack of those of his neighbors, and these busy insects will come from even a mile or two to rob the weaker stand, and in this way the bees carry with them the foul brood infection and the disease is rapidly spread.

"Foul brood is a bacterial disease of bees which attacks the insects in the larval and the pupal stages. There are two forms of foul brood, the American and European. It may be difficult for the amateur to distinguish between these, but the more common method is to puncture the cells with a toothpick and attempt to draw out the pus residue. The American foul brood will string out like glue for three-quarters of an inch to an inch and a half, while the European foul brood will string out but little. Later in the season when the residue of the cell has dried out it is rather simple to distinguish between the two forms of the disease. In case of the European foul brood the remaining scale can be easily separated from the cell wall and removed with a toothpick. In case of the American foul brood the scale sticks tightly to the cell wall and cannot be removed without taking with it a portion of the cell.

"The stand should be frequently examined and as soon as infection is noted measures should be taken to check the disease. In case of the European foul brood the control is comparatively simple. It is only necessary to shut off the queen from the infected part of the stand and the worker bees will clean out the comb and in the process of digesting the honey within the body of the bee the bacterial infection is killed. A common method in accomplishing this purpose is to confine the queen to a clean box below, placing the infected box as a super. Between these a queen eliminator is used, it being a simple frame with parallel wires stretched across close enough together to permit the workers to pass through and prevent the larger queen from passing. The worker bees will then clean out the "super," later filling up the cells with honey.

"In case of the American foul brood, the infected stand should be moved back a few feet and a new one placed where it had been. By taking out the frames from the infected stand and shaking them in front of the new stand the bees will enter their new home. The frames should then be removed from the infected stand and boiled up or burned."

### DON'T OVERSTOCK

The Yolo County farm bureau is doing some live wire work as a war measure. At a recent meeting at Willow Oak Park E. F. Atwater, field agent in bee keeping for the U. S. D. A., cautioned in particular against the

overstocking of the range, there being a tendency when one farmer is making a good profit from his bees for his neighbor to become enthusiastic and go into the game also. This may result in the presence of too many bees in that immediate neighborhood, which will cut down on production of honey in all of the yards.

Another important thing is not to rob the bees of more honey than they can well spare. By leaving an abundance of honey for the insects to feed on they will come out in the spring in much better shape to produce heavily during the blooming period.

When we stop to think that a vigorous stand of bees will produce from four to 20 pounds of honey per day, the importance of great care in maintaining the vigor of the stand is obvious.

### BUYING TRACTORS

Some months ago we commented on the state of New York entering into the producing more campaign in a most practical way through the purchase of a number of tractors which were put into immediate use on almost any terms to suit the farmer, either by rental, purchase or otherwise. The state of Maryland has now purchased tractors, putting them into the field to work. This is a labor-saving measure.

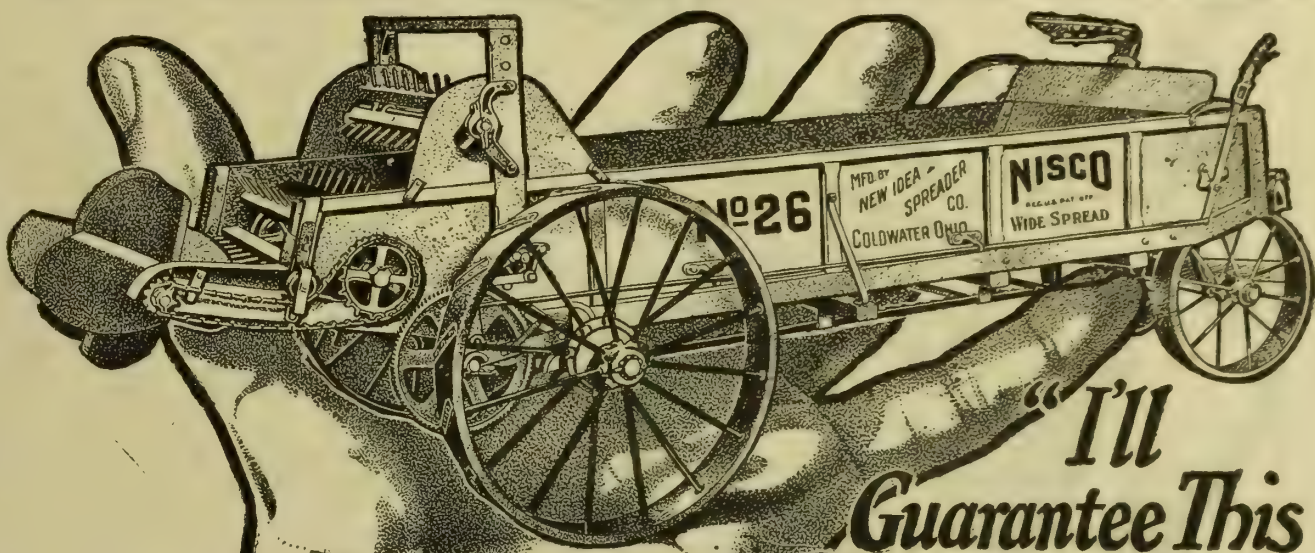
Charges for the use of the tractors are based on the absolute cost of operation. These charges range from \$2.50 to \$3 an acre for plowing and 50 cents an acre for harrowing or disking. The results thus far have proven entirely satisfactory. Plans are already under way to continue the use of the tractors in the preparation of land for spring crops.

Even in the far off Philippines the

ravages of rinderpest have so depleted the carabao that a serious "labor situation" is threatened there. Tractors are extremely high in price, but are being purchased by the larger planters, and even cooperative purchases by smaller land owners have been made.

### FOURTEEN CHEMICALS

Fourteen chemical elements enter into the composition of all plants—calcium, carbon, chlorine, hydrogen, iron, magnesium, manganese, nitrogen, oxygen, phosphorus, potassium, silicon, sodium, and sulphur. Only four of these are of prime agricultural importance, namely, nitrogen, phosphorus, potassium and calcium, because these elements are not only very necessary for plant growth but they are most likely to become deficient and need to be supplied in order to maintain soil fertility and a profitable production of crops.



**"I'll Guarantee This Spreader to Pay for Itself in One Year."**

*B. C. Oppenheim*

I've been in the spreader business so long that I know what I'm talking about. Take my word for it, when I signed that guarantee I knew I was taking no chances.

Here! Take your pencil and let me prove it.

Suppose, for argument's sake, that you keep but six cows, 4 horses and a few hogs or sheep. They will make—according to Cornell Experiment Station reports—approximately 120 tons of manure per year. When these reports were made the chemical value of fresh manure figured out \$3.31 per ton, and piled or stored manure at \$2.55 or less, depending on the length of time it has lain. Nobody knows what the potash and nitrate are worth now at war time prices. Anyway, fresh manure is worth at least three-fourths of a dollar more than old; and when you add the hard extra labor involved in hauling, piling and hand spreading, it's safe to make the figure *twice* that. Many other Experiment Stations and the U. S. Department of Agriculture support these figures, and some make them even higher.

Now you can see from this why, on any farm of 80 acres or more, I am willing to put my reputation squarely behind the above remarkable guarantee on the

# NISCO

## The Original Wide Spreading Spreader

A farm implement which pays for itself in one year is a 100% dividend payer ever afterwards—a fact that thousands of successful farmers have learned concerning the Nisco. Why shouldn't you get this dividend?

The Nisco was the *first* spreader to embody the wide-spread idea and maintains this supremacy to this day. It operates with an everlasting chain sprocket wheel drive that minimizes breakage and saves wear. Has a tight bottom and an endless chain conveyor that brings all the load to the two beaters. Handles a load 30 inches high as readily as any other does an even box full. A convenient lever allows spreading any quantity desired—3, 6, 9, 12 or 15 loads per acre. Back of the money-making Nisco Spreader

See the machine at the Nisco dealer's. If you don't know him, we will send you his name.

**B. C. OPPENHEIM, Mgr.**

## NEW IDEA SPREADER CO.

**"Spreader Specialists"**

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California Jobbers Selling  
Our Spreaders are:

Dixon & Griswold, Los Angeles.  
Pacific Implement Co., San Francisco.  
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is my guarantee that means the best in material, construction and operation. You don't gamble when you buy a Nisco because I will even make good any breakage from any cause within one year.

I want you to read our immensely interesting booklet "Helping Mother Nature" and will gladly send it on request. Also our handsome catalog. If you want to make or keep your land fertile this will pay you. Send today. Address me at Box 233





# -before you PLANT

get

Get planting suggestions and full information about gardening and horticulture from Germain's big 1918 garden encyclopedia. This valuable illustrated book is free to those who really require it. It includes everything you want to know about citrus, deciduous and ornamental trees, vegetable and flowering plants, berry bushes, etc. Reliable cultural directions by experts are given in every case. The big book also gives complete information about garden tools for all purposes, lawn mowers, rollers, garden hose, spray material and spray pumps—and flower, vegetable and field seed.

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## FRUIT TREES

FRENCH, IMPERIAL and SUGAR PRUNES on Myro., almond and apricot roots; CHERRIES, ALMONDS, BARTLETT PEARS and a full assortment of Fruit and Nut Trees, Plants and Vines.

Catalog and Price-Lists free upon request.



## SHADE TREES

EUROPEAN SYCAMORE, AMERICAN SYCAMORE, TEXAS UMBRELLA, TULIP TREE, HAWTHORNS, PALMS, PEPPERS and ACACIAS and a

most complete stock of Deciduous and Evergreen Trees and Shrubs, Roses, Cannas, etc.

Crow's Nurseries, Gilroy, California

## Persimmon Trees

Get Genuine Varieties Selected  
by Persimmon Specialist

Write for Suggestions

R. S. Fujii

1918 Francisco St.

Berkeley, Cal.

# LIME

Pulverized Limestone.....\$3.35 per ton  
Ground Limestone.....\$2.00 per ton

This is the One Element Lacking in  
Most California Soils. Write for Booklet  
Riverside Portland Cement Co.

640 Title Insurance Bldg., Los Angeles, Cal.

Better service is assured by the advertiser if when writing you mention  
the California Cultivator.

## Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Warbles or Grubs in Back

Have cow which had lumps on back. Lumps grew larger until, upon examination, a small hole could be seen. When the lumps were squeezed bugs appeared, looking exactly like a peach borer. Are they maggots? How can they be gotten rid of? — Subscriber, Los Altos.

These are the grubs of the warble fly which should be forced out and killed. A better way would have been to have taken, earlier in the season, when they are smaller, making a small cut, when they may be pressed out at the earlier stage. They are most annoying to cattle and cause serious loss. Fifty million dollars per year is the estimated loss in the United States. Be sure and crush the grubs which are removed. Make examinations at least every two weeks at this season of the year, for more of the lumps. Some have treated by using ordinary oil can filled with kerosene. This is inserted in the small opening, but this is not so satisfactory as the treatment of forcing grubs out through the opening, or if necessary, cut. During the summer, fly repellants may prevent to a smaller degree, attacks of the fly. Arsenical dips for cattle, used to destroy the Texas tick, also destroys vast numbers of the newly hatched larvae before they secure entrance.

### Employers' Liability Insurance

Have small grocery. Wish to employ delivery boy for four weeks. Have been told insurance rate would be the same as for a year. Is this true and can I not get cheaper rate for the four weeks?—Subscriber, Long Beach.

The best information on the subject may be secured by writing directly to the Industrial Accident Commission, Union League Building, Los Angeles, or address them at San Francisco.

However, may say that the minimum in this case will be \$10 and the insurance will cover any employment for similar purposes during the year. The rate depends, in this case, upon the method of delivery. If it be by foot, or bicycle, the rate is nominal. If by auto, much higher and if by horse and wagon, still higher.

### Size of Eggs

We have some White Leghorn pullets hatched last March which started to lay in September. They have layed well since, but the eggs are still smaller than usual. Would like to know cause of this. — Subscriber, Hemet.

Size of eggs is a matter of breed or breeding or both. As a rule the larger a hen is the larger egg she lays, but Minorcas are a notable exception to this rule. Many strains of Leghorns lay a rather small egg, and often individual hens are found in large-egg breeds like the Orpington and Brahma which lay a comparatively small egg. Probably your pullets belong to a small-egg strain, but the eggs may increase in size in the spring. The only way to increase size of eggs in a flock is to use the largest eggs for hatching. If your eggs are all small, buy hatching eggs from some strain that lays a larger egg.—J. A. K.

### Ashes from Straw

I also beg to call your attention to

another matter that I do not remember to have seen covered in any agricultural work, and that is the value of the ashes occasioned by the burning of stacks of hay. Any insurance company can give you an estimate of the tons of barley, oat and alfalfa hay burned annually in this state, and my observation has been that the ashes are left to leach out on the spot. According to Snyder, the ash of barley hay, for instance, carries potash, 20 per cent for the grain and potash, 23 per cent for the straw, also phosphoric acid, 35 per cent for the grain and phosphoric acid, four per cent for the straw. Roughly, a ton of the ash of a burned barley hay stack would contain 400 pounds of potash and 400 pounds of phosphoric acid. Of course these quantities are obtained from laboratory analysis. The question is whether the violent combustion of a burning stack would admit of the retention of these constituents and whether they would remain in available form. In this event the money value of such ashes would surprise the unfortunate owners of burned hay.—E. Y., Chula Vista.

The suggestion is a good one where one has access to such material. We question very much as to the quantity of such ash, but certainly every farmer within reach of such material understands its great value. Too many farmers do not understand the great value of straw as a mulch, and it is allowed here, as well as in the East, to be purposely burned and lost.

### Skim Milk for Hens

I have separator and would like to know if sweet milk is good for laying hens. It is a lot of bother to let it thicken.—Subscriber, Orange.

There is no increase in the nutrients of the feed by letting it sour, but, because of the beneficial effect of the acids, it is recommended by experts in feeding where it is allowed to sour. With calves it has been recommended that one should be consistent in feeding either entirely sweet or entirely sour, that is, not changing back and forth from day to day.

## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

### Collecting Wages

What chance have I of getting money out of a company owning an orange grove when I do the work myself with team by the hour? They have not paid me for several months. Can I take their fruit in any way to get my money?—Subscriber, Porterville.

It is possible that you might be entitled to file a lien upon the property for such portion of your work as is done within 90 days of the date of filing said lien. Otherwise you should bring a suit and attach the real estate, growing crops, or other property of the company, obtain a judgment and satisfy the same out of the sale of the property.

### Property Deeded Away

While living in Oklahoma I purchased a house and lot of the value of \$3,000. I came to California, leaving my wife there until I obtained a position. At my wife's request, I deeded the property to her and she executed a deed to me, the consideration in each deed being \$1,500. She has since deserted me and destroyed the deed. How can I recover my share?—Subscriber.

If both deeds were destroyed the



title to the property would remain as it was. If the deed to you alone was destroyed and the deed from you to the wife recorded, she undoubtedly could convey a clear title to the property and you would be left to any remedy which you might have against the wife personally. You might bring action in Oklahoma and if such action was taken prior to the transfer of the property and notice of the filing of such action was recorded, any transferee of the wife would take with notice of your rights in the matter and subject to the outcome of the litigation. The matter of the consideration expressed in the deed makes little or no difference.

THE MISSION FIG

Continued from Page 39

than useless. When the tree has grown two years in the nursery this union becomes strong.

Cuttings are perhaps as satisfactory to plant as trees, provided water can be given once or twice during the first season. Two or three cuttings in a place will guarantee a better stand than when only one is planted.

Neglect in pruning bearing trees is a great mistake that is almost universally made. The branches become long and spindling and will sometimes grow five or ten feet, attaining a diameter of no more than an inch, in order that the tips may get "a place in the sun." The branches should be kept thinned out so that plenty of light can enter the entire body of the top. This will result in stocky branches that will produce large fruit and more of it. This will improve immensely the quality of the first crop, which is becoming popular as a shipper. In the desert regions this crop is a money maker as it is harvested in May and by summer pruning another crop of large figs is harvested in the fall.

EXPLORING UNCLE SAM'S LARDER

How much food has Uncle Sam in his national larder with which to start the New Year? How adequately can he feed until harvest time his many millions of civilians and soldiers? Will it be necessary during the coming 12 months for his citizens to eat war bread? Can he furnish the share which he ought of the daily ration needed by the fighting men of the allies? And can he supplement somewhat, perhaps, the meager fare of the friendly neutrals to whom the war has brought the pinch of hunger?

These are the big and vital questions, so important to the conduct of the war, which the bureau of markets of the United States department of agriculture is seeking to answer by carrying out the war emergency food survey provided for by the last Congress. All over the country today first steps are being taken to answer these questions. Hundreds of thousands of persons in control of food supplies, large and small, are filling out schedules mailed to them by the army of employees which the bureau of markets has assembled in Washington to conduct the big year-end food inventory. These schedules will show the quantities of more than 100 different foods on hand December 31, 1917, quantities on hand December 31, 1916, for comparison, and the quantities shipped out by freight or express that have not been delivered to the consignee. To the totals of these figures will be added quantities held by retail food dealers in certain counties where store-to-store canvasses are being made. The latter intensive surveys will be made in order that the figures for the entire country can be checked. In addition, about 40,000 selected families will report on special schedules regarding the stocks of food on hand, and the ways in which they utilize certain food products.

In two weeks the Treasury Department will issue blanks for returns of Federal War Tax

This involves every corporation, partnership and individual. It will be impossible to fill out these without complete instructions. Wrap up 50c, put in an envelope and send to us. We will send you the 32-page pamphlet, written by Ewell D. Moore, a San Francisco attorney and Federal tax expert, giving a complete analysis of the War Revenue Bill—written especially for the layman. Endorsed by banks—guaranteed to conform to the Treasury Department's ruling. *Please do not send stamps.*

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enjoy life get a  
**TANK**  
and have water for  
Bath, Kitchen and Laundry

The cost of upkeep for a redwood tank and pipe line is so little you'd never figure it

And think of the genuine comfort and satisfaction you'd get by having water wherever and whenever you needed it

A redwood tank and pipe line will pay more dividends on the small investment and cost less to maintain than any improvement you can make on the farm

Write us for particulars

Write us about your wants, the size of your place, the source of water supply, and any other information that will enable us to give you, in return, an intelligent plan, with prices, etc.

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Gentlemen:  
Please send promptly your catalogue of Water Tanks.

I need a tank to hold..... gallons.

It should be mounted on a tower .....feet high.

The water to be delivered from .....

Pipe { Length.....  
Size.....

Name.....

Address.....



## Egyptian Cotton

By F. W. Waite, Imperial County Commissioner of Horticulture

**E**GYPTIAN cotton growing in the United States was started in the year 1900, and in 1902 Egyptian cotton seed was distributed by the department of agriculture and planted in Barstow, Texas, Carelebad, New Mexico, Yuma, Arizona, and Calexico, California. These experiments were failures both as to yield and quality for three years. Continued selection, breeding and improved culture methods, along with seed acclimation, brought the enterprise to a profitable condition. In 1907, at Yuma, the lint per acre was recorded at 990 pounds, with the fiber one and one-half inches long, very strong and a delicate brown color so much desired. Of the four principal varieties of Egyptian cotton grown in Egypt (1,500,000 acres of Egyptian cotton in Egypt) the seed of the Mitafifi was used in this coun-

try. For various reasons the work was concentrated at Yuma. It was through selection of plants at Yuma that the variety known as Pima was developed. This was grown at the United States experiment station on the Pima Indian reservation. This season there are 30,000 acres of Pima and Yuma cotton in the Salt River valley. Next year it is estimated there will be at least 100,000 acres of Pima planted in that valley. It is claimed by those in authority that Pima has longer fiber, is stronger and has less waste than any of the other long staples. George Butterworth, government expert cotton classifier for the bureau of markets, made the above statement. He states that there is 5.73 per cent less waste in Pima than in fancy Sea Island and that the sooner this Egyptian cotton grown in the Southwest comes on the market

in large quantities the better. It is claimed by the department that a small amount of alkali is beneficial, as it checks the growth, hastens ripening, improves the length and strength of the fiber. The United States department also states that this valley is well adapted to the growing of Egyptian cotton, having demonstrated that the yield of one to two bales per acre is possible, and the fiber has been pronounced by experts as equal to the better grades imported from Egypt.

The principal objection to growing this cotton is the added cost of labor in picking on account of the bolls being smaller. This condition can and will be met, as it has already been met in the Salt River valley. The picking of Egyptian is not as difficult as picking short staple cotton, and anyone can learn to pick the long staple, while it requires training from boyhood to be a good short staple picker. Egyptian must be picked clean, which makes it necessary to

pick much slower than the short staple, consequently it is easier to learn. The added price of fiber gives a margin to handle the added cost. Short staple is now quoted about 28 cents, while Pima is 80 cents a pound.

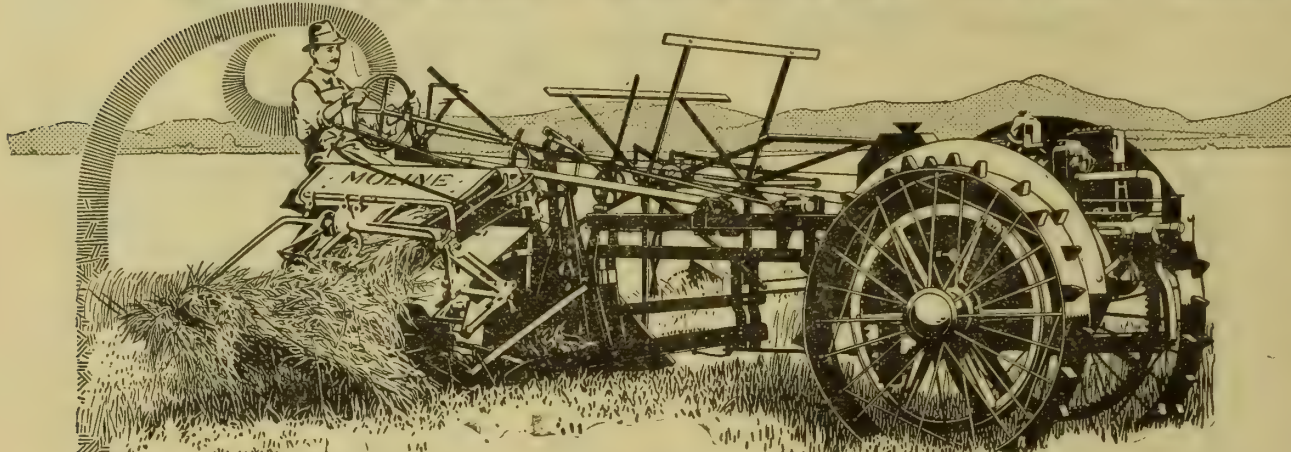
Egyptian cotton is largely used for mixing with silk and for the manufacture of cloths in which a high finish and luster is desired. It also takes the process of mercerizing better than Sea Island or Upland cotton. It is used for filling satteen, Indian linens and similar goods having a brilliant surface. It is also used in the manufacture of Balbriggan underwear and lace curtains, with dyeing unnecessary. It is used very extensively for sewing thread, which needs to be very strong. Other goods wholly or partly made from Egyptian cotton are lawns, satteens, twills, serges and fabrics for covering umbrellas, as well as other highly finished goods, largely used in manufacturing of sewing thread and fabrics for insulating and for bicycle and automobile tires. Egyptian cotton is very much desired by the government for the manufacture of aeroplane wings.

Arrangements have been made with the United States department of agriculture and the Tempe Exchange for the Imperial Valley Long Staple Cotton Growers' Exchange to handle the seed for planting in this valley during next season. The government has jurisdiction over the Pima seed and dictates where it shall be placed and planted. They want to keep it pure and have devoted a great deal of time to develop the Pima, therefore they have certain regulations. We are promised 150,000 pounds of Pima seed. It is necessary for those who want to plant Pima to make their application at once to the Long Staple Exchange in El Centro. The cost of the seed is \$76 per ton, f. o. b. Tempe, Arizona. There will also be a small added expense for delinting the seed to make it absolutely free from Johnson grass seed.

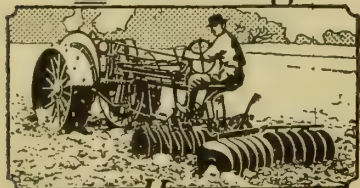
As to the culture methods, they are the same as other cotton except the distance between rows and plants in the rows, also time of planting and irrigation. Rows should be at least four feet apart and the plants should be thinned 16 to 24 inches apart in the row. Still there are many opinions as to distance. The ground should be plowed deep, filled with water and put in good tilth before planting. Planting should be done from the 15th of February to the last of March; no irrigation after planting for at least 60 to 90 days or even longer, according to the character of the soil; but cultivate very much.

The Long Staple Exchange has asked the United States department for a field man as Salt River valley was furnished one. This valley being especially adapted to growing the high-priced cotton, it is advisable that farmers who are interested in the growing of cotton plant at least a few acres of the Pima. Make arrangements at once for seed through the Long Staple Exchange at El Centro, making the payment at the rate of \$76 per ton. The balance of the expense will be adjusted—for freight and delinting upon delivery of seed. First come first served. Arrangements are being made for boys of grammar and high schools to have an Egyptian cotton club. The enterprise has the support of the Long Staple Cotton Exchange and no doubt will have the services of the United States field man. Prizes will be awarded. The Long Staple Exchange has just notified me (Saturday, December 22, 1917) that they have already booked orders for nearly half as much seed as will be available, and they advise placing orders as early as possible, otherwise some may be disappointed. The first car of seed is now on the way here.

# ONE MAN CAN FARM MORE LAND *with the*



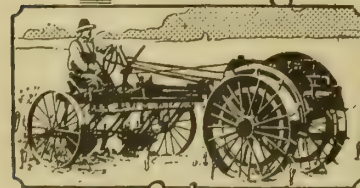
Plowing



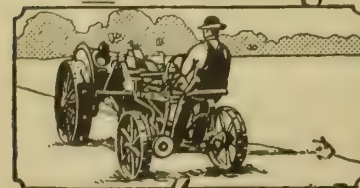
Harrowing



Seeding



Cultivating



Mowing

## MOLINE UNIVERSAL TRACTOR

*"It Solves the Farm Help Problem"*

**T**WO MILLION MEN will be gone from the farms because of the war—strong, skilled, willing workers, only a small part of whom can be replaced by older men, boys and women. Yet production of food must be increased. There is only one way—equip the men left on the farms so they can do more work than ever before.

With the Moline-Universal—the original two-wheel tractor—One Man can farm more land than was ever before possible, because—

One Man has power at his command equal to five horses, capable of doing the work of seven horses owing to its greater speed and endurance. This power is always available for any farm work.

One Man operates the Moline-Universal Tractor from the seat of the implement to which it is attached, where he must sit in order to do good work.

One Man can start in the spring and go from one operation to another—plowing, harrowing, planting, cultivating, mowing, harvesting grain or corn, spreading manure, filling the silo, cutting wood, etc., doing all farm work from one year's end to another, independently of horses or hired help.

All these one-man operations with the Moline-Universal are possible because it is mounted on two wheels, all its weight is traction weight; it is powerful—pulls two 14-inch bottoms easily—yet it is light so

that it does not pack the soil. The Moline-Universal attaches direct to the implement, making one compact unit.

One woman or boy operates the Moline-Universal as easily as a man. Miss Ruth Harding of Albion, N. Y., a proud owner of a Moline-Universal, writes: "I have never called a man from his work to assist me with the tractor in any way."

Thousands of Moline-Universal Tractors are now at work under every conceivable condition in all parts of the United States and in Canada, England, France, Sweden, Norway, Denmark, Russia, Italy, Spain, Mexico, Peru, Argentina, Brazil, Cuba, Guatemala, South Africa, Australia. Wherever a Moline-Universal Tractor is sold there is immediately a big demand for more.

The demand for Moline-Universal Tractors has far exceeded our expectations. We built an enormous factory which is devoted entirely to making Moline-Universal Tractors and three times have erected large additions to cope with the enormous demand. We now have the largest tractor factory in the world.

Moline sales and service branches cover the country. No purchaser is ever more than a few hours away from Moline service.

The Moline-Universal will solve your help and power problems. It is ready for you now. Write us today for free booklet giving full description of the Moline-Universal and name of nearest Moline dealer.

Address Department 49

**MOLINE PLOW COMPANY, Moline, Illinois**



## FARMERS TO HELP IN FOOD SURVEY

**T**HE farmers of the United States will be asked to co-operate with Uncle Sam in making the first nation-wide war emergency food survey, which will be conducted by the bureau of markets. The bureau of crop estimates will work in conjunction with the bureau of markets in this branch of the survey and will distribute through their voluntary crop reporters one-half million questionnaires to representative farmers asking for the amounts of the important crops and numbers of live stock on their farms on December 31, 1917, and December 31, 1916. From the data secured in this way a fair estimate can be made of the crops and live stock in the hands of the 6,000,000 farmers of the nation as compared to a year ago.

The questionnaire which the farmer will fill includes 56 items asking for estimates on all important crops and kinds of live stock. The schedule also asks for the amounts of a number of crops produced during 1917, the size of the farm, number of acres in cultivation, and whether or not it is operated by owner or tenant.

The object of this survey is to aid in the making of intelligent plans for adequate conservation and distribution of existing food supplies and for production of adequate food, for which there is most urgent demand. It is a part of a general investigation, provided for by the last Congress, to ascertain the existing supplies of food and food material in the hands of every manufacturer and dealer of food products in the country. Officials of the bureau of markets state that the complete survey will yield the most accurate information ever collected in regard to the extent of the nation's food resources. It is considered an important step in the effort to place the country on a safe footing in so far as the food supply is concerned.

## FINENESS OF LIMESTONE

The Pennsylvania state college has been making an investigation regarding the relative value of limestone of different degrees of fineness. Investigations were made as to the pulverized limestone being soluble in water, as to its value in creating acidity, in promoting the formation of soil nitrates, in promoting the growth of plants and as to the rate of losses. A depleted farm was taken and built up largely by the use of limestone. One feature is of particular interest, and that has to do with the fineness of the screen and, as may be noted from the report, the results from applying extremely finely pulverized stone are not enough better to justify the use of fine screen.

On the basis of the results obtained, it was concluded that an application of limestone in which the entire product consists of very fine material is less desirable from the standpoint of permanent agriculture than one consisting of varied degrees of fineness; that an ideal application of limestone is one in which there is sufficient fine material (60-mesh) to meet the immediate needs of the soil and thus allow time for the coarser particles to disintegrate; that if the entire product will pass a ten-mesh screen and include all of the fine material, it is sufficiently fine for soil improvement if applied somewhat in excess of the immediate needs of the soil. Such a product should contain at least 50 per cent of material that will pass a 60-mesh screen.

"Three pigs in the place of every two you had last year" is a good motto.

## FENCE THE DITCHES

By R. H. Williams

The common practice in Arizona is to have one fence on the high side of the ditch bank and leave the other side open. This is satisfactory where the field is never used for pasturing. It is quite customary, however, to pasture almost every field in Arizona, and on this account each ditch should be fenced on each side to protect the ditch bank. If this is not done the animals will destroy the banks and irrigation will be made much more difficult. Horses, cattle and hogs are worse than sheep for damaging the banks. The latter are afraid of water and do little damage. Place the fence

four feet from the ditch, and it is best to have concrete outlet gates which deliver the water into the field. These should come within one to two feet of the fence. Make sheep gates into each field and also attach concrete water troughs to be filled from the irrigation ditches. Some kind of arrangement could be perfected whereby water for the stock could often be placed into the concrete troughs from the ditch.

## NITRATES OF VALUE

Nitrate of soda is of high value for early crops where rapid maturity is desirable, such as peas, corn, beets and cabbage. It is a special help to

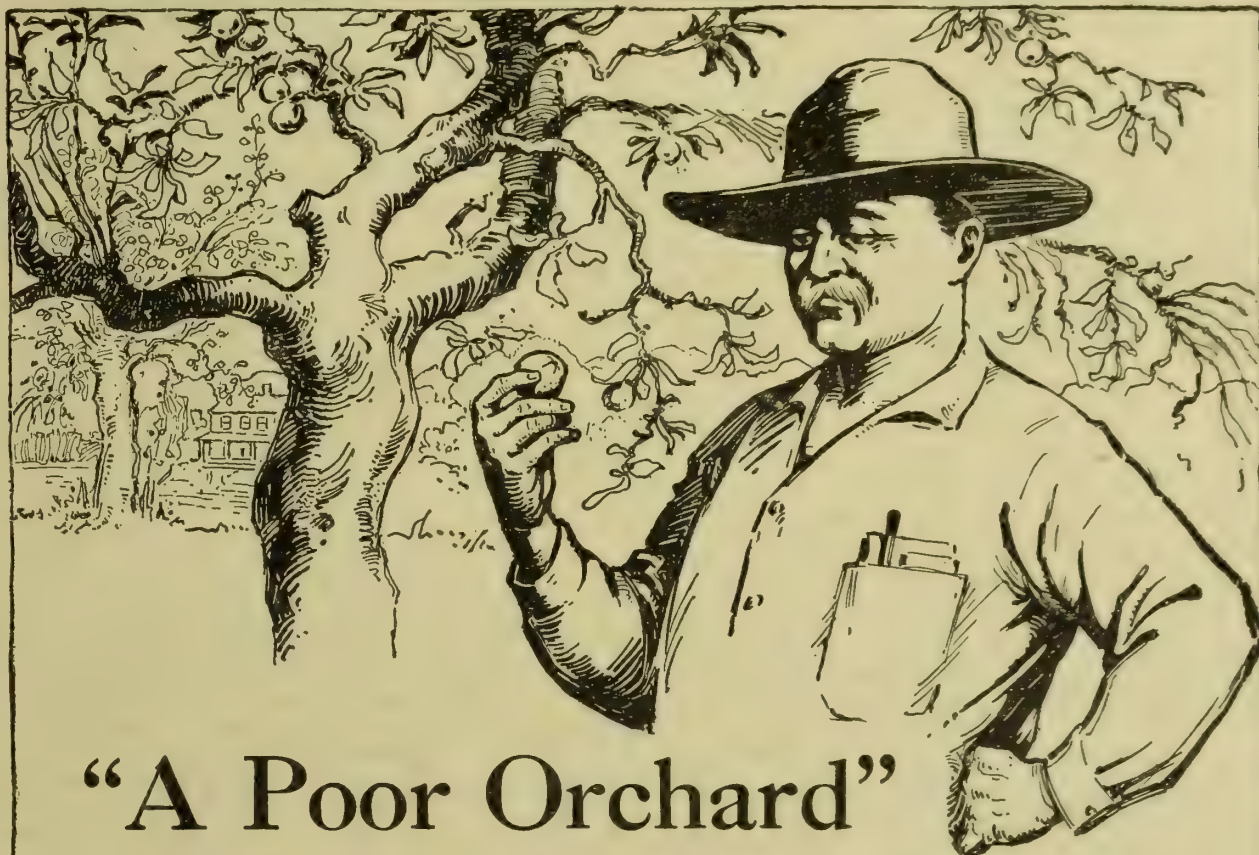
hay, grain, rye, wheat, timothy, cereals and orchards, all of which are unable to obtain sufficient nitrogen from the soil just when they need it. It is a great specific in the production of sugar beets, potatoes, cotton and cane.

Small fruits, such as blackberries, currants, raspberries and gooseberries, which need a steady, even growth, are greatly benefited by nitrate of soda, which can be furnished all ready for digestion when the plants require it.

## SO SAY WE ALL OF US

First Working Girl—Say, Mame, I heard an awful sad thing this morning.

Second Working Girl (wearily)—So did I—the alarm clock.—Life.



## "A Poor Orchard"

"It certainly is! Slow in bearing to begin with—a year behind some neighboring ones. Poor fruit and little of it when it did bear. And now it's petering out entirely, when it ought to be at its best. What's the reason? Blessed if I know."

His experience is not uncommon. Perhaps you are asking yourself just the question he did—although here's hoping you aren't. But if you are this advertisement may hold the answer. It does for the fellow above.

He didn't know it, but his troubles began when he failed to blast the holes for his orchard with

## HERCULES DYNAMITE

As a result he didn't plant his young trees. He "buried" them. Their roots were jammed into a small hole with firm, hard sides. They had no such yielding, receptive earth in which to spread as they would have had if planted in dynamited holes. The trees were never given a fair chance.

Hercules Dynamite has been the making of many an orchard. You plant

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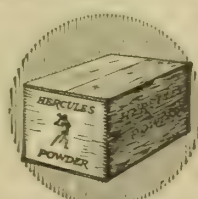


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Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, Jan. 12, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

Herefords have not long been favorites in California, but they are marching into favor as is shown in the illustration on this week's cover. There are thousands of pure bred now in the state. There are many more thousands of beef steers which are of far greater value because of White Face blood. Such scenes as this, with its background of rich feeds show in a small measure California's part in feeding the world.

## THE MONROE DOCTRINE

Those who feared that this country entering a European war would terminate absolutely the Monroe Doctrine are finding since reading President Wilson's last great message to congress that the war is to result in the extension of the Monroe Doctrine to all the world, that is liberty and justice and right of the smaller nations to live without trespass of the powerful bully, and if he does trespass he shall restore the wrong.

## CLOSING THEIR DOORS

It is probable that there is no city in the country but has its record of dealers in perishable farm products taking to the "bay" or other dumping place and destroying tons of valuable food. This simply for the purpose of holding up prices and preventing a glut. Times have changed. "The United States food administration has revoked the license of Lester Brothers, wholesale food handlers of Newport News, Virginia, for refusing consignments of potatoes and allowing them to deteriorate in the freight yards. They were ordered to close their doors on December 31 and forbidden to deal in any commodities covered by the Food Control Act."

The above from letter just received from Mr. Holman of the United States food administration.

## WEATHER

The East is "enjoying" blizzard after blizzard. Temperatures ordinarily below zero, and with the wind at 60 miles an hour mean suffering where coal is short. California is bathed in sunshine. Attendants at flower shows and festivities wear filmy gowns, parasols are in order, and out door life is enjoyed to its fullest.

Between ourselves, a bit of rain would not be amiss. We hope it is coming soon, but let's not grumble.

## COOPERATION

There never was a time when there was such general discussion of cooperative methods. Uncle Sam himself is cooperating with all the rest of the civilized world in an effort to improve the cooperative spirit. He is going to win, but in order to do it, we must take advantage of every step to

## Team Work

It ain't guns, nor armament,  
 Nor funds that they can pay,  
 But the close cooperation  
 That makes them win the day.

It ain't the individuals,  
 Nor the army as a whole,  
 But the everlastin' team work  
 Of every bloomin' soul.

—Kipling.

secure greater efficiency, and this can only be secured through cooperating with others. In other words, "It ain't the individuals, but the everlastin' team work."

## SORGHUM GRAINS

The department of agriculture has issued a statement regarding use of sorghum grains in place of corn. It has found that the grains of kaffir, milo and feterita have at least 90 per cent of the feeding value of corn, and with that as a basis the price of these grains is far less than 90 per cent of the price of corn. These have been found especially valuable fed with silage, and it is urged that the whole Southwest put up more silage and feed more sorghum grains.

## GOVERNMENT PUBLICATIONS

We recently referred to two series of publications being issued by the government dealing with war topics which might be secured direct from Washington. These were Red, White and Blue Series, and War Information Series. Some subscribers have misread this notice and have sent to the Cultivator request for them. They are not in the hands of the Cultivator for distribution and can only be secured by writing to Committee on Public Information, Washington, D. C. Please do not write this office for this set of books.

## TRACTORS TO FRANCE

The department of agriculture is lending every aid in its power to induce and help greater production. The food administration, whose duty it is to see that the entire world is fed, is looking beyond the boundaries of the United States and is sending to France 1500 farm tractors. France will be suffering still more unless it grows more foods. These tractors are to aid in that campaign. It is proposed to land them in France before the spring plowing is ended. Five hundred have already been sent.

May not the department of agricul-

ture give more material aid by some such practical work of introducing farm tractors to many a farmer who is unable financially to handle so large an investment. This may be a revolutionary suggestion, but these are serious times and more food must be had.

## W. S. S.

"Boys and girls of the Cultivator family, have you bought your War Savings Stamp? If not, have you bought your Thrift Stamp? We hope there is not a kiddie in the Cultivator family but is showing his thrift and his patriotism by emptying the little savings bank and earning a penny at every turn possible and putting it into the Thrift Stamps. Twenty-five cents buys a stamp. Four dollars worth of these Thrift Stamps, together with 12 cents, prior to February 1, buys a War Saving Stamp, then interest begins, and in five years from January 1, 1918, the \$4.12 becomes \$5.00. Every boy and girl who has not the satisfaction of owning a liberty bond may have great satisfaction in the owner-

## This Week's War News

Spain is threatened with revolution.

Rumors from Berlin indicate that the people are incensed at the failure of the militarists to make peace with Russia.

There have been fierce attacks on the part of the Turks on the English forces around Jerusalem, all of which have had no effect.

America's draft law has been declared constitutional and the draft boards are now working nights and Sundays on the next great draft.

Activities in the United States war department have increased and more rapid movement of the Liberty Army is expected from this time on.

Rumor is again insisting that Japan will send her army into Siberia because of fear of German influence yet securing control of European Russia.

Outrages in Mexico are being renewed. A railroad train was stopped last week and many were killed, one of the number a Los Angeles business man.

Sir Cecil Spring-Rice who has been British ambassador at Washington since 1913 has returned to London and it is rumored there may be a reorganization of the British embassy.

The storms in the Alps have been a great aid to the Italian forces, and with the aid of British and French troops they have driven the Teutons across the Piave and made gains in practically the entire length of the line.

The grasping nature of Germany has been shown so plainly in its peace terms demanded of Russia that German sympathizers in America are deprived of one long argument. Germany wants peace, and she wants the world thrown in.

The fighting on the eastern France front has been more or less intermittent excepting that artillery action is incessant. The long expected plunge of the Teutons is yet to come. The most definite attacks have been made in the Verdun section which the French have withstood and even gained some German trenches.

The Brest-Litovsk conference between representatives of Russia and Germany was abruptly ended by the Russian delegates refusing German demands and refusing to hold further conference unless the conference was transferred to Stockholm. Russia is reported to be mobilizing her troops again and her Baltic fleet is showing preparation for more active service.

Lloyd George's great address almost startled the world for at first reading it had a bit of the appearance of weakening and an appeal for peace before a complete victory. More careful reading shows, that while it recognizes the world's desire for peace, and its abhorrence for war, it still insists on the great underlying principle of "no peace until permanent peace."

On an hour's notice, President Wilson addressed both houses of congress and in detail told the world what America is fighting for. In a word, America demands the extension of the Monroe Doctrine to the entire world. Some think it an appeal to the Russians to encourage that stricken nation to stand for the liberty of all its own people. It endorses Lloyd George's address to English working men. It shows there is no dissension in the ranks of the Allies. There shall be freedom of the seas, no indemnity, but there shall be restoration. Alsace and Lorraine shall be returned to France. Brute force hereafter, must give way to right. There is no quibbling and Germany has a definite answer before she has asked her question.

Grow a garden. Grow it now!



# Agricultural News Notes of the Pacific Coast

## Northern California

Yuba County reports the total precipitation for the season at 1.87 inches.

Farm bureau centers of Sacramento County have elected delegates to the county bureau.

J. H. Guill and B. B. Meek have been elected to head the Butte County farm bureau.

Petaluma hatcheries report orders for chicks not nearly so heavy as last year same date.

Placer County promises to exceed the demand made upon it for big wheat production.

Sacramento Valley orchardists will use thousands of acres of young orchards for intercropping.

Extreme northern end of the state was given a present at the end of the old year of a soaking rain.

Eldorado County farm bureau is now fully organized, with Farm Adviser Burl Jones on the ground.

Butte County olive growers are harvesting fruit later than any preceding year since olives have been grown.

Butte County farm bureau meets on February 5 at Oroville. At that time four delegates at large will be elected.

Farm bureau at Shasta County is arranging irrigation meetings which have to do with best methods of work.

Supervisors of Sutter County have purchased tractors to aid in road construction, this because of shortage of teams.

Raisin growers of Yolo County are getting together in order to make connection with the Associated Raisin Company.

Rice straw in the cheaper grades of mattresses has been proving so effective that a new demand is developing for it.

The Placer County farm bureau fair which was held last summer at Auburn resulted in a net gain of several hundred dollars.

Sutter County is planting more largely to sugar beets than any preceding year. They will market through the Alameda Company.

Eldorado County is planning for extensive planting of pear and other trees this season. Every orchardist is being urged to plant as early as possible.

Northern California Counties Association is to make a survey of production possibilities of Siskiyou, Trinity, Shasta, Modoc and Lassen Counties.

The annual meeting of the Vacaville Fruit Growers' Association recently resulted in the election of C. J. Uhl, president, and W. H. Buckingham, secretary.

Samples of Yolo grown cotton sent to experts at Phoenix, Arizona, have brought reports "this cotton is very good, the grade being fancy, which is our highest grade."

A superior judge of Tehama County has rendered decision upholding validity of assessment levied by Reclamation District 833. This assures reclamation of some 40,000 acres in Butte County.

The earlier harvested olives of Butte County have been cured and are now on their way East and vats are being rapidly filled with the new picking. Practically the entire pack of Butte County has been sold.

## Central California

Some plowing is being done in sections which received Christmas rainfall.

The Central California Egyptian Cotton Growers' Association has been organized.

Wallace Sullivan is the new farm adviser for Kings County. He is already on the job.

Riverdale, Fresno County's farm center, is discussing "How is the new silage coming on?"

Tulare County has 62 fruit packing houses which were all in operation during the past season.

The first meeting of the Dinuba, Tulare County, farm bureau center will be Monday, January 14.

Farmers of the Salinas Valley are discussing as to best methods of culture of beans, also as to markets.

Kingsburg, Fresno County, claims to be the banner district in the signing of the new contract with the Associated.

Livestock men of Eastern Tulare County are discussing methods of saving stock in the absence of any pasturage.

The California Peach Growers is discussing methods of more extensive packing houses and more effective equipment for another year.

Forty thousand dollars of state funds will be expended by State Horticultural Commissioner Hecke in eradication of ground squirrels.

The Associated Raisin Company is continuing its campaign for membership. It is expected to secure a total of 125,000 acres before February 1.

The newest association of men handling dairy products is the California Butter, Cheese and Ice Cream Makers' Association. R. W. Hatton, Los Banos, is secretary.

Application has been made to the state water commission to appropriate 60,000 acres of water on the Pitnam and Tamarach creeks, tributary to the San Joaquin River.

Tulare County creameries paid out cream checks for November butterfat amounting to nearly \$140,000. This was \$28,000 less than cream checks for the same month last year.

Tulare County this season has shipped out 2237 carloads of fruit. Grapes were the biggest shippers, making up 1964 carloads. Apples were at the bottom of the list with only one carload.

George C. Roeding says that Fresno must wake up and teach the world that "here in the central portion of the Golden State there is an empire worthy the attention of the man with the dollar."

California Prune and Apricot Growers' Association has paid to growers of fruit more than \$5,000,000, and before the end of the season will have transacted a business aggregating more than \$10,000,000.

A feature of the regular December meeting of the Fresno County farm bureau directors' meeting was an explanation of the work done on the Pine Flat irrigation project. W. P. Boone, executive secretary of the project, presented report.

The Oakdale and South San Joaquin irrigation districts have received a proposition from the Sierra and San Francisco Power Company relative to the building of a great storage reservoir in the mountains along the Stanislaus River.

## Southern California

The bonds issued by the Los Angeles Flood Control District have been declared valid.

The Elsinore farm center held a meeting December 27 at which olive pruning was discussed.

Los Angeles County supervisors have appropriated funds to secure the appointment of a farm adviser.

H. E. Drobish, assistant farm adviser of San Bernardino County, is working up the formation of a cow testing association.

Reports from Orange County farmers who are using poisoned barley in their squirrel campaign indicate that they are making a big haul.

The Imperial Valley Long Staple Cotton Growers is purchasing 150,000 pounds of seed which will plant 4300 acres of Pima cotton next season.

The cyanide situation, which has been so strenuous since the beginning of the war, is now much better, and deliveries are being made freely.

Mrs. H. H. Clark of Calipatria received a check for \$1395 in payment of a motor truck load of turkeys which she sent to Los Angeles for Christmas market.

Bean growers of Southern California are discussing the formation of a general bean association to cooperate in marketing with the Lima Bean Growers' Association.

At the meeting of sugar beet growers of San Fernando Valley, December 12, investigation was made into cost of growing sugar beets. The total was found to be \$11.78 per acre.

Milk dealers of Redlands have announced a rise in retail prices of milk from 11 to 13 cents a quart and from six to seven cents a pint, the rise being effective the first day of the year.

Work is progressing on the great irrigation scheme which is intended to water many thousand acres of land in the northern and eastern portions of Imperial Valley. Water is to be taken at Laguna Dam.

Los Angeles is presenting a big poultry show January 9 to 15. The Rabbit and Pet Stock Association of Southern California is there with a large exhibit also. A long list of prizes is offered to exhibitors.

The Imperial County Farm Bureau reports as result of a canvass recently made amongst the producers of seed milo, that the valley has available in sight at least 79 tons of seed. It is reported that the valley will plant 106,000 acres the coming spring.

There has been less than usual talk as to frost protection of citrus groves, but many orchardists are prepared for cold weather. Pomona, organized as usual, has regular motorcycle patrol, which in time of cold can cover 12 square miles once hourly.

San Bernardino County Farm Bureau is discussing drainage and other problems. Meetings will be held at Highland Center, Jan. 15; San Bernardino, Jan. 17; Redlands, Jan. 18; Summit, Jan. 21; Lucerne, Jan. 25; Barstow, Jan. 28; Bloomington, Jan. 30.

San Bernardino had a big poultry show the week ending December 22. The grand gold sweepstakes for display, \$50 in gold, went to the Hocking Poultry Farm of Los Angeles; second prize, \$30 in gold, to Mrs. Ben Davis of Cucamonga; \$20 gold to Mrs. E. B. Martin of Downey.

## The Coast and General

New Zealand is importing wheat from Australia.

Josephine County, Oregon, recently held a corn show.

Umatilla County, Oregon, will soon have a county agricultural agent.

Franklin County, Washington, has decided to secure the services of a county agriculturist.

The Western Dairy Products show will be held at North Yakima, Washington, February 28-March 2.

Omak, Washington, has shipped out 291 carloads of apples this season, orchardists receiving \$144,000.

Apple growers of Yakima, Washington, are shipping 20 cars of apples to American soldiers in Europe.

The number of horses for agricultural work have greatly increased in England during the past year.

A cooperative creamery at Carlton, Oregon, has been equipped for the manufacture of cottage cheese.

North Yakima, Washington, will have a municipal pig farm where hogs will be fattened on city garbage.

Nearly 30,000 tons of beets were delivered during November to the sugar factory at North Yakima, Washington.

Belgium has given to General Pershing 600 locomotives for transporting supplies from the water front to the trenches.

Farmers of Washington are maintaining a market at Camp Lewis. One consignment consisted of an entire car of carrots.

A wheat convention was held at Pullman, Washington, January 3-5. Grain standards and cultural points were thoroughly discussed.

Hereafter only five pounds of sugar per family and from 25 to 50 pounds of flour, according to family, is the food administrator's ruling.

Owing to war demands for ammonia, the country is appealed to to harvest and store all the ice possible. Nothing doing in California.

English feeders are suffering because of the scarcity of cotton seed. There are thousands of tons already purchased and in Egypt, but shipping is impossible.

The "Oregon Farmer" is authority for the statement that with all crops except apples Oregon is behind her last year's production. This is because of unusual weather conditions of the early spring.

At a recent meeting of the Deschutes Valley, Oregon, potato growers' association, reports made brought out the fact that there are 50,000 sacks of potatoes stored in warehouses in central Oregon.

The extension school held by the University of Arizona in the Yuma Valley brought out exceptionally large attendance. The handling of livestock, cotton and alfalfa were the principal subjects considered.

Farmers and housekeepers' week at the university of Tucson, Arizona, will be January 14-19. The state council of defense and the food administration will cooperate with the university in the activities of the week.

New regulation has been made governing the use of food materials for making distilled spirits, in effect that no grain other than of inferior quality shall be used for making distilled spirits for any purpose whatsoever.



## Kings County Breeders' Directory

### Big Type Poland Chinas

Won Grand Champion Sow at State Fair  
Won Reserve Champion Boar at State Fair  
Won Grand Champion Sow at Hanford  
Won Grand Champion Boar at Hanford

**Wm. Bernstein**  
HANFORD - CALIFORNIA

### HOLSTEINS

32 Females

Herd Sire Juliana De Kol King Segls  
Grand Champion Kings County Fair  
CHOICE BULLS FOR SALE  
**A. B. COMFORT - Guernsey, Cal.**

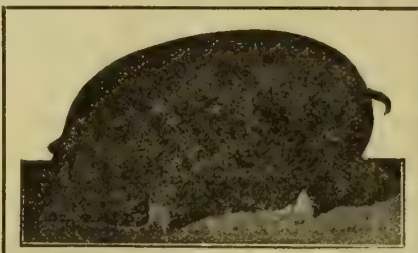
### The Little Kingdom of Kings

Kings of the soil and the products thereof,  
till the lands of rich Kings County

## Poland Chinas, Medium Type

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize winning strain. 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

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Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

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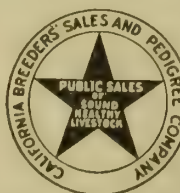
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**California Breeders' Sales and Pedigree Co.**

C. L. HUGHES, Sales Mgr., SACRAMENTO, CAL.  
Col. Ben A. Rhoades, Auctioneer, Los Angeles

## Who's Who

With the issue of August 11 the Cultivator started its series of "Who's Who" articles to bring before its readers some of the livestock producers of California who are responsible for the large development of the industry. Where did they come from and how long have they been engaged in California development, also how do they look, so pencil and camera are to be used, and some homely, everyday photographs and notes regarding them will bring us closer together. Bear in mind we say "homely photographs" and not photographs of homely people. The idea we wish to convey is that so far as possible we will secure photographs in everyday surroundings at the homes of the livestock producers.

Written for California Cultivator By F. F. Stonerod

H. H. GABLE



ANY young men who have inherited large country estates either dispose of them as soon as possible or rent them out to be impoverished.

H. H. Gable, of Esparto, Yolo County does not belong to that class.

Educated in preparatory school and



H. H. Gable

college by a wise father, Mr. Gable immediately returned to the ranch

and assumed charge of its affairs. There were thousands of acres of range land and a good many hundred acres of farm land on the Gable estate, and to farm it all scientifically requires more than ordinary ability.

The elder Gable always fancied beef cattle, horses, and mules, and the son has continued that policy except that instead of registered males and grade cows he has founded a pure bred herd of Hereford cattle which in time will rank with the large ones in California.

Mr. Gable is a Hereford enthusiast, so much so, in fact, that he was recently elected president of the Pacific Coast Hereford Breeders' Association. To show the quality of the man it may be mentioned that he took two or three head of young Herefords over to the state fair this year, knowing that they were not in show shape and that it was not possible to fill out a full herd. He wanted to have as large representation of the breed on hand as possible.

Mr. Gable is a director in the Woodland bank and also in the Yolo County fair. He is president of the county board of trade and takes an active part in anything which is for the encouragement and upbuilding of the community.

## Does It Pay to Feed Alfalfa Fresh and Green From the Field?

Written for California Cultivator By J. M. Bomberger of Green-Gold Ranch.



ONE morning in May of 1904 while I was working in a small vineyard which I had rented my neighbor "spoke across the fence" from his alfalfa field where he was looking for bloat among his cows and complained to me that even though he owned his 60 acres of excellent alfalfa land and thirty cows, he found dairying very arduous and a losing game, and incidentally stated that if he had a good opportunity he would rent his ranch and sell his cows. He did not consider me as a possible applicant as I was very young and had less than a year before come from office book-keeping to the farm and had a very limited experience at farming.

During my short farm life I had, however, read farm papers and bulletins with an appetite and had studied Henry's Feeds and Feeding, King's book on the Soil and King's Physics of Agriculture, and had just lately been enjoying Frank Peer's book on Soiling Dairy Cattle.

The result was that within 24 hours I had persuaded that neighbor to rent his ranch to me and to sell his cows and necessary implements to me, taking a promissory note as payment. His system had been to feed his cows by pasturing and making hay of what little alfalfa the cows did not eat, and by that method he could not save enough hay for winter feed, and even though he had no rent nor interest to pay, he found dairying a losing game.

My freshly read book knowledge coupled with my youth and lack of experience filled me very full of enthu-

siasm for the work. I at once enlarged the cow corral, built a feeding rack and began soiling instead of pasturing. By soiling I mean cutting the green alfalfa and feeding the green alfalfa to the cows in the feeding rack in the corral. I also at once secured a milk scales and a four bottle Babcock tester and put it up to the cows to "do or die."

I sold seven cows to the butcher. The remaining cows produced more under the soiling system than the entire herd had produced by pasturing. I had saved enough surplus hay by fall to winter feed my cows and had enough left to sell to pay my rent. My wife and I did the milking without hired help, and in 11 months we were out of debt. That was our first step toward the ownership of our present ranch in the Wood Colony near Modesto where we still live and keep cows, but during the last seven years we have done very little of the milking ourselves.

All this is preliminary to the fact which I wish to impress that it is more economical and practical to feed a herd of 25 cows or more by soiling than by any other method that I have yet found.

I have carefully estimated that an acre of alfalfa cut and fed to dairy cows fresh and green is at least ten per cent more efficient for milk and butter fat production than the same acre fed in the form of hay, and it costs less to put the green alfalfa into the feeding manger than the same alfalfa in the form of well cured hay.

On my ranch the mower and rake



are left in the field from day to day during the growing season. To get feed for the cows one man will hitch two horses to the wagon, drive to the field, hitch to the mower and cut enough for one day or two, then hitch to the rake and rake and bunch it, then hitch to the wagon and load the grass without anyone on the wagon and haul it directly to the manger where it is fed from the wagon in three feeds a day.

The labor to secure one day's feed for 30 cows requires on an average not more than one and a half hours all told, or two and a half hours for two days' feed. We bring in two days' feed during cool weather in spring and fall and on Saturdays.

To feed it in the form of hay it must be mown, raked, carefully shocked, then two or three men must drive to and from the field instead of one. A man is needed on the wagon as loader. The hay must be stacked or put into the barn, which is expensive. Cows will not do well on hay direct from the field, especially in mid-summer. The hay must be cured in the mow or stack. Later the hay must

be taken from stack or mow to the manger. The handling of hay causes loss of leaves and fine stems and even at best the hay is ten per cent less efficient than the same alfalfa fed green.

Many times during wet spring or fall weather I have noticed dairymen scattering and turning half spoiled alfalfa trying to make hay and later feeding half spoiled hay to their cows for months, while my cows ate fresh green alfalfa from the middle of March to Christmas regardless of the weather.

Another consideration is that when my alfalfa is taken off the same day it is cut, the new growth is left to grow at once unmolested by being covered by swath, windrow or shock or by driving over and crushing the young growth after it has had a week or ten days start as is the case in hay making.

We, of course, make hay of the greater part of the alfalfa which we do not need for soiling as we must have hay for the winter months, and we always have a surplus of hay for sale.

## Canning Meat

**S**O MANY demands have come from all over the country for practical methods of canning meats that much experimenting has been done. We give below directions sent out by the state college of New York:

### Method 1

Free the meat from the bone, and cut it in pieces of such a size that they will go into the jars easily. Pack the raw meat solidly into tested clean jars, filling the jars to within three-fourths inch from the top. Sprinkle over the top of the meat one-half teaspoon of salt for each pint of meat. Add no water. Celery leaves, onions, pepper, or other seasonings may be added if desired. Adjust on the jar a new rubber of good quality. Place the cover on the top of the jar, and adjust, but do not fasten, the upper wire clamp, or if a mason jar is used, partly screw on the cover. Place the jars on a rack in a tightly covered container, such as a wash boiler or a sap bucket, in which there is warm water that reaches to within about one inch from the tops of the jars. Sterilize the meat by cooking it for from four to five hours, beginning to count the time when the water around the jars reaches the boiling point. A steam cooker is particularly convenient for this process, and a pressure canner reduces the sterilization period, but a wash boiler or a sap bucket answers the purpose satisfactorily. Before removing the cans from the sterilizer, complete the sealing of each jar by adjusting the lower wire of the clamp or, in the case of a mason jar, by screwing the top tight. Keep the jars in a cool dark place.

### Method 2

Sear the meat in a hot oven, in hot fat, or in boiling water, and steam it or simmer it until it can be torn apart. Pack the meat into the jars, fill the space with stock, and add one-half teaspoon of salt to each pint of meat. Sterilize the meat for three hours as in Method 1. Unless the meat is first browned, it does not have so good a flavor as that of raw meat steamed in the can.

### Canned Chicken

Chicken may be successfully canned by either of the two methods suggested. Canning surplus cockerels that

chickens should be covered with cold water, salted, and slowly simmered until the flesh drops in shreds from the bones, and the liquid, or stock, is concentrated. Seasoning, such as onion and a bit of celery leaf, may be added. Strain the stock, if desired, reheat it, and boil it for ten minutes. Pour it into sterilized jars, and sterilize it as described under Method 1 for one hour on each of two successive days.

### DON'T WASTE STRAW



BURNING straw is like burning money for straw means money to the man who knows how to use it. Nevertheless 15 per cent of our straw is burned and 22 per cent more is disposed of in more or less unprofitable ways. Only about two-thirds of the crop is fed to live stock or used as bedding, although these are the real ways to turn it into money.

Large amounts of roughages are necessary to the economical feeding of cattle and there is no more efficient way of utilizing them than this. Straw lessens the need for expensive concentrates and when marketed as meat brings greater returns than are likely to be obtained by disposing of it in any other form. Indirectly the gain in soil fertility is enormous. There is no system of obtaining permanent soil fertility which equals in practical advantages the feeding of live stock. The plowing under of straw adds little more humus to the soil than manure and it does nothing else of value.

Burning straw means an almost total loss. The ashes, it is true, carry a certain amount of mineral matter into the soil, but the quantity is too

small to exert any appreciable effect. The usual explanation of the practice in those sections where it is followed is custom. But because straw has been wasted in the past is no reason for wasting it now. Feed it or use it for bedding. If circumstances actually make the keeping of meat-producing animals an impossibility, plow it under. Never burn it.

### HIGH FEEDING VALUE IN TANKAGE



WITH concentrates mounting ever higher, and with even roughage commanding almost former concentrate prices, the hog feeder is confronted by a serious problem. Naturally he is turning in every direction. Barley and the sorghums are proving very satisfactory, and last year saw the state's greatest production of the sorghum grains.

Many are feeding tankage, packing house waste product, which is proving especially satisfactory where protein feeds are scarce. In any case tankage is worth more attention than it receives from the average stock feeder. The hog is naturally a meat eating animal and in supplying the elements contained in tankage it is an especially appetizing and satisfying addition to the rations.

Brood sows may well be fed a portion, as it increases their vitality and lessens loss at farrowing time. Pigs learn to eat it and thrive phenomenally. State experiment stations have shown that sows given a balancing ration of tankage during the period of gestation will farrow pigs which are 10 to 25 per cent heavier, also much healthier, and such pigs when given tankage will grow more rapidly into hogs, maturing four to six weeks earlier than pigs not fed on a ration properly balanced.

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Pacific Coast Hereford Cattle Breeders Association

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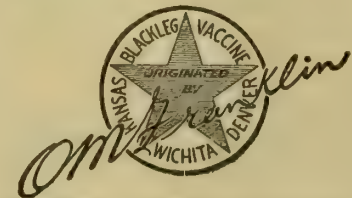
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## Field Notes from the Live Stock Men

Notes from Many of California's Live Stock Pastures. Personals as to Breeders and Breed

Kansas hog population has decreased 17.3 per cent in the last year.

Growers in the corn belt are, as a rule, planning to sow more largely to spring wheat.

The dressing percentage of Merry Monarch, the grand champion at International, was 64.7.

Stockmen of Alberta, Canada, are planning for a series of spring stock shows and sales in April.

Montana's wool clip for the last year is 18,200,000 pounds, exactly 2,000,000 pounds short of last year.

The showing of draft horses at the recent International, from the breeders' standpoint, was by far the finest ever made.

The food administration has fixed price on car lots of cold storage eggs from Chicago at not exceeding 41½ cents per dozen.

The Chicago hog market is somewhat uncertain, the high point being around 17¼ cents, with the average 17 cents and under.

The Daniels and Owens sale of Shorthorns resulted in Village Pride, the top notcher, going at \$1,800, going to Flinton, Kansas City.

Secretary Houston says there must be fuller utilization of the labor now in this country, and that the department will cooperate in transferring seasonable labor from one section to another.

The Christie sale of Herefords at Wood Lake, Minnesota, was held during weather which was below zero, and an average of \$435 on the 66 head sold is reported. A yearling bull was the top notcher at \$2,500. The top notch female went at \$975.

N. M. Lester, Gridley, reports the sale of registered Poland-Chinas to George P. Alf, Colusa, two gilts; L. A. Sturdevant, Sultana, boar; Louie Mitchell, Tipton, boar; H. Jameson, Plymouth, boar; Hillman Willard, Red Bluff, gilt; C. M. Ruggles, Guinda, gilt.

F. H. Everson, manager of the Lake Mills Holstein Breeders Consignment Sales Company, announces the spring sale of this great Wisconsin institution to be held at Lake Mills, May 1 and 2, 1918. There have been some wonderful Holstein sales at Lake Mills, and breeders are naturally looking forward to the coming event with interest.

Dr. Bert J. Cady, for many years doing special work for the Bureau of Animal Industry, U. S. D. A. in California, has been transferred to the same kind of work in New York state, at Cornell University, Ithaca, New York. Mr. Cady has done much valuable work in California and we regret to see him leave and wish him success in his new field. He will be succeeded in California by Dr. A. J. Payne, formerly of Kentucky, who will be stationed at the University of California, at Berkeley. Welcome.

Frank Reed Sanders of Arizona, writes appreciatively of the excellent Arizona number of the California Cultivator issued after the recent state fair. Regarding his recent sale of pure bred Holsteins, he says there were several hundred people at the sale. Twelve head averaged \$403. The champion bull brought an even thousand dollars, a first prize yearling heifer \$675, junior yearling heifer and junior champion \$600. The average for the entire 45 head sold during the day was \$300. Mr. Sanders adds "people want Holsteins of quality."

Sales of Poland-Chinas reported by R. H. Whitten are: Service boars to J. W. Brown, Tejon Ranch; D. S. Llewellyn; L. C. Mullis, Alfred Mathews, Nevada; C. A. Rives; Alvin E. Weaver; bred sows and gilts to H. N. Colver; P. L. Buckheim; A. R. Doctor, Mrs. Nettie Douglas, J. C. Groupe; J. W. Kingry; W. E. Levee; C. K. Loe, Oregon, Dr. W. R. Livingston, L. C. Mullis, L. J. Popp, Mrs. Viola L. Renwick, Elmer C. Rutherford, Mrs. E. Raspipe, Frank H. Sharp, Mrs. S. M. Smyser; weaned pigs to L. C. Mullis, Frank H. Sharp, Elmer C. Rutherford, S. M. Smyser.

## A Wonderfully Bred Bull

The first bull in the world to have an average of over 1000 pounds butter in one year for his seven nearest dams was dropped in the herd of A. W. Morris & Sons Corporation, Woodland, on December 27. He is out of Aralia De Kol Pontiac Mead, the California state record senior 2 year old that recently completed a record of 934.25 pounds butter in one year, and he is sired by Sir Aaggie De Kol Acme, son of Aaggie Acme of Riverside 2nd, 1331.41 pounds butter in one year on strictly official test, a world's record, and 2426.51 pounds butter in two years, also a world's record. Thus this youngster has the following as his seven nearest dams, Aralia De Kol appearing twice:

Aralia De Kol Pontiac Mead, butter in one year at two and a half years of age, 934.25 pounds. Aaggie Acme of Riverside 2nd, butter in one year at six years of age, 1331.41 pounds. Aralia De Kol Mead, butter in one year at two and a half years of age 870.61. Aralia De Kol, butter in one year at 11 years of age 1142.32. Aaggie Acme of Riverside, butter in one year at six years of age 808.82. Riverside Sadie De Kol Burke, butter in one year at 8

years of age 1085.12. Aralia De Kol, butter in one year at 11 years of age 1142.32. Total, 7114.85. Average for seven dams 1016.40.

It will be noted that this average includes the two year old records of the dam and her dam. The latter, Aralia De Kol Mead, is now well along on a yearly test and barring accident will finish something above 1100 pounds butter, while the dam of this bull and Aaggie Acme of Riverside 2nd are both likely candidates for higher records, all of which gives this royally bred youngster a richness of inheritance that has so far never been equalled.

To wash milk utensils properly they should be rinsed as soon as emptied, as the cleaning can be accomplished better than when left for several hours before washing. Lukewarm water unites with the milk readily and is preferable to cold or hot water for rinsing. Hot water will cook the milk upon the vessels.

By furnishing plenty of meat and fat to our Allies the great American hog can fight quite as formidably as his wild-boar ancestry.



# Real Food Conservation Calls for a Silo on Every California Ranch

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2-meat  
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**D**AIRYING is one of the big industries of California. Now, more than ever, the people need dairy products in order to save the meats, the grains—foods needed to win the war.

“Less grain is available for feeding to cattle,” says Bulletin A 1.23 of the U. S. Dept. of Agriculture. “For much more is needed now for human food, and the emergency demands that every effort be made for conservation.”

“Milk production must be maintained, hence every effort should be made to substitute other feeds for grain in the dairy ration. To do this, the silo will help. . . . With silage in the ration, dairy cattle can be kept in the condition of health common to animals on pasture. . . . The silo at all times, and particularly now, offers to the farmer one of the best means of reducing his feed bills.”

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# INDIANA SILO



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### Special Early Buyers' Discount

Now is the time to order your silo, for we are making our special discount to early buyers now. Write for the Indiana catalog — filled with experiences of Indiana owners on the Pacific Coast—how it made money for them! Use the coupon below! Do it now before you lay this issue aside.

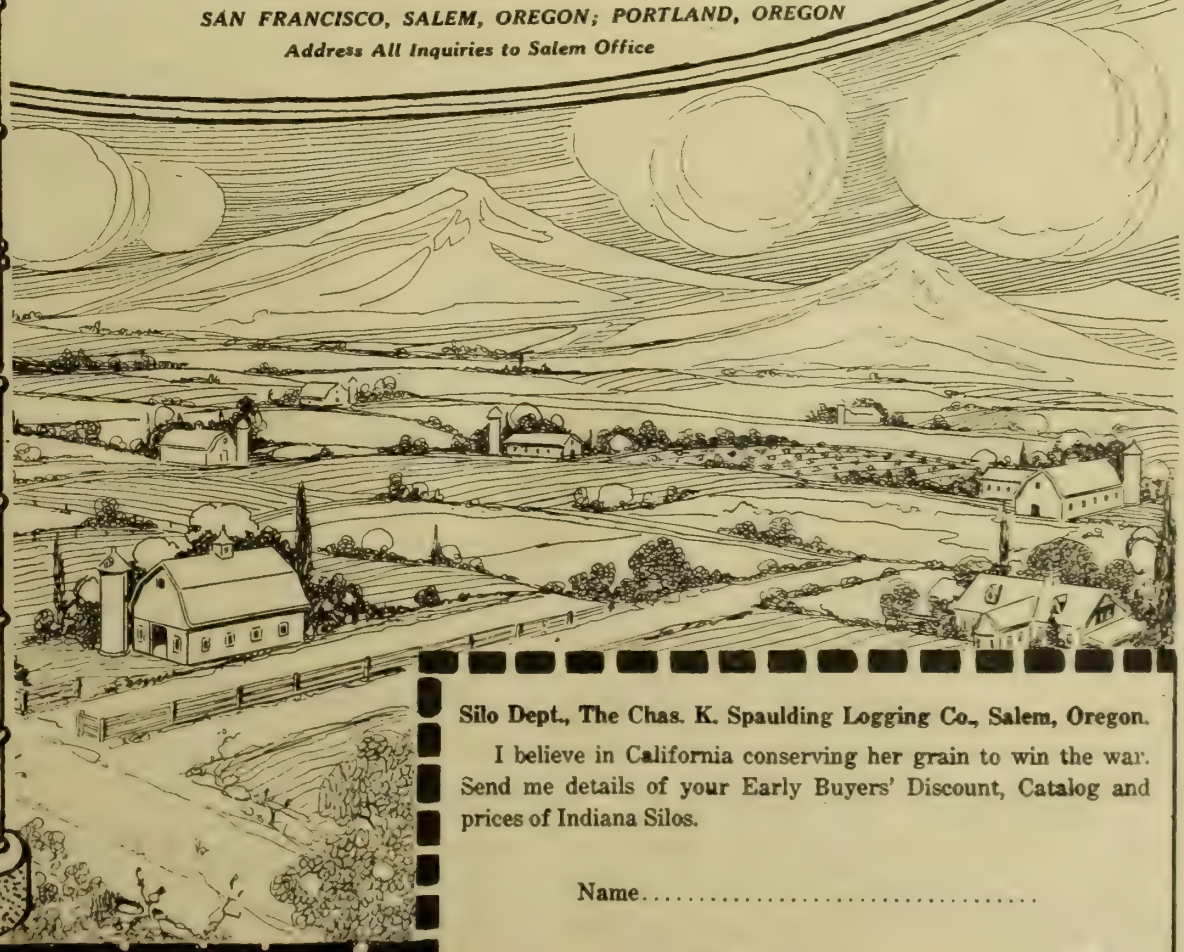
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Imported by us direct from China, where its merits have been appreciated for many years. These beans are bug-proof and thrive almost anywhere. Not affected by frost. Invaluable also as a cover crop. Can be planted for their forage and later turned under for green-manuring.

Per lb., 10c; 100 lbs., \$7.00. Write for prices on large quantities. SEND FOR OUR CATALOG OF FORAGE AND COVER CROPS, POTATOES, ETC.

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All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

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## Reducing Losses From Hog Cholera



ALTHOUGH hog cholera can not be completely eradicated from the United States under present conditions, losses from the disease can be materially reduced by education and organization of hog raisers in the application of proper sanitary measures and the proper treatment of hogs with anti-hog-cholera serum. This has been shown by the results obtained by the bureau of animal industry of the United States department of agriculture in experimental work in hog-cholera control carried on in a number of counties during the past four years.

### Hog Raising Thrives Under Control

One of the important results is the fact that the work, while effective in reducing the disease, was not repressive while in progress on the hog-raising industry. On the contrary the industry thrived in the experimental counties to a greater degree than in adjacent counties in which no control work was under way.

Actual statistics were taken in the experimental counties and careful estimates were made in the adjacent counties. These show that in one group of three counties where the control work has been under way four years, the percentage of loss from hog cholera has remained constantly from one-quarter to two-fifths the percentage of loss in the 15 surrounding counties. In another group of experimental counties the average percentage of loss as compared with that in 18 surrounding counties was reduced from approximately nine-tenths in 1913 to less than one-third in 1914 and to about one-sixth in 1915.

### Community Needs in Combating Cholera

Specialists who have supervised the

control work of the department reach the conclusion that while the eradication of hog cholera can not be expected for a considerable time, the material reduction by the use of serum of the enormous losses which annually are caused by the disease is entirely

## Big Records at Hollow-Hill

G. W. Wilder's Hollow-Hill Farm at Redlands has recently accomplished a unique feat in cow testing with two four and a half year old Guernseys, Imp. Cherry III of the Effards 48381 and Imp. Brittleware Mistletoe 48510.

A little over a year ago these cows dropped calves within a few days of each other and both were placed on Advanced Register test at practically the same time. They have been barn mates during the year and both made records which are high enough to entitle them to be placed among the ten best cows of their age in the breed throughout the United States and to be called class leaders. Imp. Cherry III of the Effards made 15,566.6 pounds of milk and 735.2 pounds of butterfat while Imp. Brittleware Mistletoe made 14,467.2 pounds of milk and 751.4 pounds of butterfat.

Imp. Brittleware Mistletoe will probably place seventh among the class

practicable. The essentials for success in combating the disease, they point out, are interest on the part of hog raisers and knowledge of the disease; organization which will facilitate exchange of information as to outbreaks and secure assistance; serum at reasonable prices and easy of access; and the available service in the community of persons skilled in administering serum.

ords for the United States will be held in California as a number of them have been made here, where the cows have ideal conditions, within the last year. Also some of the finest Guernseys to be found anywhere are now in California.

The record by months follows:

Imp. Cherry III of the Effards			
November	692.2	31.56	
13 days			
December	1403.0	63.98	
January	1277.3	57.10	
February	1132.3	54.58	
March	1377.6	61.99	
April	1363.1	56.04	
May	1357.3	65.42	
June	1327.1	62.24	
July	1207.3	62.90	
August	1295.1	60.87	
September	1194.6	58.54	
October	1288.3	65.06	
November	651.1	34.89	
17 days			

Imp. Brittleware Mistletoe			
December	1475.9	67.30	



Imp. Brittleware Mistletoe 48510

leaders and Imp. Cherry III of the Effards would be tenth if her record was stopped at this time. During the past year the American Guernsey Cattle Club has established another series of classes called the double letter classes in which the cow is required to carry her calf for 265 days of the time she is on test. Cherry has been doing so well that it was decided to continue her for a double letter record. To do this the first part of her record will be discarded and only the last 12 months will be counted. It is expected that her BB record will be about 700 pounds of butterfat which will entitle her to first place in her class and possibly in all the double letter classes, irrespective of the ages. On the day she had been in milk one year she gave 43.4 pounds of milk testing five per cent. She was the first-place cow in the State Dairy Cow Competition for November, 1916 with 1577.4 pounds of milk and 77.3 pounds of butterfat.

Both cows were steady in their production and no re-test was ordered in either case. They are tested by a number of different men from the University of California and by a special tester from the Oregon Agricultural College.

There are now three cows at Hollow-Hill Farm with records ranging from 723 pounds to 751 pounds. It is probable that it is only a question of time until the most of the high rec-

January	1510.7	72.36
February	1352.1	70.17
March	1406.0	67.91
April	1244.1	57.48
May	1268.1	70.63
June	1190.3	62.01
July	1242.4	62.12
August	1059.1	65.24
September	942.8	56.29
October	943.3	53.01
November	832.4	46.80

### PLANS AND SPECIFICATIONS FOR FARM BUILDINGS

The agricultural extension division of the University of California is issuing a list of blue prints showing plans of barns, poultry houses, silos and other farm buildings. The list may be had for the asking by writing to the university at Berkeley, and once one has indicated the type of building desired the division will send the specifications and blue prints which are loaned and to be returned on completion of the building.

For instance, for dairy cattle barns there is a California type of milking barn with 30 stalls, spaces for feed and machines, details of framing and stanchions. Then there is the California milk house, 12x18 for a 30 to 9 cow dairy. This is of frame and concrete. There are six sheets in this last set of plans. Then there are plans for general barns for swine, horses, sheep, sheds, and feed racks, for poultry houses, for implement sheds, silos and others.

Dairymen and cattle feeders have no better lookout from which to view their feeding operations than the sil-

## Santa Anita Rancho

Anoakia Breeding Farm

**ARABIAN THOROUGHBREDS:** Two-year-olds, sired by Imported Stallion Ibn Mahruss, head of our Arabian stud. Dams are the choicest thoroughbred mares on Santa Anita Rancho.

**SADDLE HORSES:** Some of which were sired by Ibn Mahruss, world renowned imported desert saddle stallion, and Don Castano, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

**POLAND-CHINA AND BERKSHIRE BOARS:** Four to nine months old. Sired by famous Poland-China herd boars, Banker's Boy and Glenview Wonder. And Berkshire boars, Kintyre Laird, Grandson's Duke and Fashion's Longfellow 5th. The dams are from the best blood lines. Most all these animals have winnings at World's Fair. Write for catalogue.

**HOLSTEINS:** We will sell a number of young bulls. Some sons and grandsons of the noted State Record Cows. Write for details.

Correspondence Invited

Anita M. Baldwin

W. H. TAYLOR, Superintendent

Santa Anita, Cal.

## Hollow-Hill Farm Guernseys

We are offering some bull calves from 4 to 8 months old out of Imported and A. R. Cows and by

### KING OF HOLLOW-HILL 25876

The sire is a son of Itchen Daisy's May King of Langwater, which was recently sold to a California breeder for the record price of \$8000, and of Caroline of Chilmark 24812 which has just finished an A. R. test with 15,185.9 pounds milk and 722.97 pounds butter fat.

King of Hollow-Hill combines the May Rose blood of Imp. Itchen Daisy III 15630 and Dolly Dimple 19144 with that of Imp. Mashers Galove 8572, Imp. Corn's Governor of Chilmark 8971 and Governor of the Chene 1297 P. S.

The prices on these calves are reasonable.

212 R. F. D. 1 HOLLOW-HILL FARM COLTON, CAL.

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GIVES GREATEST VALUE FOR LEAST MONEY  
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**For** — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Bolls, Corns and Bunions. CAUSTIC BALM has no equal as a Liniment.

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**Rheumatism**  
**and all Stiff Joints**

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills." OTTO A. BEYER.  
Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.  
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

## Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

### Milk Fever

We have a good cow but when she came fresh this fall with her fourth calf she got very sick. Before this when she came fresh her udder would be red and swollen but this time that was not the case. I gave a pound of salts before and always give another the next day after calving. The cow seemed all right during the day but next morning was down and with her head turned to the side. She could not get up. We called a veterinarian. He made three visits and each time pumped her udder full of air. She does not seem quite as good as before. What we want to know is how to prevent this sickness recurring when she comes fresh again.—Subscriber, Orange.

Some cows that give a large quantity of very rich milk are inclined to have milk fever at calving time in spite of all that can be done for them. The dose of salts given a day or two before generally prevents it. Some dairymen have adopted the practice of feeding their cows very lightly for a month before calving and in that way have nearly eliminated the trouble from their dairies. It is good practice to feed a cow sparingly for some time before coming fresh and for a week or two after, gradually increasing the feed and getting up to the highest amount about a month later. Cows have become veritable milking machines but there is a limit to their capacity and endurance.

### Vaccination for Abortion

Is vaccination for preventing abortion a success? I have been told that calves, yearlings and the cows should be vaccinated. Will it prevent the disease in a cow that has aborted once? How close to calving time can it be done and how long does it protect them? Also how expensive is it?—Subscriber, Visalia.

Vaccination for preventing abortion has not been practiced long enough to fully determine just how reliable it is. It does not seem necessary to vaccinate young stock until four or six months before coming fresh and not later than one month before. It is not necessary at all unless the disease is established in the herd. It is claimed to cure as well as prevent. When a herd is free from it there is no use vaccinating until some cow should abort and if that is due to an accident there need be no fear that it will affect the others. Sanitary measures are important and that alone is usually enough to prevent the spread of the disease. The expense depends entirely on your veterinarian and the distance he must travel to reach your place. The expense is not great to him so it depends mostly on what he values his time worth.

### Strangles

About a month ago I noticed a swelling at the throat on my three year old mare. It extended up to near the ear and along the jaw. It broke inside and we lanced it in several places outside to help it drain well. The discharge was somewhat offensive and mixed with blood. We have washed it out daily with a pine tar disinfectant and later with crude carbolic acid. The original cuts have healed except the one at the throat. Several other abscesses have formed up about the ear, and we have treated them as the others. Lately the discharge is white and thick. We are not working her. Are feeding alfalfa hay, rolled barley and some tonic powders. What is best to do for her?—Subscriber, Nestor.

The disease is called strangles by

the profession but has been called colt distemper by most people for a long time. It is contagious and most horses have it while young. Some escape and may have it any time later. Those that discharge the most pus from the abscesses usually make the best recovery. The abscesses usually gather about the head but sometimes gather just in front of the shoulder or in the groin. I am inclined to think that you are using the disinfectant too strong in washing out the wounds. Better use pure carbolic acid and put very little in the water. Feed the colt liberally to keep up the physical forces. Half an ounce of the tincture of iron in a pint of water given as a drench once a day for a week is a good tonic to hasten recovery. It may be that some barley beads have worked down into the abscess and in that case the wound should be well scraped out and examined to see if any pockets have formed.

### BUY A PIC

If you want to burn the road,  
Buy a pig.  
If you want to raise the load,  
Buy a pig.  
O, he's little, but he's wise,  
He's a terror for his size,  
And he's quick to advertise—  
Buy a pig.  
If you want the cheapest board,  
Buy a pig.  
If you want to own a Ford,  
Buy a pig.  
He is solemn but he's fat,  
And he knows just where he's at,  
And he always comes to bat.  
Keep a pig.  
He makes sausage, ham and sich,  
Pickled feet and bacon flitch,  
And he makes his owner rich.  
Keep a pig.

—C. L. Bray in Yorkshire Swine Journal.

Everett C. Brown, president of the Chicago Livestock Exchange, recently issued a statement declaring that the corn promise is so great that without war demand the farmer would be lucky to get 40 cents per bushel for the 1917 crop. He asks the farmers to consider the following:

The supply of cattle and hogs is alarmingly short; there will be fewer to feed. The feeding of meat animals is the greatest industry in the country. It is facing a crisis. Not only here but elsewhere meat is short. Europe is depleted, swept clean of its meat animals. It is bare of livestock. There is grave danger that the corn market will go to smash, and at the same time meats, far higher than ever before, will bound to unprecedented prices. Farmers should think this situation over with utmost seriousness.

A Pennsylvania dairyman claims the record for a Jersey which will be six years old next May. On October 24, 1914, she had her first heifer, the mother not being 22 months old. On January 29, 1915, she had another heifer calf, a third one on December 13, a fourth on November 8, 1916. She had a fine big bull calf on October 8, 1917.

The oldest heifer will be fresh in November with her third calf. The second heifer will be fresh in November with her second calf, and the third heifer which will be two years old on December 13 will be fresh at Christmas time.

"The greatest material problem is to bring about the adoption of a system of farming that will restore, increase, and permanently maintain the productive power of American soils."—Dr. C. G. Hopkins.

The use of a weak solution of nicotine in dipping scabby sheep and cattle is approved in an order issued by the secretary of agriculture. This dipping solution differs from that hitherto required, by the elimination of sulphur.

## CUTTER'S BLACKLEG PILLS

"California's Favorite"  
for nearly 20 years

For the Prevention of Blackleg  
in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Scrums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest,

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10 dose pkge. Single pills \$1.00  
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10 dose pkge. Double Pills 1.50  
50 dose pkge. Double Pills 6.00  
Cutter's Pill Injector.... 1.50

Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago  
Eastern Agent

## One Half Bottle Earned Him \$50



READ Mr. McLean's letter. See how one-half bottle of Kendall's Spavin Treatment earned him \$50. The other half of the bottle may earn him even more. Many men make a business of buying lame horses and restoring their soundness with Kendall's. Then they sell at a big profit. How about your horses? Why not get a bottle of

## Kendall's Spavin Treatment

Known For 40 Years as Kendall's Spavin Cure

and be ready to relieve cases of Curb Spavin, Splint, Ringbone, Bony Growth or lameness from bruises or other causes? Thousands of other Farmers are doing it—have been doing it for over 40 years. It's the old, safe remedy you can depend on. Get a bottle at once and see how much it will save or make for you. A drug costs \$1.10 a bottle; 6 for \$5.50. Ask your druggist for book, "Treatise on the Horse," or write to DR. B. J. KENDALL CO., Enosburg Falls, Vt.

Port Wood, Nova Scotia.  
Dr. B. J. Kendall Co.  
Gentlemen: Last fall I bought a mare that I got cheap on account of joint. I tried your Spavin Treatment and a half bottle removed it. That half bottle earned me \$50.00. Very truly yours,  
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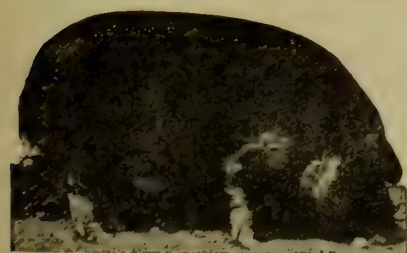
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Registered young bulls from best families.

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Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

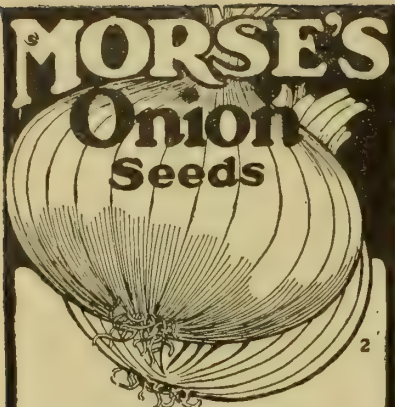
Visitors welcome — information cheerfully given.

## T. T. Miller

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yield best when planted in December and January. They will do well even if planted later, for they are field-grown and soil-tested—strong and hardy—full of germinating power.

Onion seeds are no good if more than a year old. When you buy Morse's Onion Seeds you are sure of getting fresh ones grown on the Morse farms. The same high quality found in these onions is found in Morse's other seeds for field and garden—from every day kinds to the choicest—by the dime packet or carload lot.

This year of all years, when prices for your farm products will be so high, you can't afford to gamble with poor seed. Buy Morse's and be sure of the best. Write now for quotations on onions, alfalfa, and other field crops.

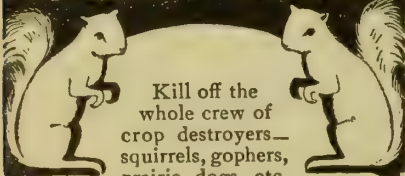
The Morse 1918 Garden Guide is ready—accurate information about seeds, planting, culture and vegetables. Your copy will be mailed free upon request.

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At the recent San Francisco Land Show Everett Holliday of Ukiah, California, won the first prize for onions grown from Morse's Seeds.

## Gas 'em!



Kill off the whole crew of crop destroyers—squirrels, gophers, prairie dogs, etc.

Gas 'em with Carbon Bisulphide quick'y, easily and economically.

One burrow of squirrels will destroy more grain than your family can save in fifty wheatless days. Remember—these ground pests cost the farmers of the Pacific Coast more than \$6,000,000 last summer. So be forehanded—be truly patriotic—conserve the seed in your fields.

The University of California says: "From November until the end of February (the rainy season in California) the best way to attack the ground squirrels is to fill their burrows with gas from Carbon Bisulphide."

So too in other states! If the ground is full of moisture, whatever the month may be, Carbon Bisulphide is the best killer of squirrels, prairie dogs, gophers, etc.

A squirrel killed before March is worth a dozen killed later. Because—most young squirrels are born late in March or early in April. So—gas the old squirrels now. Write today for prices and interesting folder telling how Carbon Bisulphide—the profit-saver—works.

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### THE CHINESE TAMOPAN PERSIMMON

WE IMPORTED THE PARENT TREES DIRECT FROM NORTH CHINA.

FOR THE FIRST TIME WE HAVE A FEW TREES FOR SALE.

This is the leading commercial persimmon of North China. We believe that it has no rival. Write for descriptive circular and price list.

Imported and for sale by

**K. M. GORDON, Huntington Park, Cal.**

"O Maker of the fruits and flowers,  
We thank Thee for the wise decree  
Whereby these human hands of ours  
In nature's garden work with Thee."

## Dr. Coit Los Angeles Farm Adviser



**D**R. J. ELIOT COIT, professor of citriculture in the University of California, and former resident of Whittier, has been named as county farm adviser and agricultural agent. This comes as a result of the successful organization of a farm bureau in the county by Dr. H. J. Webber of the citrus experiment station at Riverside. The supervisors recently appropriated \$3,500 for the expenses of the farm adviser and his five assistants until July 1, the salaries to be



J. Eliot Coit

The New Farm Adviser for Los Angeles County

paid by the state, university and federal government jointly.

Arrangements have been made for the employment of assistant farm advisers who are trained along different lines so that the various interests in the county will be well cared for. Of course, the farm adviser cannot be a

walking encyclopedia, and no man could hope to speak with authority on more than a few phases of agriculture, but the farm adviser is the local representative of the state experiment station and the United States department of agriculture. He has all the facilities of these great organizations at his call and it is his business to get accurate agricultural information in the shortest possible time and then help the farmer on the land to make effective use of it.

Dr. Coit was born in San Antonio and was brought up in the vegetable gardening business, of which business he has an intimate knowledge. He graduated at the North Carolina State College of Agriculture and later went to Cornell University, where he pursued graduate studies, taking the master's degree, and later the doctor's degree under the tutelage of Dr. L. H. Bailey. After two years of service in the Salt River Valley at the experiment station of the University of Arizona, he came to Southern California and served on the staff of the Pathological Laboratory at Whittier, and later as superintendent of the citrus experiment station at Riverside. For the past five years he has been head of the division of citriculture in the College of Agriculture at Berkeley. He is widely known in Southern California on account of his book "Citrus Fruits," which is recognized throughout the citrus world as the standard work on the citrus industry of California.

The supervisors have provided rooms in the court house for the farm adviser and his staff. After conferring with the directors of the farm bureau and the supervisors, Dr. Coit will go to Berkeley to close up his affairs there. He will take up his duties in Los Angeles about the 15th of this month.

## Fertilizing Asparagus Bed



**A**SPARAGUS is a heavy feeder and needs plenty of available plant food, says George O. Greene, in the Kansas Industrialist. The roots are weakened by the continuous cutting of the shoots and need plenty of nourishment to recover properly.

Barnyard manure is the most common fertilizer. On commercial beds this is usually applied in June, after the crop has been harvested, and again in the fall after the plants have been removed and the ground disked or plowed. Barnyard manure is not a complete fertilizer. Market gardeners, almost everywhere, use some commercial fertilizer in addition on the

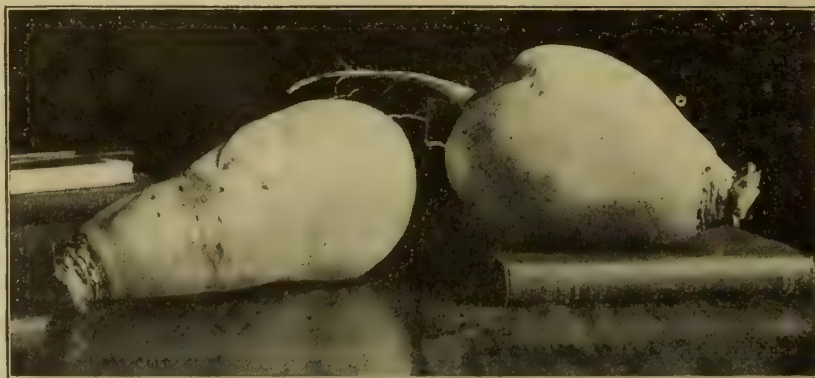
asparagus beds. Some gardeners, in localities where the manure is not easily procured, do not use manure at all, as it has been found that humus is not essential, though it keeps the soil porous, insuring straight marketable shoots. As a complete fertilizer, the North Carolina Experiment station recommends the following:

250 pounds nitrate of soda.

400 pounds acid phosphate.

160 pounds muriate of potash.

This need not all be applied at one time. A part of this amount is usually put on the field early in the spring and the remainder during the growing season. The essential feature in successful asparagus growing is to



Some Radishes

Here is a war garden production, left over from last year. They are the big white type of radishes. The largest one weighs four pounds and the other is shy only two ounces of it. While we would not advise raising this weight of "fruit" for the table, the Cultivator force sampled one of these and "believe me" it was brittle and far better than one would imagine, with scarcely any tough fibre. They were grown on good soil and had plenty of water. Grown by H. P. Wallace, Los Angeles.

Grow a war garden in which are some radishes.

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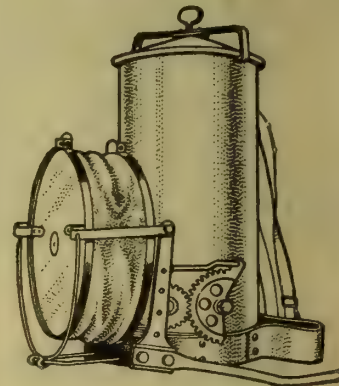
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Company of Los Angeles,  
Issue 25th Annual Book**

One of the largest seed houses in the West, the Aggeler & Musser Seed Company, Sixth and Alameda streets, Los Angeles, are about to give their handsome 1918 catalog broadcast distribution, it being the 25th annual book issued by the Company, and it is claimed to be one of the most complete and valuable books of its kind ever published by a Western seed house.

Among the many new features are departments on Home Garden Work, School Garden Work, Demonstration Garden Work and Field Garden Work. In reality, this year's edition combines several catalogs in one, for it also includes "Garden Manual," and surpasses all previous editions. It contains answers to more than 1000 questions and gives invaluable information regarding all varieties of plants listed and is fully illustrated.

Not only does it tell all about seeds, but gives full information concerning the correct tools and implements agriculturists should use to obtain the best results. There are also marketing notes on each subject, telling how and where to market. Most useful hints are also given on poultry, spraying, fertilizing and the use of insecticides.

The Aggeler & Musser Seed Company will send this descriptive, illustrated and interesting catalog free and post prepaid to anyone writing requesting it.

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Clear your stump land cheaply—no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable.

Works by leverage—same principle as a jack. 100 pound pull on the lever gives a 48-ton pull on the stump. Made of the finest steel—guaranteed against breakage. Endorsed by U. S. Government experts.

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**HAND POWER  
Stump  
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have an abundance of quickly available plant food which will insure a quick and vigorous growth.

Salt is not a fertilizer. It adds nothing to the crop and is, to a large extent, wasted money when it is applied to the bed. It is said to help in liberating plant food, and in that respect might add something to the bed, but not enough to pay for the trouble of application.

### REPAIR INJURIES TO TREES

The dead wood and crowded branches should be removed. Where limbs have to be removed, cut them with a clean smooth cut, and paint the wound over as soon as possible with a tar or lead paint. Cavities should be cleaned out thoroughly, and all the spongy tissue removed; wash the inside with creosote and fill the cavity with a mixture of one part cement and two parts sand. It requires about three hours for the initial setting of cement. Where large branches appear to be breaking down or where, because of a wide crotch, they are splitting apart, the limbs should be drawn together and held in place with bolts and a chain. Do not use a straight iron rod, since this will not allow the limb to sway naturally in the wind, thus either twisting the rod or splitting the trunk.

In the case of soft wood trees, one may top them or cut off the long slender branches. In cutting, do not allow the falling branches to injure the lower branches. In case some are injured, remove them and repair them before they become affected with fungous diseases. Do not leave long stubs. Cut close to the trunk.

Street trees should be pruned to a height of from 10 to 12 feet above ground. If possible, preserve a central leader in shade trees, as this tends to produce greater strength throughout the specimen.

### AIR SLACKED LIME FOR WEEVIL

Here is a new treatment for beans to prevent depredations of weevil: They are simply stored with air slacked lime, one part, to two parts of beans by weight. A specialist of the Kansas State Agricultural College says:

"Unless beans are treated they are almost sure to be seriously damaged by the weevil. Air slacked lime will not injure the beans either for germination or for food purposes. It can be mixed with the beans when they are stored in the bin or when they are stored in bags. The beans should be treated with the lime directly after harvest."

### MILLIONS WORK FOR US

Certain varieties of soil bacteria or micro-organisms, really a low order of unicellular plants, are associated with a number of necessary soil activities which have to do with the development of available plant food and the successful growth of crops. These include nitrogen-storing bacteria which live on the roots of legume plants and the bacteria which cause fermentation and the decay of organic matter and which are related to chemical changes in the soil by which the plant food is gradually made soluble and available to the plant roots.

### FRUIT NEWS ANNUAL

Mr. Rowley covers the first page of his Annual Review number with the usual red ink. It is, we believe, by far the finest he has ever issued and contains a world of information as to California fruit packing interests.

**Pioneer Roofing**

—looks best  
—wears best

**D**URING the past 30 years many thousands of builders have proven to their own satisfaction that the one best covering for every roof is the old reliable PIONEER ROOFING—made in the West to meet Western conditions. Used on Barns, Sheds, Silos, Bungalows, Warehouses and every other type of building. Every roll guaranteed.

ASK YOUR DEALER  
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Los Angeles and San Francisco



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**For More than Fifty Years We Have  
Been Growing and Selling Nursery Stock**

Bartlett Pears on Quince Let us have your order root double-worked on early for Cherry Trees and Beurre Hardy are more Resistant Grape Vines. and more in demand — The demand for all varieties double the number of ties of trees this year acre. promises to be big.

Illustrated Catalogue on Request

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FITTED WITH GALVANIZED WIRE TIES WHICH GO ALL THE WAY AROUND THE TREE

10 Inch.....	\$ 9.00 per 1000	18 Inch.....	\$12.50 per 1000
12 " .....	9.50 " "	20 " .....	15.00 " "
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## Plant Fruit Trees

Increase the value of your land. Every horticulturist on the Pacific Coast should have a copy of our new catalogue.

**Write for Our Catalogue**

It contains information about all varieties of fruit bearing trees.

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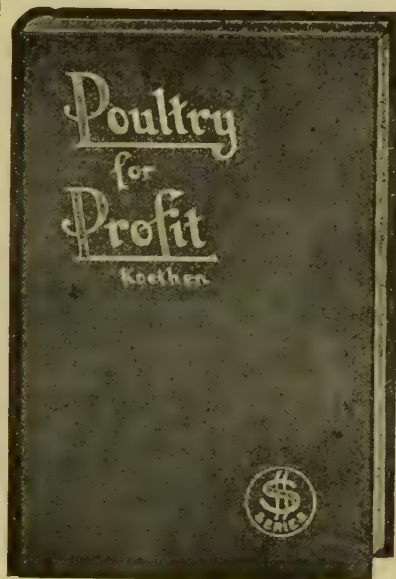
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Fresno, California



# Poultry can be made to Pay



**T**HERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

## Poultry for Profit

BY

Jean A. Koethen

Graduate of University of Calif.

Gives more practical knowledge of every branch of the poultry business in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this work experience in the poultry business is not as necessary. Through its guidance obstacles are overcome before it is too late.

The book is 5½x8 inches and contains 12 chapters, with over 225 pages of text and 18 pages of illustrations, printed on egg-shell book, binding full cloth vellum de luxe.

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Invest your capital LATER

\$1.00 postpaid to any address

With the California Cultivator  
One Year, \$1.75

The Cultivator Publishing Co.  
Incorporated

115-117 N. Bdw. Los Angeles

## My Christmas Goose

Written for California Cultivator By Jean A. Koethen



EVER since away back in the seventies when my old soldier uncle used to read to us little girls about Tiny Tim and the brown, crackly Christmas goose of the Cratchitt family, the goose has seemed to me the desideratum for proper celebration of Christmas, and yet I never tasted goose nor tried to raise one till the past year. One year I bought two settings of eggs. The first proved absolutely infertile. Out of the second one forlorn gosling hatched, but the hen pecked it to death almost before it was out of the shell. Then I began to realize that there were difficulties in the way of hatching goslings and resolved that my next venture should be with goslings already hatched.

I had read alluring stories of the ease with which goslings are raised, their value when they are raised, their long life and immunity to disease, and was delighted last spring to find a Cultivator advertiser who would ship me as many Embden goslings as I wished at 50 cents apiece. How many should he send? I wanted one for Christmas first of all, and one for Thanksgiving; then there must be a pair for breeders, and one for luck. Five was a very good number, sufficient to keep each other warm while they traveled, though I was assured that this was not important on account of their size and vigor, and to give me an opportunity to learn the rudiments of goose culture.

When my five goslings arrived, one chilly evening in the early part of April, I was amazed at their immense size. I hadn't expected anything so large or so strong. I was disappointed that they would not touch the dish of bread and milk I had understood was the proper "first feed" for goslings, and at a loss what to do with them, for I did not quite dare put them under the broody hen I was counting on to mother them unless I was by to see how she treated them. A box was hastily prepared with straw for bedding and a warm blanket for covering, and they were left in the kitchen for the night. I know now that they were cold, for they kept talking and refused to quiet down, but I was so filled with the notion that goslings do not need the warmth chicks require that I let them talk. In the middle of the night I was awakened by a strange sound in the dining room, which adjoined my bedroom, and there was the largest and strongest of my goosey-ganders, walking and talking. I put him back to bed, but there was no rest for any of them. The next night, and a good many nights thereafter, they had a jug of hot water in their box and slept in comfort in the feed house. The broody hen, when she saw what big, ugly creatures they were, absolutely refused to take them, and I shall never again offer such a brood to a hen. A jug of hot water makes an excellent mother, but some heat they must have.

I had read that grass was about all the food goslings need at first, and the lady from whom I bought mine, when I asked how she fed them, replied, "Any kind of ground grain will do." Did she mean moist mash or dry, one grain alone or several mixed? I could only experiment. I put them in a coop on the lawn so that they might have grass if they preferred grass, and offered them several times

a day, bran, corn meal, middlings, and bread crumbs, both wet and dry, but they would eat neither grass nor grain nor crumbs. Finally I began to understand that in spite of their size and strength goslings are very like baby chicks and want nothing the first few days but rest and warmth. One gosling was the price of this knowledge, for the smallest of the five had not looked just right when he was taken from the box and quickly succumbed to the Spartan treatment I gave it. After a few days they began to eat, but were slower than chicks in acquiring an appetite. Then I tried mash again, both wet and dry, but finally settled down to the wet because they wasted it less, and a mixture of bran or shorts and corn meal. It was some time before they learned to care for grass, but by the time they were a month old they were ready to nip every green thing that appeared in the garden. I owe the failure of my war garden, I suspect, to the presence of these goslings, but it was a long time before I could make up my mind to confine them. When I did they consumed mash in such an alarming fashion that I wished I had another garden to turn them out on.

One gosling had fallen a victim to misinformation. Another was sacrificed to carelessness. I had read, but had forgotten, that goslings cannot stand rain until they have feathered out. When they reached the age at which heat could be dispensed with, I put them in an A-coop in the lath house. A sudden shower one night gave them more or less of a wetting, and gosling number two drooped and died. I know now that goslings, while they do not take cold as chicks do, and are not subject to bowel trouble nor as easy victims of lice and mites must still be carefully protected the first three weeks, and kept in out of the rain until they are quite well grown.

The three remaining goslings were now kept confined and fed a moist mash three times a day. How they did grow, and how they did eat! I couldn't get the words of the old song out of my head:

Oh, the elephant ate all night  
And the elephant ate all day,  
Do what he would to get more food  
The cry was still more hay.

They were always ravenously hungry, and my sacks of ground grain disappeared with appalling rapidity. To make a long story short, by the time those goslings were three months old, they weighed from ten to 12 pounds apiece, but were eating us into the poorhouse. With Thanksgiving four and Christmas five months away, there was only one thing to do, get rid of them at any price. Then came my crowning disappointment.

On calling up various wholesale and commission houses I found there was no market for geese of any kind at that season. One man offered me ten cents a pound. Others would not have them at any price. A friend came to the rescue and offered to take one and find a customer for another. I let him have them for a dollar apiece and the third made a delicious Sunday dinner for the family. It took two of us half a day to pick it, and Mrs. S. who had the fun of picking one of the others, said, "Never say goose to me again." They are wonderfully fine when once the feathers are off, and there may be an easier

way of picking them than we found, but I suspect the time it takes to prepare a goose for the table is one of the reasons it finds a less ready market than chickens.

My goose experiment was a disappointment but by no means a failure. I have learned that the goose is a bird which cannot be profitably raised in small quarters. If given adequate pasture it would, I am sure, be immensely profitable, for what other bird can compare with it in rapidity of growth? A bird that can reach 12 pounds weight in three months has great possibilities, but it should be hatched earlier or later than I hatched, so that it may go on the market when there is some demand for it. Geese hatched in January should find a better market, and if it were possible to hatch in September (which I fear it is not) they would just reach marketable size at Christmas. I shall try again. We had no goose for dinner this Christmas, but there will be other holiday seasons, and perhaps some day I shall find the little farm with the right kind of pasture.

### POULTRY ASSOCIATION WILL MARKET OWN PRODUCT

The Central California Producers' Association now proposes to eliminate entirely the middleman. It also proposes to handle during the next year \$2,000,000 worth of eggs and poultry.

The products are to be marketed without association with the Producers' Exchange and will, when possible, be sold direct to retail dealers, as the result of action by the federal food administration, which has ruled that the Poultry Producers' Association is no longer entitled to a seat on the exchange.

E. A. Forbes, secretary of the state market commission, says many benefits will result. "The plan was tried with success in Los Angeles, and we hope to profit by their experience," he said. "Large numbers of poultrymen have been going out of business because of the high cost of feed and the prices they have received from the commission men were too low to cover their expenses."



### The Best Feed on the Market

Has the highest protein at the lowest price \$2.90 per 90-lb. bag, subject to market changes; see that your hens eat as much Dry Mash as they do grain; feed them lightly of grain in the morning and make them work for it; either have a scratching pen or spade up a part of the ground and rake the feed under; keep "A-1" Dry Mash in a dry form before them all day; about one hour before feeding them their grain in the evening WET their Mash and let them eat all they will; put it on top of the Dry Mash, then feed them all the grain they will eat; this stuffing process will give them a full crop to carry them through the long night of inactivity; analysis is printed on every bag; give it a trial. At your Dealers or

The Globe Mills, Los Angeles

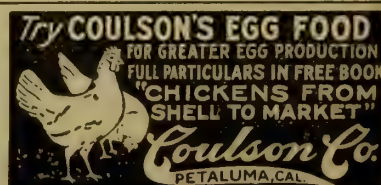
### Bargains Bargains

### Mandy Lee Incubators

We are selling out our line of Mandy Lee Incubators. While they last we will offer the 140 egg Mandy Lee Incubator for \$16.00, F. O. B., Los Angeles. These machines are a snap at this price. Six patented and distinctive features. Absolute satisfaction guaranteed. A few of the other sizes for sale. WRITE FOR CATALOGUE.

### Globe Grain & Milling Co.

913 East 3rd Street  
Los Angeles





## The Small Tractor

**W**E note the following hearty endorsement of the small tractor by a writer in the "Breeder's Gazette".

One of the greatest problems among farmers is that of farm labor and power. Perhaps a solution lies in little farm tractors. Heretofore these machines for the most part have been designed and built on too large a scale for small farmers. Where the acreage has been big and practically level, they have been doing a world of good; they have been the forerunners of the smaller machines to serve the needs of the average farmers. These small tractors, which will go almost anywhere a team will travel, are chugging merrily, plowing, fitting the soil, seeding the grain and harvesting and threshing. In many communities, on big ranches and estates, whole batteries of these little tractors are in use. The little tractor has important advantages over the big machine, principally because of its small cost. It is lighter and will not pack the soil. Its sphere of work is unlimited. It can plow, disk, harrow, haul, cultivate, and do almost any kind of work on the farm. It is more economical in labor required to run it and uses less fuel and oil. It requires no mechanical engineer. Little tractors are practical for the small farm. The practical man, however, never goes to extremes, and while he may have some time ago put some money into a big machine he has not been so foolish as to have sacrificed it for the smaller tractors. The chances are that he has kept it to do his heavy belt work, such as threshing, corn husking and silage cutting, although the little tractor is doing this kind of work also, only on a smaller scale.

Not only is the little tractor helping to solve the problem of labor and

horsepower for the farmer, but its advent is improving farm lands, just as the automobile brought with it an improvement in the way of better roads and highways. It is easy to see that in order to receive the maximum efficiency from the use of these tractors fields must be arranged systematically, stones, stumps and other obstructions removed, gullies and low places filled in and a general clean-up of the fields affected. One of the handicaps to the more rapid introduction of these tractors has been the fact that up to recent years the farmer has not had sufficient mechanical training and ability to keep the machines in repair and adjustment. Happily, however, this situation is changing. Moreover, the actual running of a tractor is easier than an auto, because its motion is slow and deliberate, and opportunity is given the green hand of becoming accustomed to the wheel. The motor of a tractor is easy to start because mechanics know that the larger the cylinder and the greater the compression the easier the charge of explosive mixture is drawn into the cylinder and fired.

On some ranches in the West all the plowing and fitting of the land is done with batteries of tractors, run by day laborers, who are paid to sit in the seat and steer, one repair man being employed to make all repairs and adjustments. In many instances the tractor has saved the owner its cost in a single operation. Not being entirely satisfied with making tractors simple in operation, over which one man or intelligent boy has entire control, manufacturers are now even making them with self-steering devices without the necessity of having an operator in the seat. These devices are especially valuable in plowing, as the wheel of the steering device follows the furrow closely, and a neater and better job can be done.

## Tractor Care Pays

Upkeep as Important as Purchase. Samson Siftings Gives Points of Care

Be careful in the selection of a tractor—get one that fits your work. In starting the tractor never put a full load on it for the first few days; put the load behind it gradually, for when a machine is new it can easily be damaged by endeavoring to run it to full capacity.

Be careful of lubrication—lubricate each moving part often. A little lubricant often is better than a lot at one time. Select the right lubricant and be careful to keep this lubricant clean. This can be done by using a receptacle with a dust-tight cover. It is hard to get dirt out of bearings, and a little dirt in a bearing will do more damage in an hour than a season's normal wear. Apply the same thing to oil. Oil should be clean and free from lint before putting it into the motor. Good motor bearings will run a season without adjustment, providing the lubrication is sufficient and free from dirt.

Never overload a tractor. The manufacturer places a rating on every machine turned out. Nearly all tractors will pull an overload, but if this reserve power is maliciously used, parts will break, bearings get hot, the tractor won't handle easily and will cost the owner that which he bought the tractor to save—money.

In regard to the hostler work which is necessary on all tractors; it will be found most convenient to do this work at night, because the tractor being warm, the bearings will take grease more readily. Another thing—the operator has more leisure at night

than he has in the morning and won't neglect some needed adjustment at that time, while in the morning the operator is usually anxious to get out into the field.

Always handle your tractor with as much consideration as possible—never make a turn shorter than necessary; don't jerk your machine around, but have a little respect for its mechanism. Simply because it is of metal is no reason it can not be strained or broken.

### STATE A. P. A.

The California branch of the American Poultry Association recently met at Coalinga and elected A. A. Bamford of Gardena, president; L. C. Byce of Petaluma, first vice-president; P. D. Mercer of Los Angeles, second vice-president; Henry Kruckeberg of Los Angeles, secretary; M. E. Dillingham of San Gabriel, treasurer, and C. G. Hinds of Oakland, Chas. R. Harker of San Jose, A. H. Currier of Santa Rosa, Ben Woodhull of Stockton, and F. H. Green of Modesto, directors.

### STATE POULTRY ASSOCIATION ELECTS OFFICERS

The California State Poultry Breeders' Association has elected the following officers for the coming year: President, F. H. Green of Modesto; vice-president, R. V. Moore of Oakland; secretary-treasurer, C. A. Wilkins of Sacramento; directors, C. G. Hinds of Oakland, C. T. Walker of Coalinga, L. B. Cary of Reedley, and W. H. Hocking of Los Angeles.

## Note What It Does

IN ORCHARDS IN VINEYARDS



## This 15-Feature Tractor Will Almost Run Your Place

**15 FEATURES**— invaluable in orchards and vineyards—make this the needed tractor.

No other tractor of the track-laying type sells at so low a price. And no other has such advantages as the patented front drive.

### Handles Like Horses

The Bean TrackPULL Tractor turns clear around inside a 10-foot circle (5-foot radius), and it has full power even on so short a turn. It plows and harrows close up in the corners, and right up to the trunks and vines. It goes under tree-branches only four feet off the ground; and works between 7-foot rows in vineyards. On account of the patent principle and simple transmission, the fuel consumed is far less than other types doing the same amount of work. When you hit soft spots or holes, you simply swing the track over and pull out as you do with teams.

When not in the field this trac-

tor's 10 h. p. pulley runs your stationary machines.

### A Great Patent

The Bean TrackPULL is different from all other tractors in that it pulls instead of pushes itself along; and you steer with this track that pulls. That is why the Bean can be "gee-ed" and "haw-ed" like a team. This feature is patented so no other tractor can provide this big advantage. Sooner or later you'll decide, without doubt, that you want a tractor to do these things.

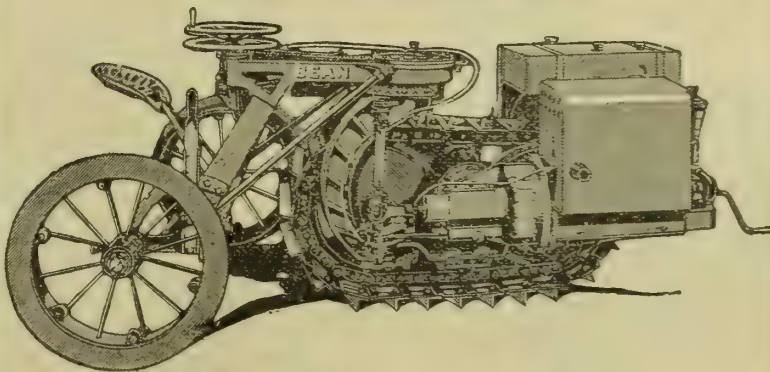
### Know First—Then Decide

So don't buy a tractor until you know all the facts about this remarkable agricultural aid.

The Bean TrackPULL Tractor pays for itself in what it saves for its users. It weighs less (3100 lbs.) and costs less to operate than wheel-type machines of equal power. And yet it has greater traction. The pressure per square inch on the soil is less than a man's foot.

Before you turn this page send for full information about the Bean TrackPULL Tractor.

## BEAN TrackPULL Tractor 6 H. P. at Drawbar



Price Now \$1215

This price is the very lowest for any track-laying tractor built.

But material costs are rising every day because of the great demand for metals. Our low price therefore may have to be withdrawn without any further notice.

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**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Eureka Walnuts are the Best**—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alhambra St., Alhambra, Cal.

**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References: R. R. Morris, East Whittier, Cal.

**Placencia Perfection Walnut Trees** on black root. Still have a limited supply of first class stock. Scions used in grafting taken from trees showing a high record for crop and quality after seven years of careful selection. Hugh T. Thomson, Orange, Cal. Phone 502R1.

**Pear Trees**—Offer several thousand Bartlett's, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton, Ore.

**By Far the Lowest Priced** means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon** trees one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**Figs**—Calimyrnas and Capri. No. 1 fine condition ¾ to 1½ in. caliper. Also "Wonderful" Pomegranate four to five feet ½ in. caliper. Reasonable. Gus Spengler Nursery, Jasmine, Kern Co., Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**For Sale**—5000 Sour Orange Seedlings 10 to 20 inches, \$20.00 per M. f. o. b. Gus Spengler Nursery, Jasmine, Kern Co., Cal.

**For Sale**—3500 Valencia, 2500 Eureka Lemons. Young trees. Select fruit buds. Reasonable prices. H. Clements, Glendora.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Laramanda Park, Cal.

**Walnut Trees**—Placencia Perfection, selected grafts guaranteed stock. Wm. Pollard, South Pasadena, Cal.

**Fig Trees**—Thrifty, large Calimyrnas and Capri. Correspondence invited. C. A. Nelson, Exeter, Cal.

**Apricots, Olives, English Morello Cherries** and Arizona Ash. First class trees. C. E. Moyer, Hemet, Cal.

**Apricot Trees For Sale**—A choice lot. Carsten Truelsen, Nurseryman, Hemet, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

**For Sale**—Eureka Walnut grafting wood. R. M. Fay, R. D. 4, Anaheim, Cal.

### WANTED

**Wanted**—Position on ranch by married man thoroughly experienced in all kinds of ranching. Can take full charge or as working foreman. Can operate tractors, understands gasoline engines. Best references. Chas. Pulaski, Vacaville.

**Wanted**—Experienced Men with horses and tools to take contract to cultivate and irrigate fig orchards near Fresno. Fifty to four hundred acres. One, two and three year contracts. Write, J. C. Forkner, 312 Cory Bldg., Fresno, Cal.

**Wanted Work on Farm** for experience in western crop raising. Plowing, irrigating. H. DeCou, Gen'l. Del'y., Los Angeles.

**Wanted**, nine hundred Nonparel and three hundred Peerless Almond trees. O. J. Backus, Rosamond.

**Wanted**—To hear from owner of farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

### GEESSE

**Mammoth Geese**, the kind you want Stock for sale. Chas. McNeely, Alpaugh, Cal.

### HOGS

**The Billiken Brand of Chester Whites**—Entirely sold out of bred sows and gilts. Have a few open gilts of March and April farrows; also 6 boars, same age. Have 9 young tested sows to offer for late December shipments. These have each farrowed once and will be bred for a late March or early April farrow. Fall pigs, both sexes, now being weaned and will be ready for delivery during December. Good breeding stock is getting very scarce and rapidly increasing in value. If you want some of this easy feeding, melon-type, get busy with your orders. C. B. Cunningham, Mills, Cal.

**Grape-Wild Farm Berkshires**—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion but the sire of champions. At the 1916 California state fair his daughters won all the senior sow classes including the grand champion sow. At the 1916 Oregon state fair a Grand Leader sow was junior champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Four Good Boars** ready for service is all I have left out of the twenty I had six weeks ago. These are the low down, big bone heavy ham kind that will just do a world of good in that pork producing herd. They are worth \$100 but \$50 is the price shipped on approval. Less than two months until the big Kings County Poland-China Sale. Bernstein sells twenty sows that are real BEAUTIES. They will please you. Bernstein's Ranch, Hanford, Kings County.

**Superba**, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles.

**Big Type Durocs**—Well grown out February and March pigs of either sex in any quantity. We ship only the tops and butcher the culls. F. M. Johnson, Napa, Cal.

**Most Money in Duroc-Jerseys**—Bred sows and weanlings, either sex all the time. Delta Farm and Live Stock Co., Colton, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**PLW Durocs**—Eastern selections made by R. K. Walker in January. Peters, Lamson & Walker, Devore, San Bernardino County.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Shasta County, Cal.

**Berkshires**—Sired by Star Leader, the \$1,500 boar, ready for service. Kounias Registered Stock Farms, Modesto.

**Durocs**—P. & L's Defender by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

### MISCELLANEOUS

**Famous Hairy Peruvian Alfalfa Seed**—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Quality Trees**, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

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### ENGINES

**Several New and Slightly Used Engines**, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

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**WASHINGTON HOLSTEINS**  
We will sell twenty splendid heifers, granddaughters of King of the Pontiacs, from A. R. O. dams with semi-official yearly records up to 598 pounds for junior two years, 670 pounds for the junior three years and 813 pounds for mature cows, which records were made under practical dairying conditions. These heifers range in age from five months to twenty-nine months. Those of proper age have been bred to a 33 pound bull. They are from fine large cows and should be heavy producers. The oldest are due to freshen in February.

Prices range from \$350.00 to \$600.00 each with a proper discount on sales of more than one animal. A substantial discount will be made on a sale of all to one customer.

THE GREENBANK FARM,  
800 Leary Bldg., Seattle, Wash.

### OREGON JERSEYS

**Bull, Fussy Fern's Noble Boy**, Junior Champion, his dam also first prize State Fair, R. of M. 488 lbs., other bulls for sale, whose dams have made up to 1040 lbs. There is butter in these pedigrees. Write for one.

Reld Stock Farm,  
Second Floor Wilcox Bldg.,  
Portland, Oregon.

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., Cal.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

**Registered Holsteins** out of A.R.O. Dams. Grandsons of King Korndyke Hengerveld Ormsby who has 20 A.R.O. daughters with records of over 29 pounds. Look up this sire. Geo. Kounias, Modesto Farms, Modesto, Cal.

**For Sale**—40 head of milk cows and about 20 heifers, mostly Holsteins, good grade stock in fine condition. On account of labor conditions will sell all or part of the herd and will let alfalfa hay go with the cows. W. G. Drew, R. D. 2, Box 50, Porterville, Cal.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Veramont Stock Farm Pure Bred Herefords**, Location Plumas County. Ideal for stamina and vigor. Bulls for sale. Address H. M. Barngrover San Jose, Cal.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, Cal.

**Ayrshires (registered)**—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Ariz.

**Young Holstein Bulls**, bred right, grown right, priced right. Creamcup Herd. M. Holdridge, Modesto, Cal.

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. T. E. Greenough, Merced.

**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys**—Both sexes for sale. J. R. Carhart, Fullerton, Cal.

### MACHINERY

**WHY BUY NEW? SAVE HALF**  
Material guaranteed. It's second-hand after used few times; but not worn out.

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**PUMPS, CENTRIFUGAL**, rotary, single, double-acting deep well pumps. No. 2 Ames, double-acting, fine, \$145; 50 brass cylinders, all sizes; old-style pump head, 18-inch stroke, \$38; small Bulldozer, \$42.50; large size, 20-inch stroke, \$68; 24-inch Stearns pump, \$75; 2, 3, 4, 5 hor. centrifugals. No. 5 two-stage horizontal B. & J. good as new, cost \$400, our price, \$150; 25 others.

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### POULTRY

**Order Now**, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh cut bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

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**White Wyandotte Eggs** for hatching. \$1.50 per 15; \$6.00 per 100. Flora Cox, Buena Park, Cal.

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**Will Take Other Property,** preferably clear and under \$5000 on portions my ranch north of this city, in silt, artesian basin of Madera County. It is generally recognized as some of the finest alfalfa, fruit and general farming land in San Joaquin Valley. Convenient to schools, modern town, creameries, cheese factory, state highway. Southern Pacific, etc. Neighbors are high type American farmers, making good livings on moderate sized acreage. I am no agent and will try and work in with your conditions. Arthur Vernon, Fresno, Cal.

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**Recleaned Alfalfa Seed** of known purity and vitality. Grown under various soil and climatic conditions. Write us of your conditions and let us help you in selecting the proper kind of seed to plant for largest crops. Order direct and save middlemen's profit. Desk B. BOMBERG-ER SEED CO., Modesto, Cal.

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If you are going to need any seed for next season now is the time to render your order. It may be impossible for you to buy what you need later. V. A. Peterson Alfalfa Seed Co., Arbutus, Cal.  
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**Our Geese and Turkeys Win Again**—Grand Champion Sweepstake Special for best pair of birds in show. For size, vigor and quick maturity, our stock are best. East or West. Stock and eggs in season, also Collie pups. Correspondence solicited. John G. Mee, St. Helena, Cal.

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**For Sale**—Mammoth Bronze turkeys. The Best In The West. Geo. A. Smith & Son, Corcoran, Cal.

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## LIVE STOCK

**Butte City Shorthorns, Shropshires, Berkshires and Ponies**—Stock of all ages for sale. Can supply one or a carload. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal.

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**Armstrong's New Zealand Red Rabbits**—Utility breeding does and bucks a specialty, prices reasonable. Armstrong Rabbit Yards, Petaluma, Cal.

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**Lumber—Sash—Doors—Plumbing—Supplies**—Building materials of all kinds. New and second hand. \*A.R. W. shingles 55 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

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**White Muscovy** (quackless) duck eggs. \$1.50 per dozen, parcel post prepaid. Mrs. B. Hocking, Guast, Cal.

## Household Department

## READ!

Gather the knowledge of thy life's vocation  
Where'er thou find'st a gleaner ne'er so poor:  
Read thou! Thy lesson shall in Time's probation,  
Ripen thy mind, which, fruiting, shall secure  
Thy place in honor, peaceful and assured.  
This day is thine, but night comes quickly on:  
Though pleasure must have way, be not allured  
From Wisdom's pages ere thy day be done.  
—A. H. McQuilkin, in the Inland Printer.

## WHEN THE STORM CAME

By Laura Tilden Kent in Youth's Companion

THE sky was growing cloudy and dark in the early afternoon, and the little black and white cow knew that a storm was coming. It made her feel restless, and she walked nervously round and round the pen when her calf was shut away from her "Try to get out! Come with me!" she seemed to be saying. "Hurry! A storm is near!"

Finding that her calf could not take her advice, "Bossie" walked away from the pen. Soon she went trotting down the road.

Mary and Ted had been watching the cow for a long while. "I'm afraid that Bossie is going to run off," they said.

"Yes," said their mother, "every winter these countain cattle go down into the valley where it is warm. Their instinct tells them when to go, and Bossie thinks that now is the time."

"She won't leave little Spot," said Mary.

"I'm afraid that she will," said mother, as she looked anxiously down the road.

Spot was bawling sadly in the little corral but Bossie trotted straight on, without looking back.

"Let Mary and me go and drive her back," offered Ted. "She has not gone very far."

When their mother had given her permission, the children went out into the chilly air.

But Bossie would not be driven back. The faster Mary and Ted hurried after her, the faster she trotted; with her head bent forward she ran straight on down the stage road at a rapid rate.

After a time Mary and her brother left the road, and ran through the bushes; they tried to pass Bossie and to come back into the road ahead of her. But Bossie, watching them from the corner of her eye, turned from the road herself, and trotted up to three cows that were walking about uneasily under a big pine tree. When Bossie came up, they all ran off together.

The cows no longer kept to the road, and so the children ran out into the woods and tried again to get ahead of her. They had a great chase after her over stones, and through little thickets, and round wild heaps of great rocks; but Bossie and the other cows were always far ahead. "We may as well go home!" said Ted, who had become discouraged.

"Look at the clouds! There's a storm coming and we must hurry back as fast as we can!"

"We must go home!" cried Mary. The sky was gray, and it was growing quite dark in the woods. Sometimes a snowflake came drifting down through the frosty air.

"Yes, we must hurry!" said Ted.

The children turned and began to run back along the way they had come; but they soon grew frightened. They could not find the road.

"It ought to be here!" faltered Ted.

It was getting darker all the time, and the stray snowflakes came down thicker and thicker. All the little pine thickets, the great heaps of rocks, and the stunted oak bushes looked alike.

"We are lost!" said Ted, at last.

"We—we must find the road!" quavered Mary.

They went on, running when they could, walking when they were too tired to run, growing more and more frightened as the darkness came on. Suddenly they heard a sound! A heavy wagon was stuck in an icy hollow on the stage road, and the driver and his helper were cracking their great whips and shouting to their six balking mules.

Ted and Mary did not quite realize what was happening, but they heard human voices a long way off, and they felt better.

"We're lost! We're lost!" they called as loudly as they could.

A voice answered them: "Where are you?" and with the voice there came the sound of hurried steps.

"Here!" they cried together.

Mary and Ted hurried on, and presently they met their father, crashing through the bushes.

A few minutes later they had climbed a steep hill and were on the old familiar wagon road again.

It was almost pitch dark now, and the snow began to come down in whirling clouds, but Ted and Mary did not care. They tramped wearily but happily along, each holding one of father's hands, and coming nearer and nearer to home, a hot supper, and—mother!

Bossie, who had caused all the trouble, must have missed her calf in the night, for the next morning she was back, huddled in the snow outside the corral; and she seemed glad to be put into a warm barn where she could eat all the hay and bran that she wanted.

## HIPPO DESCRIBED

Johnny, who had been to the circus, was telling his eacheer about the wonderful things he had seen.

"An' teacher," he cried, "they had one big animal they called the hippo—hip—"

"Hippopotamus, dear," prompted the teacher.

"I can't just say its name," exclaimed Johnny, "but it looks just like 9000 pounds of liver."—Youngstown Telegram.

## A MARATHON

"I believe honesty pays in the long run."

"So do I; but I often wish it were not such a mighty long run."—Chicago Record-Herald.

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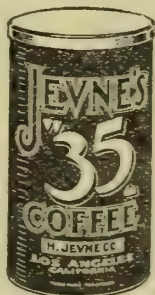
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## The Cultivator Patterns



8672—Girls' Coat. Cut in sizes 4, 6, 8, 10, 12 and 14 years. The coat is in double-breasted effect, and the large pockets have pointed flaps buttoned at the top.

8679—Ladies' Waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The waist closes at center back, and the front is all in one piece.

8457—Ladies' Waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The fronts are gathered to the edges of the back which extend over in yoke effect.

8452—Ladies' Apron. Cut in sizes 36, 40 and 44 inches bust measure. The bib fits smoothly, and the skirt section is three-gored.

8658—Ladies' One Piece House Dress. Cut in sizes 36, 38, 40, 42, 44 and 46 inches bust measure. The dress is in one piece from shoulder to hem, but there is a casing run through with elastic which holds the dress in at the waistline.

8676—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The dress has a plain little waist in Empire effect, and the straight, one-piece skirt is gathered to the waist.

8448—Ladies' Two Gored Skirt. Cut in sizes 24, 26, 28 and 30 inches waist measure. The front gore fits smoothly, and the back gore is gathered to the slightly raised waistline.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

### HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

Pattern Department  
California Cultivator  
Los Angeles

## Breakfast Marmalades

These Are Made From Sweet Fruits That Need No Sugar



As a butter saver Americans might adopt the English custom of serving marmalade with toast or hot bread for breakfast. Let the fruits supply the sugar to be used in making these marmalades. Their virtue lies in the tartness of the fruit and the fact that they contain only what nature put in the fruits.

### Apple-Raisin Marmalades

To one cup ground seeded raisins add one cup chopped apples and one cup water. Cook until thickened. A little orange and lemon juice and grated rind may be added if liked.

Cooked dried fruit, as apricots, pears, peaches, or prunes, may be used in combination with the ground raisins in any proportion desired, and

three fruits combined, as apricots, apples and raisins.

Catsup added to the marmalades makes a simple fruit relish to serve with cold meat.

### Date-Prune Jam

Wash one pound prunes, soak over night; cook in same water and remove stones. Remove stones from one pound dates and cut in small pieces. Cook with prunes until mixture is thick. Add small amount of lemon juice.

### Prune-Apricot Butter

Wash one pound prunes and one-half pound apricots; soak over night; stew until very soft in same water; rub through colander; return to sauce pan and cook slowly until thick like apple butter, being careful that it does not burn. Do not add sugar.

## Economical Rugs

Written for California Cultivator by Ellen J. Cannady



RUGS have so many advantages over the old-fashioned carpets, that we cannot help wondering how we endured these heavy, dust-gathering floor coverings so long. Perhaps we cannot have the Wilton and velvet rugs that look so tempting when displayed upon the racks in the furniture stores, but there are a great many home-made rugs that are artistic and durable.

### Home-made Carpet Rugs

If you have an ingrain carpet that is too much worn for further service, dust it thoroughly and cut it in strips one and one-fourth inches wide. Ravel the threads about one-fourth of an inch on each side, sew the strips together and wind them into balls. A carpet weaver will furnish the chain and weave them, making them any size you wish. Some firms take the old carpet just as it is, clean, ravel and weave it, and return the finished rug to you. Small rugs are usually preferred to large ones because they are so much easier to handle. These rugs are especially suitable for the dining room and living room and are handsome enough for any home.

### Rag Rugs

The most popular rugs, however, are those made of the rags that accumulate so rapidly in every home, prepared and woven like the old-fashioned rag carpet, except that they are usually made heavier. The expense connected with making them is so little that there is no reason why any housekeeper should not have as many as she wishes, and they will do a great deal toward making a room look cheerful and home-like. Save the rags until you have enough for the rugs, and if they are to be made with hit or miss centers of every color, use the short lengths for them, mixing them thoroughly before you begin sewing so the colors will be evenly distributed. Tear the rags in strips, the width depending upon the materials used.

The sewing may be done on the machine, lapping the ends of two pieces and stitching across, then stitch the next two pieces without raising the machine foot. When you have finished, cut the threads and wind into large balls.

Bright colored borders are used across the ends of the hit or miss rugs, and it is well to use the white rags for these, dyeing them the colors you wish with diamond dyes. A shaded

border of red and green is pretty for a dark rug. Outlining the border with a narrow strip of black adds greatly to the effect, and these stripes may be made of old stocking legs, cutting them round and round, making a long spiral one inch wide of each one.

Clouded effects are desirable for the borders of rugs if the centers are plain. Use white rags for them, making them into skeins, then bind bands of rags around each skein in two or three places before dipping in the dye. The part that is bound will be

lighter in color than the other. It is not necessary to stir them when they are put in the dye for you do not wish them an even color.

In a living room with mission furniture, shades of brown and tan are pretty, especially if the walls are tan or brown. Blue, old rose, pale green and lavender are pretty in the bedrooms, and nothing is more suitable for them than these light colored, light weight floor coverings.

### HULLED CORN BETTER THAN HOMINY

#### A Chino Subscriber Tells How to Make It

Noticing in a recent issue of the Cultivator a rule for making hulled corn, I venture to send a recipe given me by a neighbor. Take two cups of kaffir corn and wash thoroughly; soak over night in cold water, adding a teaspoon of soda. In the morning drain and rinse with cold water; put in kettle large enough to allow for swelling and add boiling water; bring to a boil, then cook slowly for four hours; season with salt and a lump of butter. We like this with meat and gravy, but many will enjoy it with sugar and cream. It tastes like hominy, but is more tender.—E. M. H.

### LOOK PLEASANT

A gloomy face is ungentle. Nobody cares about your woes; Each has his sorrows, goodness knows, Why should you your grief disclose? Look pleasant!

"Though you are blue as indigo— You're prettier when you smile, you know.

The world abhors a gloomy face, And tales of woe are common place— So let your face no sorrow trace— Look pleasant."

—Attainment.

## After a Hard Day's Work—

WITH the chores done, the stock 'tended to, everything ship-shape and air-tight for the night—

It's pretty nice to settle down to supper with a steaming cup of Ghirardelli's at your elbow. Pretty nice and warm and comforting!

And in the morning—up early (what with help so scarce!) and a hundred and one things to do—it's right comforting to know that Ghirardelli's will be there at the breakfast table to greet you.

A delicious, sustaining food-beverage—drink it every day for health and economy.

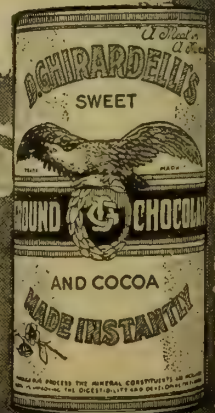
In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

D. GHIRARDELLI CO.

Since 1852

San Francisco

Ghirardelli's  
Ground  
Chocolate





## Do You Like Horse Beans?

**H**AVE you tried cooking the green pods of Horse or Broad Windsor beans? Below we give method of cooking them used in the Barbados Islands—surely a quick and easy one and worth trying.

The first is for cooking the young pods as French beans. The pods should be picked when they are not more than about six inches long. To avoid their turning an ugly color in boiling, they should be sliced thin into a bowl of cold water, and whenever the knife used shows any stain it should be wiped clean on a damp cloth. Throw off the water in which the pods have been sliced, put them

into fresh cold water and let them stand there for about ten minutes. Then put them on in still another lot of water, with a pinch of soda added, to boil. They ought not to be boiled longer than about three minutes.

The second recipe is for cooking the dry beans, the only drawback to which is their tough skin. Put the beans into cold water with about half a teaspoon of soda added. As soon as they begin to boil take out the beans with a spoon and drop them into cold water immediately. The skins can then easily be pulped off. Put the beans back into the water with the soda, and boil until cooked, which takes, however, a long time.

## Simple Home Remedies

Written for California Cultivator By Martha

**A**N excellent liniment for muscular rheumatism, stiff joints and sprains is made with one pint each of spirits of camphor and neatsfoot oil and one half pint spirits of turpentine. Shake the bottle well before applying and use three times a day, rubbing in all you can for 30 minutes each time. It is said that rheumatism can find no foothold in a system fortified by olive oil. It will sometimes cure nervousness, and has a quieting effect in cases of neuralgia and neuritis. One teaspoon three times a day is the dose if the victim of neuralgia, anemia or disordered nerves is in a hurry to be cured.

When you have neuralgia, wet a cloth with strong camphor, lay it over a hot flatiron and hold it against your face, then cover your head with a shawl and breathe the steam as long as you can. This has given relief in ten minutes.

A roasted or baked lemon, filled while hot with pulverized rock candy

or sugar, and eaten while hot, will induce perspiration, relieve hoarseness, and often break up an incipient cold.

If you have a box of boric acid powder you can make some excellent home remedies at very small cost. The powder mixed with vaseline in equal parts makes one of the best remedies for piles or hemorrhoids or for old sores of any kind, and one of the best remedies for chapped skin is made by melting a teacup of mutton tallow and stirring in a level tablespoon of the powder until well dissolved. Then remove from the stove and stir in a little spirits of camphor and pour back in the teacup to harden. When needed warm and rub well into the skin. There is no better home remedy than borated glycerine, made by warming glycerine and stirring in the dry powder until entirely dissolved. The proportion is five parts by weight of the powder to ten parts of glycerine. This is fine for wounds, cuts, burns or bruises. Three parts of rosewater mixed with one part of glycerine makes a most agreeable cosmetic.

## Measures in Cooking

**H**OUSEWIVES not in the habit of cooking for large families often hesitate to use recipes calling for large amounts. It is a simple matter to divide such recipes, even into eighths, and usually with quite as satisfactory results as though the original recipe were followed. For instance one cup holds 16 tablespoons, eggs may be beaten and measured by the teaspoon or tablespoon, etc. The following tables may be helpful to those who find difficulty in dividing recipes.

### Measures

- 60 drops equals 1 teaspoon.
- 3 teaspoons equals 1 tablespoon.
- 1 cup equals ½ pint.
- 4 tablespoons equals ¼ cup.
- 1 round tablespoon butter equals 1 ounce.
- 1 solid cup butter, granulated sugar, milk, chopped meat equals ½ pound.
- 2 cups flour equals ½ pound.
- 9 large eggs equals 1 pound.

### Proportions

- 1 cup liquid, 3 cups flour for bread.
- 1 cup liquid, 2 cups flour for muffins.
- 1 cup liquid, 1 cup flour for batters.
- 1 teaspoon soda to 1 pint sour milk.
- 1 teaspoon soda to 1 cup molasses.
- ¼ teaspoon salt to 1 quart custard.
- 1 teaspoon salt to 1 quart water.
- ½ teaspoon salt is a pinch.
- ¼ square inch pepper is a shake.

### How to Measure an Ounce

Housekeepers are often confused by the mingling of weights and measures in a recipe, therefore an accurate schedule is a good thing to have around. The following of the most generally used articles will be found correct.

### STEAMED BROWN BREAD

#### Another Way of Using Dry Bread

A San Diego subscriber sends this one:

After reading your very helpful articles on "Old Bread," I would like to contribute a good recipe, tried many times, and always to the satisfaction of my family:

One cup yellow cornmeal, one cup bread crumbs, two cups sour milk, one teaspoon salt, one teaspoon cooking soda, two large mixing spoons molasses. Steam three hours. This is splendid.

I use my pound baking powder cans for steaming the bread, and this recipe should be enough for three. Of course, in filling cans allowance must be made for rising.

The most careful person will sometimes scorch an article when ironing. The next time this happens take a clean cloth, dip it into a solution made of nine parts water, one part peroxide, place it over the spot and press it with a warm iron until the cloth is dry. The ugly brown spot will disappear as if by magic.



## We Must "Follow-Up"

The story of the Gallipoli withdrawal is a tale of inadequate support. Like Salamanders clinging to the red-hot bars of a fiery furnace, the boys of Australia and New Zealand clung to the slopes of Anzac. Desperately, heroically they clung. No troops under any circumstances ever displayed greater soldierly qualities or upheld more sacredly the best traditions of England's Army. But they had to withdraw because the "follow-up" was not there.

To some of us it has been given to march with the columns of troops that go to France. And to others it is given to wave God-speed. But he who marches and he who stays is equally a citizen

of the world's mightiest republic and equally responsible for its success in this greatest of undertakings.

Then let us at home turn from our flag waving and consider how necessary we are, how useful we must be. Those who go to fight cannot hope to win by naked bravery and we cannot hope to win unless every individual at home does *all* he can. We must have no Gallipoli.

The Bell System is only one of the myriad great and small industries which are co-operating that nothing be left undone to keep a constant, efficient stream of men, guns, ammunition, food, clothing and comforts flowing to the front.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES

One Policy One System Universal Service



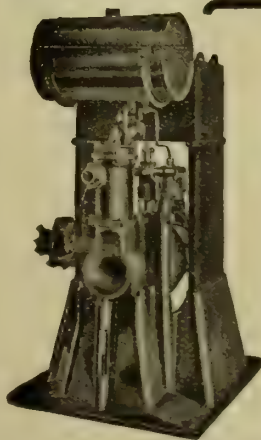
—that's what thousands of farmers say, who have gone from the U. S. to settle on homesteads or buy land in Western Canada. Canada's invitation to every industrious worker to settle in Manitoba, Saskatchewan or Alberta is especially attractive. She wants farmers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops to feed the world.

### You Can Get a Homestead of 160 Acres FREE

or other lands at very low prices. Where you can buy good farm land at \$15. to \$30. per acre that will raise 20 to 45 bushels of \$2. wheat to the acre—it's easy to become prosperous. Canadian farmers also grow wonderful crops of Oats, Barley and Flax. Mixed Farming is fully as profitable an industry as grain raising. The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools and churches, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. Immigration, Ottawa, Can., or to

GILBERT ROCHE  
3-5 First St., Sheldon Block  
San Francisco, Cal.

Canadian Government Agent.



## MORE BETTER LIGHT

Install a PRIVATE GENERATING PLANT and have ELECTRICITY FOR LIGHT AND POWER. The Uni-Lectric system generates the standard 110-volt direct current, which will operate from 1 to 50 lights. It will run your sewing machine, electric iron, vacuum cleaner, churn, washing machine, etc.

### NO BATTERIES---NO SWITCHBOARD

High speed gasoline motor, generator and automatic governor, all complete. Uses standard lamps and fixtures. Can be used for one or more houses. WRITE FOR ILLUSTRATED CATALOGUE TO

KARL A. HEDBERG

104-106 Clay St.

San Francisco, Cal.



## Los Angeles Market

Los Angeles, Jan. 9, 1918.

## BUTTER

Produce Exc. Quotations.  
Price to trade 4c higher.  
California extra creamery .....50

## CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....28½  
Oregon Longhorn .....28  
Tillamook Trip .....27½  
Domestic Swiss .....34

## EGGS

Exchange quotations. Prices include  
cases and fillers valued at 35c. Prices  
to retailers 4 cents above Exchange.  
Fresh extra .....53  
Pullet .....50  
Case Count .....50

## POULTRY

We quote to producers:  
Broilers .....34  
Fryers .....27  
Hens—Leghorns .....22½  
Roasters, 3 lbs. and up .....25  
Ducks, lb. ....20½  
Squab, doz. ....4.00@5.00  
Roosters, old .....14  
Turkeys .....26@29  
Geese, lb. ....19

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning January  
9, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000 to 1100 lbs. 8.50@9.00  
Heifers, good .....6.00@6.50  
Cows, good .....5.50@6.00  
Canners .....4.50@5.00  
Hogs—  
Av. 125 lbs. ....14.50  
Av. 150 lbs. ....15.00  
Av. 175-200 lbs. ....15.50  
Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent.  
Prime wethers .....9.50@10.00  
Ewes .....9.00@9.50  
Lambs .....14.00@14.50  
Yearlings .....10.50@11.00

## POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....2.00@2.60  
Russets .....1.90@2.00  
Sweet, sk. ....3.85@4.00

## ONIONS

Wholesale selling price:  
Brown .....2.35  
White .....2.25@2.35  
Garlic .....7

## VEGETABLES

Wholesale prices:  
Artichokes, doz. ....1.25@1.35  
Beans—Wax .....13@14  
Limas, lb. ....16  
Ky. Wonder .....16@17  
Beets, sk. ....12½  
Brussels Sprouts, lb. ....12@14  
Cabbage, lb., 2; sk. ....13½  
Carrots, doz. ....30  
Cauliflower, doz. ....75@80  
Celery, cr. ....3.50@3.75  
Cucumbers—Hothouse, doz. ....1.50@1.75  
Egg Plant, lb. ....12  
Horseradish, lb. ....15  
Lettuce, doz. ....30  
Leeks .....30  
Mint .....40  
Onions, green, doz. ....25  
Okra, lb. ....13@14  
Peas, lb., Telephone .....14  
Peppers, Chili, lb., 8; Bell .....14@15  
Parsnips, doz. ....40  
Parsley, doz. ....20  
Pumpkins, lb. ....2  
Radish, doz. ....20  
Rhubarb—Strawberry .....1.25@1.35  
Romaine, doz. ....40  
Spinach, doz. ....25  
Squash—Crookneck .....70@75  
Hubbard, lb. ....2  
Tomatoes, cr. ....1.25  
Turnips, doz. ....35

## FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.50@1.60  
Greenings .....1.75  
Jonathan .....1.80@2.25  
King David .....1.75@2.00  
W. W. Pearmain .....1.35@1.50  
Spitzenburg .....2.25@2.75  
Y. Newton .....1.35@1.50  
Avocados, doz. ....6.00@9.00  
Bananas, lb. ....5¼@5½  
Grapes—Carnichon .....1.75  
Red Emperors .....2.50  
Pears, lug, 2.00; bx .....2.75  
Persimmons, lb. ....7@10  
Pomegranates, ½ bx .....1.80@2.00

## CITRUS

Lemons, 4.25@5.25; juice .....2.00  
Grapefruit .....3.00  
Limes, basket .....1.00  
Oranges—Navels, bx. ....5.00@5.25

## DRIED FRUITS

These are not prices to producers but  
prices made by wholesalers to retailers.  
(25-lb. bx., faced, 50s, ½c less.)  
Apples, evaporated, 50s, 16; extra ch., 16½;  
apricots, ch., 18; extra ch., 18½; fy., 19;  
pears, 12½; peaches, ch., 12; fy., 12½;  
peeled, 15; citron, 30 lb.; lemon peel, 25;  
orange peel, 25; prunes, 20-30s, 16½; 30-  
40s, 12½; 40-50s, 11; 50-60s, 10; 60-70s,  
9½; 70-80s, 9; 90-100s, 8.  
Figs—Bulk, 25 lb. bx., blk. \$2.75, wh.  
\$2.75; Callmyrna, 10 lb. bx., \$2.25.

## NUTS

Almonds—Not growers' prices but prices  
of wholesaler to retailer.  
I. X. L. ....23½  
N. P. U. ....22½  
Hickory Nuts, lb. ....10  
Peanuts, raw .....15  
Pecans, lb. ....19  
Walnuts—Cal. Walnut Growers' Associ-  
ation named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....18  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size  
as No. 1 Soft Shell) .....21  
Prices delivered in East 1¼c higher.

## HONEY

Prices of wholesaler to retailer:

Extr. White, lb. ....12@14  
W. W. lb. ....13@15  
Comb, case, W. ....4.00@4.50  
W. W. case .....4.80@5.00

## RICE

Wholesale quotations:

Cal. ....7.50  
Broken .....5.60@6.00

## BEANS

These are prices made by wholesaler to  
retailer.

Lady Washington .....13.00@13.50  
Limas .....13.00@13.50  
Pinks .....8.50  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small White .....13.00@13.50  
Blackeyes .....10.00  
Tepary .....9.00@10.00  
Lentils .....25.00

## HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oat .....27.00@29.00  
Volunteer Oat .....18.00@20.00  
Wheat .....23.00@26.00  
Barley .....26.00@29.00  
Alfalfa .....25.00@28.00

The Alfalfa Growers Association of  
Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where  
the \$1.50 freight rate applies, and \$29.00  
f. o. b. where the \$2.50 freight rate ap-  
plies.

## GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.

Alfalfa Meal .....1.95  
Alfalfa Molasses .....2.00  
Barley, Rolled .....3.20  
Barley, Recleaned, Whole .....3.25  
Barley, Hulled .....3.80  
Beet Pulp .....2.00  
Bran, Heavy .....2.25  
Coconut Meal .....2.50  
Cottonseed Meal .....3.40  
Corn, Yellow .....4.45  
Corn, White .....4.55  
Corn, Cracked .....4.50  
Corn, Feed Meal .....4.55  
Corn, Egyptian .....3.60  
Middlings .....3.25  
Milo .....3.15  
Oat Chop .....1.90  
Oats, White .....3.30  
Oats, Rolled White .....3.35  
Oats, Hulled .....4.75  
Oats, Rolled Chicken Groats .....4.85  
Olecake Meal .....3.65  
Wheat, No. 1 .....4.00@4.05  
Wheat, Cracked, No. 1 .....4.40  
Red Millet .....4.65@4.75  
Rye .....4.00  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Charcoal, 50-lb. sk. ....3.00  
Clam Shell .....70@80  
Grit, Granite .....75@85  
Oyster Shell .....1.45  
Sunflower Seed .....5.25  
Soya Bean Meal .....3.60  
Scratch Feed .....3.80@3.90  
Gritless .....3.90@4.00  
Rice Bran, ton .....40.00  
Middlings, ton .....45.00  
Rice Polish, ton .....49.00

## San Francisco Markets

San Francisco, Jan. 8, 1918.

## BUTTER

Dairy Exchange quotations, lb.:

Fresh extras .....51  
Prime firsts .....50

## CHEESE

Dairy Exchange quotations:

Cal Flats, 25½. Y. Am. ....26@27½  
Ore. Young Am. ....24  
Jack cheese, full cream .....26@27  
Half skim .....14@17

## EGGS

Extra .....51  
Selected Pullets .....50

## POULTRY

We quote from producers, lb.:

Hens, large, 29@30; Leghorns .....27@29  
Small Colored .....27@29  
Broilers, 1-1¼ lbs., 45; 1¼-1½, 40; 1½-2,  
35@38, 2-3, 28-34.  
Roosters .....27@30  
Squabs, doz. ....4.00@5.00  
Ducks .....17@22  
Geese .....19@22  
Belgian Hares, live, lb. ....20@22  
Turkeys, dr. ....32@36

## LIVESTOCK

Prices gross weight:

Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾c  
more.  
Steers, lb. 8¼@10; undesirable, 6@8;  
cows and heifers, 7@8¼; undesirable, 4  
@6; calves 7@9½.  
Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 14½; 140 to 175 lbs., 15; 175 to 300  
lbs., 15½.  
Sheep—Wethers, 12@12½; ewes, 9½@  
10½; lambs, 12½@16.

## POTATOES

Wholesale selling prices at wharf:

Ore., Wash. Burbanks .....1.75@2.00  
Salinas Burbanks, cwt .....2.75@3.00  
River .....1.50@2.00  
Sweets, cwt. ....3.90@4.00

## ONIONS

Wholesale selling price on wharf:  
Australian Brown, cwt. ....2.00@2.25  
Bermudas .....2.75@3.00  
Garlic, lb., new .....4@5

## VEGETABLES

Wholesale selling price.

Artichokes, doz. ....40@75  
Beets, sk. ....1.25@1.50  
Beans, string, lb. ....8@12½  
Brussel Sprouts, lb. ....5@6  
Carrots, sk. ....90@1.00  
Celery, cr. ....2.25@2.75  
Cucumbers, Hothouse, bx. ....2.00@2.25

Egg Plant, lb. ....6@10  
Lettuce, cr. ....1.25@2.00  
Peas, lb. ....7@15  
Parsnips, sk. ....1.00@1.25  
Peppers, Bell, lb., 7@10; Chili .....4@6  
Pumpkins, sk. ....85@1.00  
Rhubarb, bx. ....1.50@1.75  
Squash—Marrowfat, sk. ....75@85  
Cream, lug .....1.00@1.25  
Hubbard, sk. ....1.00@1.25  
Tomatoes, lug .....75@1.25  
Southern, cr., 1.00@1.35; Mex. 2.25@2.50  
Turnip, sk. ....90@1.00

## FRESH FRUITS

Strawberries, ch. ....6.00@9.00  
Pears—Winter Nellis bx., 2.00@2.50;  
winter pears, 1.00@1.50.  
Apples—Spitzenburg, 1.75@2.50; Red  
Pearmain, 70@1.00; W. W. Pearmain,  
1.10@1.50; Newton Pippins, 1.00@1.50.  
Avocado, doz. ....1.00@3.50  
Citrus Fruits—Lemons, bx. fy., 4.50@  
6.50; ch., 3.50@5.00; lemonettes, 1.25@2.50;  
grapefruit, 2.50@3.00; ch., 2.00@2.50. Tu-  
lare seedless limes, half orange bx., 2.00  
@3.00. Oranges: Bx. Navels, ch. to fy.,  
3.00@5.00; culls, 2.00@2.50; mandarin or-  
anges, half orange bx., 2.00@3.00; tan-  
gerines, half bx., 2.00@3.00.  
Pomegranates—One-half orange bx.,  
1.75@2.00.  
Persimmons—Bx.: 1.25@1.50.  
Pineapples, doz., 5.00@6.00.  
Olives, ton, 160.00@200.00.

## DRIED FRUITS

Not producers' prices but prices of  
wholesaler to retailer.

Peaches—Unpeeled, lb. standard, 9½;  
choice, 9½; extra choice, 10; fancy, 11.  
Figs—In 50-pound boxes, per pound  
White Adriatic, standard, 8½; choice,  
9½; extra choice, 10½; fancy, 11½; Cal-  
myrna, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 13½;  
ch., 15; extra ch., 15½; fy., 16½; extra fy.,  
17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—60s to 90s, 6½ basis; 50s to  
60s, ¼c premium; 40s to 50s, 1¼ prem  
ium.  
Apples—In 50-pound boxes, lb.: Fancy  
15½; ex. ch., 14½; ch., 14½.  
Pears—Bulk basis, lb.: Fancy, 10½;  
ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cases: Sun Maid, seeded, 16-  
oz. cartons, \$4.20 for 48s and \$3.15 for 36s;  
fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-  
oz. 45 to cs. \$5.25; ch. 16-oz. cartons, \$3.00  
for 36s; do, 12-oz. cartons, 45 to cs. \$3.10.  
In bulk: Sun Maid, \$1.75; fy., \$1.90; ch.,  
\$1.75.  
Sulphur-bleached Thompsons, extra fy.,  
\$5.37½; fy., \$5.12½; ch., \$4.87½; soda-  
bleached, \$4.75.  
Loose: One-crown, \$4.15; 2-crown,  
\$3.40; 3-crown, \$3.65; 4-crown, \$3.20.

## NUTS

Almonds—Cal. Almond Growers' Exch.  
Gross prices: Nonpareils, 21½; I. X. L.,  
19½; Ne Plus, 18½; Drakes, 16; hard  
shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts .....11@12½  
Pecans, lb. ....19@20  
Pine Nuts .....19@20

## HONEY

Comb, W. W., lb., 18@20; Amber, 17@18  
Extr. W. W. Alfalfa .....20  
W. W. Sage .....21  
Lt. A. Alfalfa, 18; do Sage .....21  
Amber Sage .....19  
Beeswax, lb. ....38@40

## BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....12.60@12.75  
Bayous .....8.50@8.75  
Small Whites .....12.00@12.25  
Mexican Reds .....8.50@8.75  
Large Whites .....11.25@11.50  
Pinks .....7.40@7.60  
Blackeyes .....8.00@8.25  
Red Kidney .....13.00  
Cranberry .....11.75@12.00

## HOPS

Per lb.: California crop of 1917, 28@  
33; on contracts, spot, 1916 crop, 18@22  
old, 8@15.

## RICE

California rice, new crop, cleaned, 100  
pound head rice, 6.45@6.65; brewers, 5.10;  
screenings, 5.37½.  
Rough rice, 100 lbs., 3.50@3.60 to grow-  
ers at shipping points.

## HAY

Under date of January 5, Scott, Mag-  
ner & Miller says:

Receipts of hay for past week were  
1411 tons. A large part of these arrivals  
have been for government account for ex-  
port to the Philippines and Hawaii. That  
part for local consumption has been small  
with the result that the market has been  
very firm and although no increase in  
prices can be noted there has been no dif-  
ficulty in moving receipts at our top  
quotations. An order for 50 carloads for  
shipment to New Mexico was placed dur-  
ing the week. Troops are being ordered  
to Camp Fremont and without doubt  
some hay will move in this direction  
shortly.

The lack of rain is very serious. Stock-  
men are complaining bitterly of the lack  
of pasturage, and baled hay has been  
shipped to all sections in order to keep  
cattle from starving. Unless rains come  
very soon conditions may be worse than  
we have seen for many years. Stocks of  
hay on hand in the country districts are  
being drawn upon very heavily and  
warehouses are showing the result.

There is nothing new in regard to the  
food administration in Washington and  
the placing of more or less restrictions on  
the hay trade. This is looked for short-  
ly and without doubt will have consid-  
erable effect. It is understood that all  
dealers will be licensed and will have to  
make monthly reports of stocks on hand,  
sales, etc., to the food administration.

There is little movement in straw, al-  
though much rice straw has been ar-  
riving. The alfalfa market is very firm  
under a heavy demand.  
We quote today wholesale prices in  
carload lots as appear from dealers'  
transfers. For prices to consumers  
charges of cartage, commission and han-  
dling must be added according to condi-  
tions.

Fancy Wheat Hay  
(light 5 wire bale) .....29.00@30.00  
No. 1 Wheat or Wheat and  
Oat Hay .....26.00@28.00  
No. 2 Wheat or Wheat and  
Oat Hay .....23.00@25.00  
Choice Tame Oat Hay .....27.00@27.50  
Other Tame Oat Hay .....23.00@25.00  
Wild Oat Hay .....23.00@25.00  
Barley Hay .....24.00@26.00  
Alfalfa .....24.00@27.00  
Stock Hay .....20.00@22.00  
No. 1 Barley Straw .....60@90

## GRAIN

Grain Exchange prices, ctt.  
Corn, Cal. Yellow, cwt. ....3.30@3.40  
W. Egyptian, 3.20@3.25; Brown 3.05@3.10  
Barley, Feed & Brewing, cwt. 2.85@2.87½  
Milo .....3.05@3.20  
Oats, Red Seed .....3.00@3.25  
Feed .....2.77½@2.85  
New Black .....3.40@3.60  
Wheat—Government prices: Common  
white hard, base price is \$3.50 per centar-  
or \$2.10 per bushel of 60 pounds deliv-  
ered in terminal warehouses in bulk; soft  
wheat, base price 2 cents per bushel less,  
or \$2.08 per bushel; white club (including  
Sonora), \$2.06 per bushel. If wheat, af-  
ter cleaning, weighs 60 pounds or more to  
bushel, base price stands; if 58 to 60  
pounds to bushel, 3 cents per bushel re-  
duction; if 56 to 58 pounds, 6 cents per  
bushel less; if less than 56 pounds, grain  
becomes sample grade and sells on its  
merits up to within 1 cent per bushel of  
56-lb. wheat. Sacked wheat 4 cents per  
bushel more, less tare for weight of  
sacks.

## FEEDSTUFFS

Wholesale prices per ton:  
Bran .....38.00@40.00  
Cornmeal .....81.00@82.00  
Cracked Corn .....81.00@82.00  
Coconut Meal .....45.00@46.00  
Middlings .....50.00@54.00  
Alfalfa Meal .....32.00@33.00  
Rolled Barley .....58.00@60.00  
Shorts .....41.00@42.00

## SEEDS

Prices in round lots, lb.:  
Millet, recleaned .....4½@5  
Alfalfa .....20@21  
Flax .....6@6¼  
Rape .....2½@3

## Citrus Fruit Market

Los Angeles, Jan. 9, 1918.

The blizzard has seriously interfered  
with handling of fruit and great quan-  
tities have been frozen in transit or on  
siding. The injured fruit is being dis-  
posed of as rapidly as possible and is af-  
fecting the market. Lemons have sold at  
especially distressing prices in certain in-  
stances. Weather is clearing and per-  
fectly sound fruit is yet meeting fair de-  
mand.

## Shipments

Total shipments of citrus fruits from  
California since November 1, 1917. South-  
ern California, oranges, 2250, lemons 566,  
total 2816. To same date last season, or-  
anges 2803, lemons 798, total, 3601. Cen-  
tral California, oranges 1764, lemons 76,  
total 1840. Same date last season, 3746  
oranges, lemons 117, total 3863. Northern  
California, oranges, 197; last year 838.

## AT THE AUCTIONS

January 2  
New York: 6 Nav. 6 Lem. but few  
sold on account of cold. Nav. \$2.60-  
\$4.40.  
Boston: 6 cars, lower. Nav. \$1.60-  
\$5.10. Lem. \$1.70-\$4.35.  
Cleveland: 5 cars, lower. Nav. \$3.45-  
\$5.30. Lem. \$3.50-\$5.25.  
St. Louis: 1 Val. 1 Lem. Val. \$4.15,  
Lem. \$3.00-\$4.15.

January 3  
New York: 5 Nav. 1 Val. 5 Lem. Many  
lemons frozen in car. Nav. \$3.30 to  
\$4.50. Lem. \$1.65-\$3.50. But few selling  
at high figure. Val. \$3.30-\$3.80.  
Boston: No sale account blizzard.  
Philadelphia: Only 1 car sold. Lemons  
frozen in transit, selling \$1.50-\$2.80.

January 4  
Cleveland: 2 Nav. \$3.05-\$4.50. No lem-  
ons sold.  
St. Louis: 2 Val. \$3.20-\$3.95.

January 8  
New York: 2 Nav. 3 Lem. Weather  
better, market higher. Nav. \$3.85-\$5.70,  
Lem. \$2.40-\$3.85.  
Boston: 3 cars. Nav. \$2.65-\$4.20.  
Philadelphia: 1 Lem. \$3.60-\$4.45.

## ORTHODOX

"If St. James's Bible was good  
enough for St. Paul, it is good enough  
for me." This was the emphatic pro-  
test of a New England deacon against  
the reading of the Revised instead of  
the King James version.—Congrega-  
tionalist.

## HIS TRAINING

"Well, boy, what do you know? Can  
you write a business letter? Can you  
do sums?"

"Please, sir," said the applicant for  
a job, "we didn't go in very much for  
those studies at our school. But I'm  
fine on beadwork or clay modeling."—  
Louisville Courier-Journal.

## INCREASE THE YIELD

Dr. Wm. S. Myers of the Nitrate Prop-  
aganda writes as to what nitrate has  
done, in fact, he issued booklet touch-  
ing upon this question and giving re-  
ports of various experiments, especially  
as to the state experiment stations. The  
booklet may be had by writing to Dr.  
Myers, 25 Madison Ave., New York City.



MONTHLY WEATHER AND CROP REPORT

In the northern half of the state the rainfall, while deficient, has been sufficient to start a new growth of grass and to sprout wheat and barley, which is coming up to good stands. In the southern half the rainfall has been so little that pasturage is very poor, and scarcely any wheat and barley has come up, and that which has germinated has a poor color. It is getting too late to do much toward increasing the acreage of wheat in this section, although there is much land available for this crop. Should good rains occur in January the acreage in barley will be greatly increased. In many of the southern counties pasturage is extremely scarce and considerable stock have died. Hay is hard to get and besides it is very expensive. In the coast counties there have been a good many foggy mornings and the consequent dampness has been beneficial; but good soaking rains are badly needed in this section, as well as in the interior south of the delta counties.

The dry weather has interfered somewhat with the cultivating of the land for beans. Irrigated truck crops are doing well as there have been no damaging frosts. But few early potatoes have been planted as yet, and the old crop has all been dug and marketed.

Pruning and spraying have begun in many of the deciduous orchards and the weather has been favorable for this work. Citrus fruit is ripening nicely and, while the crop is light, the sizes are extra good and the gathering of oranges and lemons is progressing under favorable conditions. Olives have nearly all been picked and the losses by late frosts were small.—E. A. Beals, District Forecaster.

MARKET NOTES

Imperial reports decreased planting of cantaloupes.

Even exceptionally high prices do not prevent shipping of California butter to Eastern markets.

The East is calling for more California celery, and high prices are being received.

Mexican tomatoes in Los Angeles markets are bringing around \$2.50. Arrivals some days are as high as two cars.

Cotton is soaring higher than ever. Thirty cents is promised before many days.

Many truck farms of South Atlantic states are buried under snow. How much the damage will be will not be known until it melts away. So far as can be judged South Carolina reports cabbage not more than 45 per cent of normal, lettuce 50 per cent. Florida's last report shows cabbage 78 per cent compared with 85 month preceding; strawberries, 75; tomatoes, 65; peppers, 50. The weather has not only been cold but very dry. Louisiana: Lettuce, 77; onions, 72; cabbage, 77; strawberries, 65; turnips, 80. Onions are being transplanted. The last severe frost in Louisiana was on December 31 and was very severe. Texas: Cabbage, 50; lettuce, 40; onions, 90.

All Southern Texas was visited by severe frost December 29.

California conditions as reported by bureau of markets: Artichokes, 85; cabbage, 82; carrots, 89; cauliflower, 70; celery, 79; lettuce, 78; onions, 87; spinach, 88; strawberries, 87; tomatoes, 86.

Earliest planted cantaloupes in Imperial Valley already up.

NITRATE FOR FARMERS

David F. Houston, secretary of agriculture, today made the following statement regarding the purchase of 100,000 tons of Chilean nitrate for fertilizer use by farmers under the provision in the food control act which authorizes the president to procure nitrate of soda for this purpose and to supply it to farmers for cash at cost:

"I have been giving a great deal of thought and attention to the nitrate question. I have been in daily touch with the war industries board, which was to purchase and deliver the material at the seaboard, and also with the shipping board. Arrangements were completed several weeks ago, through the war industries board under the immediate supervision of Mr. Baruch, to purchase approximately 100,000 tons of nitrate of soda in Chile in accordance with the authorization for such purpose in the food control act. Because of disturbed condition, it has been impossible until recently definitely to secure facilities for transporting the nitrate in whole or in part. Within the last few days preparations have been completed for the delivery at the seaboard during January of 18,000 tons, and every reasonable assurance has been given that supplies, up to the 100,000 tons, for the ensuing months will be delivered. Every possible effort will be made to make certain these deliveries, but it should be understood that, on account of existing situations, circumstances over which there is no control might intervene.

"I cannot state today exactly what the price will be, but it will be approximately \$75 on board cars at the seaboard. Farmers will have to pay freight charges to their local stations, the state fertilizer tag fee, which varies in different states but will probably not average more than 25 cents a ton, and any other local charges.

"The nitrate secured under the appropriation will be sold only to farmers for their own use during the coming season, and generally not in excess of the amounts used by them heretofore. The department is now arranging machinery for the distribution of the material and will give full publicity concerning the details of the matter."

BRIGGS IS BACK

Briggs, C. A., is again on the job seeing live stock men in the north and central parts of California.

Mr. Briggs has purchased a little farm in the rich bottom lands near Sacramento. Pure bred Jerseys will be his hobby, but he will be able to talk all kinds of live stock and for the California Cultivator to breeder and farmer.

WEATHER CONDITION

San Francisco, Cal., January 5, 1918				
	Wc	Humid	Norm.	Max Min
Eureka	.18	8.38	17.93	62 44
Red Bluff	.00	3.46	19.48	62 40
Sacramento	.00	1.20	7.57	48 40
San Francisco	.00	1.55	8.91	56 44
San Jose	.00	1.08	6.03	61 34
Fresno	.00	.49	3.85	54 38
San Luis Obispo	.00	.71	6.63	54 38
Los Angeles	.00	.42	5.63	54 44
San Diego	.00	.25	3.41	78 46

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Statement of Condition of the

FIRST NATIONAL BANK of LOS ANGELES At the Close of Business, December 31, 1917

RESOURCES

Loans and Discounts	\$26,144,198.19
Bonds, Securities, etc.	3,127,424.55
United States Bonds to secure circulation	1,259,000.00
Furniture and Fixtures	175,000.00
Real Estate Owned	62,179.10
Customers' Liability Under Letters of Credit	148,143.06
Other Assets	1,844.39
Cash and Sight Exchange	9,619,764.03

Total

\$40,568,557.32

LIABILITIES

Capital Stock	\$1,500,000.00
Surplus and Undivided Profits	2,734,004.44
Circulation	1,202,007.50
Reserved for Taxes, etc.	72,742.95
Letters of Credit	166,899.41
Notes and Bills Rediscounted	1,760,000.00
Deposits	33,131,913.92

Total

\$40,568,557.32

INTEREST PAID ON TIME DEPOSITS

COMPLETELY EQUIPPED SAFE DEPOSIT DEPARTMENT

I, W. T. S. Hammond, Cashier of the above named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

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Stoddard Jess  
E. D. Roberts  
John P. Burke  
John S. Cravens

J. C. Drake  
Frank P. Flint  
M. H. Flint  
C. W. Gates  
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Are you content to see others seize the golden chances that are offered now and the untold chances that are coming in the next few months? Or will you join your neighbors who are moving at motor-car pace?

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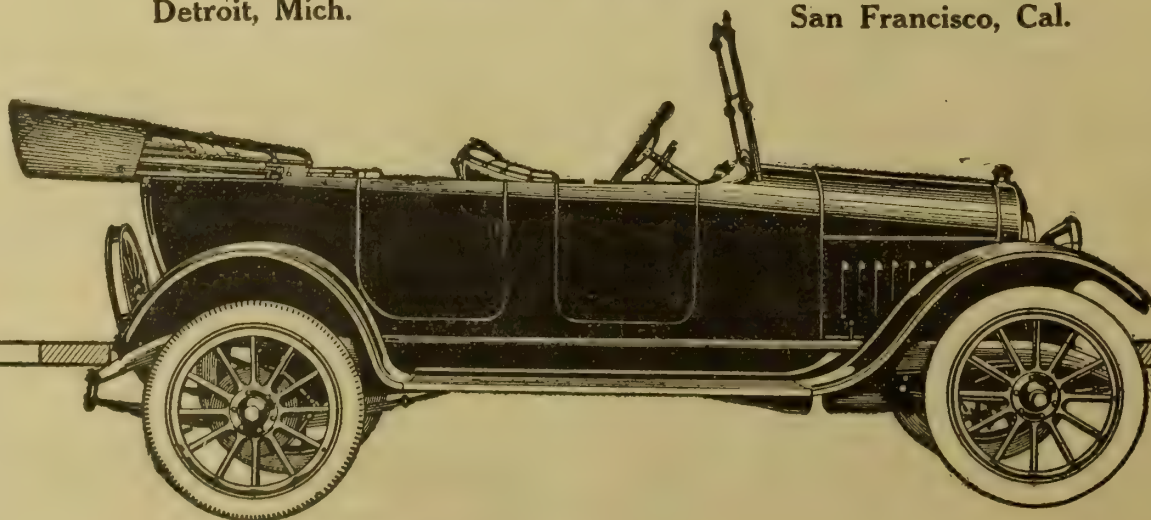
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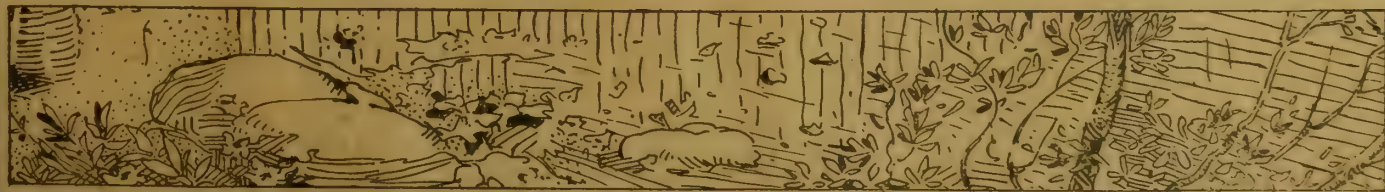
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LOS ANGELES

January 19, 1918

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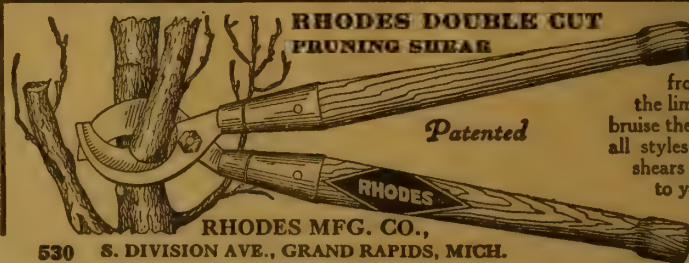
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# California Cultivator

Vol. L, No. 3

LOS ANGELES: January 19, 1918

One Dollar Yearly

## Southern California Mid-Winter Poultry Show

Jean A. Koethen Strolls Through Poultry Show and Reports for Cultivator Readers as to the Entries Which Make Up One of California's Most Significant Exhibits.

**T**O SAY that this show of 1918, which has now passed into history, was the best ever staged in Los Angeles, would not mean much, for that word "best" has been overworked and misused till it has no meaning left. To say that it was altogether the most significant show in ten years and notable both for the variety of birds shown and their high quality, is still doing scant justice to the energy of the management and the enthusiasm and perseverance of Southern California breeders.

This show was significant because it was a challenge to untoward conditions. "We are not beaten and we won't be beaten" was the slogan inscribed on its banner. English fanciers the first year of the war were so panicky over the cost of feed that



Orpingtons in number, and Rocks of all colors stood third. To be exact, there were 162 Orpingtons of all colors, 154 Rhode Island Reds, and 101 Rocks, with the Barred variety ahead, but not so far ahead as it sometimes is.

Another significant feature of this show was the attention paid to utility features. The egg contest, in which eggs of various breeds, carefully selected for size and uniformity, held an important place on one of the side counters, and several breeding yards of strictly bred-to-lay birds were shown. Even the aristocratic Orpingtons, leaders in exhibition qualities, were placarded with the legend, "They lay when eggs are dear." If fine feathers have any reason for being, it is because they cover real utility qualities.

Minorcas were a smaller class than usual, and, what was rather surprising, the buffs nearly outnumbered black and white together. White-faced Black Spanish were a larger and better class than usual, as were Andalusians. Anconas were a good class, not so large as in some previous shows, but containing fine birds. Rhode Island Whites, which three or four years ago were seen for the first time, are growing in popularity but will never compete with the Reds, whose brilliant dark coloring makes Red Alley one of the most attractive features of every show.

Wyandottes are never a very large class, though why it would be hard to say. There was the usual variety of colors—White, Columbian, Buff, Partridge, and a very handsome pen of the Golden Laced variety. A particularly fine breeding yard of Golden Pencilled Hamburgs attracted no little attention, and there were a few of the Silver Pencilled. Hamburgs may well be classed among those utility breeds which for some reason or other have been compelled for so long to sit in the seats of the fancy that their utility qualities are almost forgotten. There is no handsomer fowl than the Hamburg, and no better layer.

The display of White Leghorns consisted mainly of half a dozen very handsome males, but the White Leghorn is a bird that does not need to be shown to have its qualities known. Brown Leghorns were an unusually

good class. If I am not mistaken those which were shown here last week took prizes a year or so ago at Madison Square Garden. There was a sprinkling of Cornish, Langshans, Buttercups, Speckled Sussex, and Houdans, and the best string of Pit Games ever shown in Los Angeles. Japanese Silkies, which are usually considered merely a curiosity, were out in such numbers as to suggest a suspicion that they may after all have some utility qualities, and in one corner near the door several cages of handsome pheasants attracted much notice.

Of making new breeds there seems to be no end. Two were introduced to the public at this show, a breed called the Golden Gate, which looks something like an extra sized Sicilian Buttercup, and another called the Ovo Grande, which, as its name indicates, is more remarkable for its large egg than for anything else.

When I attend the mid-winter poultry show I always make a list of the different varieties of bantams, and I never fail to find at least one new one. The list this year comprised Buff, Black and White Cochins, Golden Pencilled Hamburg, Silver Pencilled Hamburg, Indian Game, White Polish, Rose Comb Black, Red Pyle Game, Golden and Silver Duckwing Game, and Black Breasted Red Malay. Perhaps it was because I was accompanied by my 11-year-old daughter, who was attending a poultry show for the first time, that I noticed more than I had before the rare beauty of some of these little creatures. Her eyes opened wider and wider at every new proof of the fancier's skill. If there is any breed that has not been bantamized, it is because no one has yet tried.

Toulouse Geese were an unusually fine class. There were five varieties of ducks and two of Guineas, and the turkeys were magnificent. One bronze tom was said to weigh 50 pounds, and the color of the whole class (there were 20 in all) was almost perfect. Bourbon Reds were unusually strong, and there was one splendid White Holland tom. If this fine showing of turkeys indicates increased interest in their culture in our climate, which is so well suited to it, the poultry industry is to be congratulated.

Utility Contests Attract Much Attention. Slogan Inscribed: "We Are Not Beaten and Won't Be Beaten." Fancy's, Games and Bantams Not Large Exhibit but High Quality Stock.

The second floor of the Coulter Building on Broadway, in which the show was held, was given over to rabbits and pigeons. Far be it from me to attempt to give a complete list of either of these claimants to favor. Among rabbits there were Flemish, Giants, Himalayan, New Zealand, Short Hair, Long Hair, English Lop, Blue Vienna, Fur Bearing Rabbits, and dozens of cute little covies, and who knows how many more? The important thing is, that they are nearly all raised for meat, and that the rabbit is coming more and more to take the place of beef and mutton and pork.



Handsome Lookers—Handsome Doers

A prize winning White Wyandotte male and mate, owned by Arthur W. Huskins.

A few rabbit hutches and a chicken pen in every back yard will go a long way toward supplying meat for the family.

According to the papers, there were in the show 400 rabbits and 700 pigeons. Of the latter, there seemed an endless variety: birds with bills and birds with none; pouters that seemed all crop and muff; Tumblers that were all feet; Frill Frocks with ruffled plumage, and Monks and Nuns with their queer cowls and hoods; Carriers which really carry messages, and Homers that know the way home no matter where they are; Helmets and Blondinettes and Carreaux and Runts and Kings; pigeons black and white and white trimmed with black and black trimmed with white, and buff and mauve and brown and purple and fawn and all colors together. And all these, too, are good to eat, and all, as occasion requires, are going to help conserve our meat supply and defeat Kaiser Bill.

### Special Awards

The Rural World sweepstakes cup for finest display in the show was won by W. J. Stewart of Ramona Park, who entered 54 Orpingtons. The

Continued on Page 84



Winner of the Blue

First Buff Orpington hen at Los Angeles Midwinter, owned by W. J. Stewart. This is her third consecutive winning of first at this show.

shows were almost abandoned. They found afterward that that would not do, and our California fanciers, heeding the lesson, are holding on from the very beginning to all they have gained by years of work and study.

It was significant also because of the predominance in the exhibits of the dual-purpose breeds. Orpingtons have always been good show birds, but there was a time, some three or four years ago, when Orpington Alley was inconsequential beside the display of Leghorns and Anconas. "Oh, the bottom has dropped out of the Orpingtons," I heard a judge say then. If the bottom ever did drop out, hard times and high prices of meat have put it back, and in this show Orpington Alley made the short strings of Mediterraneans seem insignificant. Light Brahmas, which last year for the first time had a place worth while in the show, were an increasingly large exhibit this year, and Black Cochins were introduced for the first time to Los Angeles poultry lovers. Rhode Island Reds, which, like the Orpingtons, stand high as both meat and egg producers, came second to



## The Pistache in California

Written for California Cultivator by Claud D. Tribble



**P**ISTACIA vera is a native of Asia Minor, Palestine and Syria, therefore it would seem that the interior valleys and foothills of the San Joaquin and Sacramento, and probably the irrigable dry portions of Southern California, would furnish nearly the same conditions for growing this tree. So far as we have been informed, the pistache has only been tried under such conditions, and under any other conditions the experimenter should not go to any great expense until he is assured of success. The *P. vera* is a dry land tree and requires less irrigation than any of our orchard fruits and nuts and if planted on reasonably good soil and the very best cultivation maintained very little if any irrigation will be required.

Most of the stocks used are from semi-tropical countries. These include the *P. terebinthus*, *Atlantica*, *lenticus*, *Mexicana* and *mutica*. The *P. Chinensis* is said to withstand considerable low temperature, and its native home extends from the basin of the Yangtse River and Shangtung Peninsula to the northern districts of Peking and grows at altitudes of several thousand feet and is said to be the hardiest species of the pistache. However this stock does not grow as rapidly as the *P. vera* grafted and is not. We have buds of the *P. vera* on the *P. Chinensis* that are now four years old and three times as large as the stock, and the top is dwarfed by the slow growth of the *P. Chinensis*.

Another pistache species the *P. integerrima*, is a native of the Himalaya Mountains and grows as high as 8000 feet above sea level but this has not been tried as stock for the *P. vera* so far as we know.

### Preparation of the Seed

While we have very good success in

growing seedlings by planting in the fall directly from gathering the following method is employed by R. L. Beagles of the Chico plant introduction garden.

"Seeds containing any oil coating we put through a solution of lye, so as to cut the greasy coat on them, making the lye about one part to 50 parts of water, letting them stay in for 48 hours and then wash them thoroughly,

lay seeds on the surface, pressing them down with the palm of the hand, then cover with walnut leaves and when they start to sprout transfer to nursery row.

The roots of the young pistache tree, especially the *Atlantica*, grow in a much twisted manner straight down and without any branches, after the second year or when they are placed in orchard form they make the side roots and usually run deep into the soil. It would seem that the ground for the nursery should be good deep soil.

At two years old the trees may be



Pistache Tree at Morganhill

There are many varieties of Pistache in the Leonard Coates Nurseries. Standing by the tree is Mr. Coates, Jr.

drying and putting them in stratification. We usually stratify on the green house bench most of our pistache seed until they are ready to germinate and then planting in the nursery row. We also do considerable growing in lath houses or seed beds where we can use top sprinkling and never have much trouble if our seed are good and fresh."

Our own method is to fill shallow boxes with sand and rich soil well mixed and settle this by shaking, then

grafted or budded in the nursery row or planted in orchard form and grafted later. The regular nursery shield budding and the ordinary grafting work well on the pistache stock.

The first two or three years, if planted on very shallow soil, the pistache is subject to sour sap under unfavorable conditions, but after three years we have never lost a tree.

On fairly good soil the trees should be planted about 25x25 feet, or 75 trees per acre, and the proper time to

plant would be the same as for ordinary orchard trees, and our preference would be from February 15 to March 15.

The pistache requires good cultivation and will, under most conditions, require a small amount of irrigation. G. P. Rixford advises that the pistache should at ten years produce from 25 to 100 pounds per tree, this is of nuts in the shell, and that it takes about three pounds of nuts in the shell to make one of the shelled. From our small experience the kernels and shells weigh about the same when perfectly dry.

In growing the young pistache tree it is necessary to keep off the lower limbs to make it grow upright and the trees in orchard form may be grafted about four years from setting out. Ordinary cleft grafting done in March and April is successful as is budding done in May to September.

The *Atlantica* seed will probably be difficult to obtain as most experimenters, like ourselves, have grafted nearly all stocks to the supposed good *P. vera* varieties.

Our best commercial varieties are the Trabonella and Large Red Aleppo as given in my article in the California Cultivator of November 24. We also have another good unnamed variety. The scions came to us unnamed.

The seeds of the *P. Atlantica* are very small and a pound contains several hundred seed.

There have been seedlings of the *P. vera* sold by some of the nurseries for many years but these have not been a success as commercial nuts owing to their having white meat and the *P. vera* as a stock is too slow growing and too dwarf.

The grafts will require stakes or laths to train the limbs properly and keep from blowing out, and the tendency of the *P. vera* is to grow downward or to droop and it will require prompt attention and proper pruning to make a properly headed tree.

### RAISIN MEN RAISIN' CAIN BY NOT SIGNING CONTRACT

Association Appeals to Growers to Save the Industry

January 10, 1918.

TO EVERY MAN who believes that the Associated Raisin Company should be continued:

It is with a feeling of very great disappointment that we announce to you that our ambition to close this campaign by January 10 has not been realized. Two years ago we were able to close the campaign 20 days ahead of time. With the universal commendation of our new contract, and the great number of contracts that poured into our office the first few days, we were led to believe that it would be possible to do the same thing in this campaign, but in this conclusion we were mistaken, and what seemed to be an easy task at first now seems to be a very difficult one.

On January 1 we announced that we had 88,000 acres under contract, and today we have 97,000 acres, which means that even with the very great effort that has been put forth within the past ten days less than 1000 acres per day have been signed up. If this same progress should continue until February 1 we would be 10,000 short of the required amount.

It is impossible for us to believe that this community is going to let a few thousand acres stand between them and prosperity for six years, and this letter is to sound a note of warning, as it will be absolutely necessary to "shift gears and get into high speed" without a day's delay if victory is to be ours.

As pointed out in our letter of January 1, the work is becoming more difficult each day, as the field is more restricted and the opposing forces are becoming stronger and more active; so again we appeal to every grower who has not yet signed a contract, to do so without delay. Many people are



## Olive Trees

such as these are grown only on our foot-hill locations. ~ Note the good roots ~ for hardiness they have no equal.

We have a fine lot of Mission and Manzanillo trees, both on Picholine roots and grown from cuttings. We have had splendid success on all Olive plantings—a most important assurance to you.

Submit a list of your tree wants for special quotation. Do it right now.

We have also a complete assortment of Shipping Plums, Cherries, Prunes, Bartlett Pears, Fall Pears, Peaches, Almonds, Apricots, Walnuts, etc.

Our foot-hill grown trees are free from root diseases common to other localities. Our trees insure your future profits in fruit growing.

And remember—we will accept Liberty Bonds as full or part payment for trees. Write us today.

Address Dept. J

*J. E. Bergtholdt*  
Secy. and Mgr.

**SILVA-BERGTHOLDT CO.**  
Newcastle-Cal.  
"LIBERTY BOND" Trees

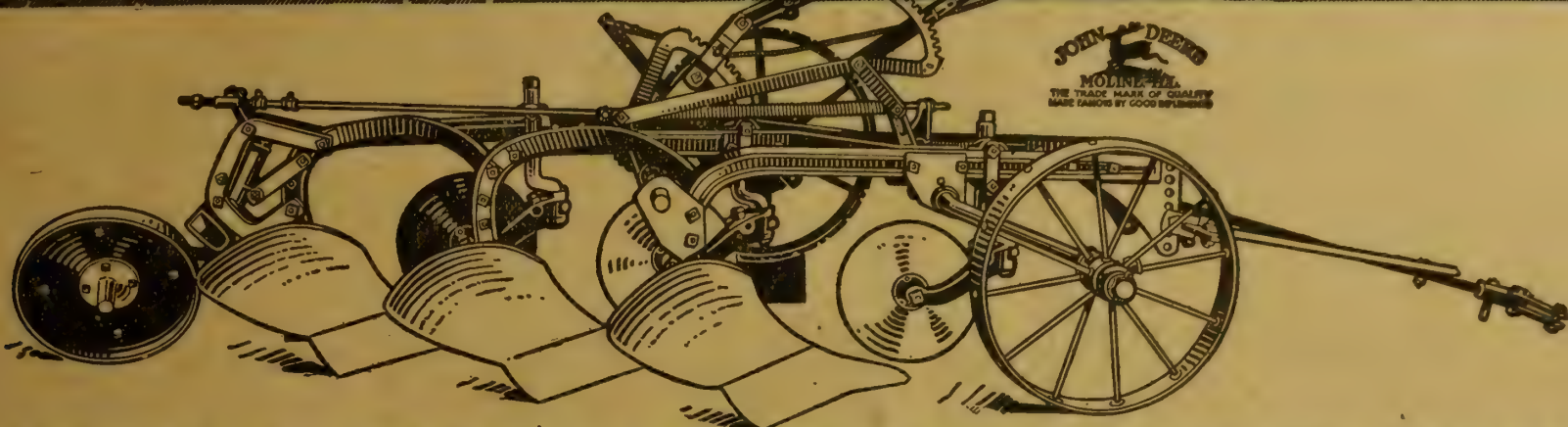




No Knife  
Is Better  
Than  
Its *Blade*



No Tractor  
Plowing Outfit  
Is Better Than  
Its *Plow*



## JOHN DEERE TRACTOR PLOWS

**I**N the all-important work of making seed beds your tractor will furnish only power. Your plow will apply this power. The direct work of making the seed bed—the source of your profits—will depend upon the plow. You need, above everything else, the best tractor plow you can get. John Deere Tractor Plows, *for use with any standard tractor*, have a special attraction for you as you consider the importance of plow value to tractor power value.

Eighty years of the most successful experience in plow-making is behind John Deere Tractor Plows. A trademark, made famous by good implements—as an assurance of special quality—is on these plows. This means a lot to you.

### Get These Books

Write today for our free booklet describing fully both the No. 5 and No. 6 John Deere Tractor Plows. It has a message on tractor plow value that you will find profitable to you. Ask also for our big free book "Better Farm Implements and How to Use Them." Its 156 pages describe a full line of labor saving implements—tells how to adjust and operate them. It is full of practical information that will help you. Put it in your library. Use it as a reference book. It will be worth dollars to you.

To get these books, indicate the implements in which you are interested and ask for package T.P.-14.



### John Deere Bottoms Insure Superior Seed Bed Making

In a particular way, John Deere Tractor Plows offer an attraction to you because of their superior bottoms. Bottom quality, you know, makes plow quality. The distinctive bottom quality that features John Deere Tractor Plows is secured by using only highest grade materials and extreme care and skill in adapting these materials.

You will find this superior bottom quality evident in the exceptional service that John Deere Tractor Plows give—in long life, in scouring, in pulverizing the soil, in covering trash, in turning the furrow-slice with the least possible resistance and in making uniformly deep, roomy, compact seed-beds.

### Save Time, Labor and Upkeep with John Deere Tractor Plows

In addition to their direct advantages for better seed bed making, John Deere Tractor Plows co-operate fully with the tractor for rapid, fuel-saving work. You control them from the tractor seat. They require little or no watching. Their extra clearance and scouring qualities prevent clogging. Their bottoms lift high and level for turning. The location of the axles causes the bottoms to reach full depth quickly and stay in the ground. Their John Deere Quick Detachable Shares can be removed by unscrewing only one nut and can be replaced as

easily. Their perfect balance and bottom qualities make them extremely light running. They have no chains or sprockets to cause trouble in the field. Every part is as strong as the best of material and the best of workmanship can make it. John Deere Tractor Plows are used successfully with any standard tractor. If your tractor is of the large type you will want the No. 6 plow, carrying three or four bottoms. If your tractor is of the smaller type you will want the No. 5 plow, carrying two or three bottoms.

John Deere, Moline, Illinois



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SHADE AND ORNAMENTAL TREES

Twenty-nine years of continuous and consistent service to the Western fruit growers.

There is a shortage of trees this year. To make sure of getting just what you want, place your order now.

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Nitrate of Soda leaves no mineral acid residues which may destroy neutral soil conditions. It does not require time to be Nitrated as do all other forms of Nitrogen. There is no risk of loss by Nitration. No matter how cold the season, no time is lost. All other forms of Nitrogen require time for Nitration.

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Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

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## FIG TREES Calimyrnas and Capris

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Los Angeles, Cal.

saying that they intend to sign up, but for one reason or another are delaying. This, in itself, is a great impediment to our work, as every contract signed now gives spirit and zest to the campaign.

And to every man who has signed his contract, and to every man who is interested in the welfare of this community, whether or not he owns a vineyard, we appeal. We ask you to set aside the next 20 days to the winning of this fight. Many suggestions are being made every day as to the conduct of this campaign. Some of these suggestions are good and can be carried out, but let us not lose sight of the fact—that a campaign of this kind is not a slight of hand performance and cannot be won by magic; stunts may be good, but the one thing that will bring victory is work; therefore, let every one buckle on the armor and put his shoulder to the wheel with the determination that we must go "over the top" before Feb-

ruary 1, as it will be impossible to extend the time beyond that.

Yours very truly,  
CALIFORNIA ASSOCIATED RAISIN COMPANY, Wylie M. Giffen.

### SIGN UP 100 PER CENT

Speaking of the present campaign of the Associated for signers on the new contract President Niswander of the Peach Growers said:

"I am a strong believer in the fundamentals of democracy—in the spirit of majority rule. That the majority of growers want the association ought to be sufficient reason for the minority to join, and were it not for the spirit of selfishness and greed so prevalent in the human race, you would not now be compelled to spend time and money to induce growers to sign, but they would mail their contracts to you, and the association for the future would be 100 per cent strong."

## Spraying Notes

By Geo. P. Weldon, Chief Deputy, State Commission of Horticulture

**N**OW the time is rapidly approaching when spraying for the control of such troubles as require a spring application will be necessary. Dormant spraying is by far easier and much more satisfactory for the control of scale pests, brown mite, twig borer, leaf curl, peach blight and occasionally other insect pests and fungous diseases, than any sort of treatment during the summer season.

### Lime Sulphur

This material, which may be purchased in liquid form ready for dilution with cold water, has no superior as a general purpose insecticide and fungicide. It should be applied to all deciduous trees at the strength of one gallon of lime sulphur to ten gallons of water, preferably as the buds are beginning to swell in the spring. Any time after the first of January it may be applied to advantage. No peach grower should neglect this treatment. The two pests that are nearly always present in the peach orchard are curl-leaf and twig-borer. The former is a fungous disease that curls and drops the foliage and the fruit fails to mature. It is recognized by swollen, blister-like, reddish patches on the leaves. Lime sulphur is a perfect remedy for this trouble. If the trees are thoroughly sprayed there will be practically no sign of the disease in the spring. It also aids in the control of peach blight, which, however, requires a fall treatment for complete control.

The twig borer is recognizable in the fruit as a small worm or larva, and in the tips of the twigs in the early spring, where it eats into the new growth, hollowing it out for an inch or somewhat more from the extremity. Partially grown larvae hibernate in the crotches of peach, and occasionally other stone fruit trees. Practically a hundred per cent kill is possible if spraying with lime sulphur is done carefully.

Almonds, prunes and apricots are very apt to be infested with certain scales and mites. The most common scale is the European fruit lecanium (*Lecanium corni*). This pest is known in California as the brown apricot scale. Its control will be given under oil emulsions. The brown mite may be recognized by red, glassy eggs about the crotches of infested trees. Lime sulphur, as the buds are swelling, is effective in the control of this pest. As a general clean-up spray for all deciduous trees it can be safely and usually profitably applied at the strength and time mentioned.

### Oil Emulsions

For insecticidal purposes during the dormant season the various forms of oil emulsions (distillate emulsion, crude oil emulsion, miscible oils, etc.) are valuable and in some cases preferable to lime sulphur. Their fungicidal value is slight and if fungous diseases are to be controlled the lime sulphur should always be used. In the case of the twig borer already mentioned, oil emulsions are of no value. For brown mite and scale insects they are splendid. The European fruit lecanium occurs commonly on pears, prunes and apricots. For the control of this scale there is nothing better than oil emulsions. Like the lime sulphur, they must be thoroughly applied else the cost of material and application may be largely wasted.

### Bordeaux Mixture

No better general purpose fungicide has ever been discovered than Bordeaux Mixture. For curl leaf and blight of the peach, in fact, for all fungous troubles, it is fully as effective, if not superior, to lime sulphur. It has no value, however, as an insecticide, therefore if a combined fungicide and insecticide is needed the use of Bordeaux must never be considered.

### SEED FOR FARMERS

Secretary Houston has asked for an appropriation of \$6,000,000 to enable the department to buy and sell dependable seed at cost or at as reasonable price as possible.

"The seed situation has presented, and continues to present, many difficulties. Under the provisions of the food production act, which made available \$2,500,000 for the purchase and sale of seed to farmers in restricted areas for cash at cost, it has been possible for the department to furnish some relief. Large quantities of seed of cotton, grain sorghums and corn have been purchased for the drought-stricken sections of Texas in order to assist in making available adequate supplies of seed for the next planting season. The department is taking similar action in North Dakota and Montana and has arranged to purchase considerable quantities of old corn suitable for seed for sale to farmers in Indiana where an emergency exists with reference to the supplies of viable seed corn.

"It is clear, however, that the funds now at the command of the department are wholly insufficient to enable it to meet the situation properly. If production is to be maintained or increased next year it is essential that prompt and adequate action be taken to safeguard the seed supplies of the nation. There is urgent and immediate need for at least \$6,000,000, and it is probable that an additional sum will be required in the near future."

## Once Over!

Think of what this means in saving of time and labor. You get a better seed-bed too, by using the famous

## Cutaway Double Action Disk Harrow

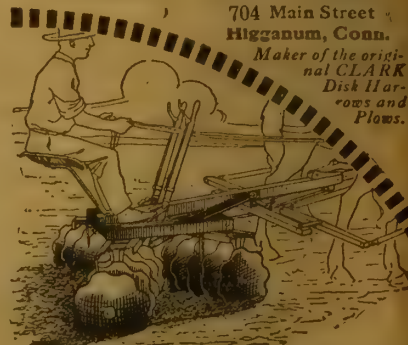
The rigid main frame makes the forged disks double cut, pulverize and level the ground. Closehitch. Lightdraft. All sizes.

Write for book telling how to raise better crops with less cost. "The Soil and Its Tillage," it's free, also new catalog. Ask for name of nearest dealer.

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as thoroughly as you cultivate your cornfield. Intensive tillage conserves the moisture and sets plantfood free. For more and better fruit, use an

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## Orchard Harrow

Works right under the branches. The sharp-ground coulters work the soil easily, cutting out weeds and leaving a loose dust mulch at the top. Extension and regular styles—1 horse to 4 horse sizes—3 ft. to 17 1/2 ft. wide. Our free book, "The Acme Way to Crops That Pay," points the road to bigger orchard profits. Send today.

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New Catalogue is now ready. It will pay you to send for it. Our stock is unsurpassed.

TEAGUE QUALITY.

## CITRUS TREES

Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

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## Pruning the Orange Tree

**I**N AN address before an improvement association in Victoria, New South Wales, A. S. MacDonald gave elementary points on the pruning of citrus trees as it should be followed in that state. Mr. MacDonald said:

"Pruning is a subject on which a great deal can be said. In giving an outline I will only say keep the tree open in the center right from the start. By a system of judicious disbudding and pinching out of unnecessary growth pruning can be almost done without for the first two or three years. After the tree has been planted and the top cut off (this cutting depends on the shape and style of the tree) only three branches should be allowed to grow. These branches should be encouraged to get out and

up by disbudding all side shoots, keeping the main one going till it is from one foot to fifteen inches long. Pinch the end off here, and allow it to fork, and then keep these two resulting branches going in the same way. By doing this you should have at the end of the season a tree with the start of six branches or main arms. These are then allowed to grow and spread, the center of the tree being kept open by disbudding. As the tree gets older this disbudding is not needed, and the small shoots which then appear are left to grow and become fruit bearing spurs or shoots. Sometimes shoots come up and grow very quickly. These are called water shoots, and should be taken out at once, as they are of no use and if left too long only rob the rest of the tree."

## Manure on Citrus Orchards

**I**T IS probable that there are seldom serious errors in applying manure to citrus orchards in California, more largely because manure is not abundant nor cheap enough to make its use injurious in any way except negatively in that too little is applied. Its place as a humus former here is usually taken by green manure crops. It is of interest, however, to know as to methods of work in the Antipodes. Therefore we present a few points on manuring as given by a grower of New South Wales.

"At planting time manure should not be used, but when the tree starts to grow in earnest different artificial manures at various seasons are very beneficial if properly applied. Farmyard manure is undoubtedly the best of all, but must be used with a lavish

hand and applied at the right time and in proper manner. Artificial manures, being concentrated, are easier to handle and give almost as good results, if applied in conjunction with green humus making vegetation and they also must be applied at the proper times. In applying farmyard manure never place it close to the stem or butt of the tree, as the manure will cause the bark of the tree to rot if left against it for a time. I have always made a point of placing manure slightly outside the circle of the root system. This encourages the roots to reach out for it and so tends to stimulate growth. Too much manuring is bad and worse than none at all, as this fosters rank growth, which, failing to ripen properly, is cut back by frosts and is likely to cause disease. It also tends to coarsen and misshape the fruit."

## Tractor Short Course

Riverside Site of Six Day School Which Will Increase Tractor Efficiency

Registrations are coming in rapidly for the Gas Tractor Short Course, to be held at Citrus Experiment Station, Riverside, February 11-16, 1918. Not only men, but women as well, are signifying their intention of availing themselves of the instruction offered. The fact that men and boys are so generally leaving the farms for direct war service had made it desirable for women to do those things in agriculture which they can do well. Women

are already past masters at automobile driving,—why should they not also drive the iron horse with its automatic lift implements?

The course begins on Monday morning, February 11 and continues throughout the week until Saturday noon. A registration fee of \$1.00, payable any time prior to entering the course, constitutes the only charge. Any one may register. Applications should be sent to Dean, Citrus Experiment Station, Riverside, California.

## Tractor School

Arizona Offers Three Weeks' Instruction in Tractor Management. Course Given at Tucson

**A**SCHOOL for tractioners will be the central feature of the farmers' short course offered by the University of Arizona from January 21 to February 16. Several makes of tractors will be available and the student will be given instruction in the selection, repair and operation of the iron horse. Other lines of instruction which may be taken at the same time will include live stock judging, care and management; gardening and orcharding; farm dairy manufacturing; control of crop pests; poultry for meat and eggs; soils and irrigation, which will include a study of gas engines, pumps, and the development of water.

The faculty of the college of agriculture have planned to make this work intensely practical and adapt it

to the immediate needs of Arizona farmers. The work will be along the lines of regular college instruction rather than institute or extension work, and well suited to young men below the draft age, or to women, on whom the duties of running the farm during the war are apt to fall, as well as to more experienced farmers.

Accommodation on the campus will be available to persons taking the full course so far as there are vacancies. It is expected that a large number of persons will avail themselves of this unusual opportunity to take a very short college course and fit themselves for greater service. The short course will follow immediately on farmers' and housekeepers' week, which ran January 14-19.

# Armstrong Nurseries

ESTABLISHED 1889  
ONTARIO, CALIFORNIA

## Dependable Trees

count for success in Orchard Growing, whether home or commercial, because—

- they bear early
- they bear big crops
- they bear large and marketable fruit
- fruit that brings top prices
- that fills the pocket book of the owner

There are many things that enter into the production of dependable trees which should have the closest consideration—because it means so much to the buyer to know that his trees are vigorous, with strong, well developed roots—that they have been grown by skilled Nurserymen—never allowed to become stunted for lack of attention—are properly dug, roots protected from wind and sun—are packed to reach the planting grounds in perfect condition—are TRUE TO NAME—are grown from selected buds—won't have to replant 25 to 50 per cent next season,—lose a year and have an uneven, unsightly orchard which frequently occurs with unreliable nursery stock.

### Mr. Armstrong Personally Guarantees

#### Armstrong Trees to be Dependable

Back of this guarantee is his worth and reputation for honest, square dealing of more than a quarter Century—

The best evidence that Armstrong Trees are developed to obtain results, and are as represented, may be secured from your Neighbor who has planted them—One pleased customer of hundreds writes—

"Trees arrived yesterday, inspected today. Inspector says they could not be any better—I am very much pleased with them." Later—"Of the large shipment of trees I received from you I only lost one tree—We all want Armstrong Trees in this neighborhood." Mr. E. Carter, Yucaipa Valley, Calif.

### Armstrong Trees are Sold Direct to the Planter



Ascolano Olives

Mission, Manzanillo

Ascolano Olives

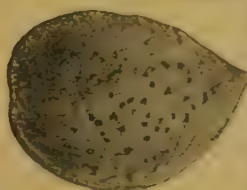
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We were fortunate in having an unusually fine stock of all the best known varieties, and are still able to supply both small and large orders.

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OLD complaints are often heard because some plants have no English names, and the botanical or scientific name, which is the only real name a plant has, is too hard to pronounce. The complainants state if English names are not given the Latin names chosen should be chosen because easy for the English tongue. This would be possible, and very nice indeed, if we could arrange it so that English-speaking scientists could discover and name all the new plants. But, unfortunately for us, many plants are first found by Frenchmen, Germans, or by the user of the, to us, almost impossible Russian.

Can we not arrange it so that all new plants must wear a zinc collar around the stem with a name already written, in imperishable ink, so plain and prosy that it warps not the English tongue to speak it? Evidently we cannot conspire with Dame Nature to this end and must accept as the correct or proper botanical name the one given by the first person who publishes a correct description in a recognized scientific periodical, for that is the recognized necessary procedure. Again all other names than the botanical one are nicknames or pure slang. "Bouncing Betsy" or "Bachelor's Buttons" may sound good to us, but what would the counterpart be in Russian or Greek? We tremble to even contemplate facing the translation. Then again, those who demand most are the most inconsistent. *Lonicera*, the Latin, is easier for us than honeysuckle, the English. Yet while we refuse the former we embrace chrysanthemum, which is the Greek name of a plant and one of the longest and most difficult to pronounce. *Watsonia* is plain to us and we handle it with ease and are proud to do honor to Mr. Watson, for whom it was named. But when a very distinguished Russian named a plant *Tschichatchewia*, in honor of another distinguished Russian, we "raise a howl." In this we are not justified, though the plant comes to us carrying this name as an unmistakable handicap, and we must give it some such appropriate and beautiful name as we have in the cases of "mule-fat," "sow-thistle," "she-oak," "liver-wort," "Dutchman's breeches," "bastard money-wort," "virgin's bower," "false dragon-head," "dog's-tooth violet," "Joe-Pye weed," etc., etc. We are so consistent. And the English language is "so rich in meaning and so wonderfully expressive."

### English Names

We are under no compulsion to give plants English names, for they have botanical names when we first get them, and if these are at all easy they should be used, for the botanical name is universal, used in all countries and languages, and with scientific precision places the identity of a plant beyond all doubt. Such names as "we" give them do not, for "love-in-a-mist" is also known as "devil in a bush" and a plant may be "Bessie Red Eye" in the Middle West and "Tommy Rott" in New England. In parts of Ireland shamrock is a small-leaved variety of white clover; in other parts it is wood-sorrel, but that distributed in such large quantities in Los Angeles each year is neither, though the seeds were sent from Ireland by two seed houses as the only genuine shamrock. A fairly thorough

## Names for Plants

Written for California Cultivator by Ernest Branton

canvass of various parts of Ireland disclosed the fact that at least 20 different plants are recognized as shamrock, and indeed any three-lobed leaf will illustrate the point St. Patrick sought to make clear.

### Fuss About Gardening

From at least two or three thousand letters of inquiry received through various periodicals since I began writing for the California Cultivator 17 years ago it is evident that many newcomers are appalled at the "don't's" that are hurled at them regarding treatment of plants. They are told some plants must have this and others must have that, and still others familiar to them "back East" simply will not grow in California at all. Ignorant, would-be gardeners, and many not so ignorant, would have us believe that California gardeners are little short of magicians. To tell the truth there are a few curious facts about a few plants that it is best to know in order to avoid having to learn in the hard school of experience. But, bless you, it is easier to grow any and all sorts of plants here than it is in any other state in this glorious Union. Experience and common sense will in a year or two solve all ordinary garden problems.

### Gardening Is Not Natural

Gardening is not a natural process, for we gather together plants from many climes and conditions and seek to make all grow in one garden under one set of conditions. It is plainly evident we cannot hope to precisely imitate the natural conditions of any. And this is seldom necessary. A swamp plant from the tropics endures a great amount of water for the reason that it has to withstand a high temperature throughout the year. The same amount of water in our cooler climate would soon stagnate growth and rot the roots. Some plants naturally thrive in a soil so poor that even a small amount of animal manure affects them adversely. Others will not endure disturbance of surrounding soil; some of this class are native to California. No one ever got better results through cultivating a *Matilija*, though many are killed by such intended kindly action. As a rule bulbs do not need manure in the soil, yet one may safely use a top mulch of several inches on the same sorts.

### Garden Simplicity

Do not forget that in all garden work we should aim to assist nature, not to overcome nature, nor to work independent of nature. If we have a steep slope on which there are outcroppings of rock and a retaining wall is necessary, do not either blast out this rock or begin below and outside it to build a new one entire, but use the outcrops as part of the wall. This is assisting nature. For in a majority of cases we cannot consistently imitate nature, but in all cases we may assist. In gardening we subdue nature to our own purposes, and it is inexcusable affectation to pretend otherwise, or that we are imitating nature. On the other hand, it should not appear that we have purposely and arrogantly determined to conquer or overcome nature. We still insist you should assist, and let your assistance be as little in evidence as is possible; simplicity to be ever in the worker's mind.

### Hedges and Enclosures

The writer is very fond of informal

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hedges or border plantations of varying widths, with points, recesses, groupings, etc. Yet if a formal hedge is necessary or best, do not hesitate to clip it into formal design. We must recognize its use, which is to enclose, and it is just as proper to use living vegetation as it is dead vegetation in the shape of posts and pickets, or lattice, or even metal or mineral, as wire or stone. Its pur-

### The Biggest Crop

**W**E produced last year the largest potato crop America has known, 442,536,000 bushels, according to the latest figures of the bureau of crop estimates of the United States department of agriculture. The 1916 crop was only 286,953,000 bushels, while the average production from 1911 to 1915 was, in round numbers, 363,000,000 bushels. Thus, we have on hand this winter 155,583,000 bushels more than in 1916 and 79,536,000 bushels more than the average for the preceding years since 1910. We can't well send this potato surplus to Europe, but by eating it at home we can send other forms of food to the front. It should be remembered in that connection that America's consumption of potatoes has been below the average per capita consumption of other nations. It has been estimated by some authorities that we could very readily double our potato diet and be within the bounds of a healthful and desirable ration adjustment.

We should profit by the experience of the winter of 1914-1915, which affords the nearest parallel to the present potato situation. Much of the 1914 crop was held in storage that winter. It moved into consumption slowly, and the result was that in the spring 1915, as the new crop began to come in, the holders rushed to the

market, glutted it, hammered down prices, and potatoes sold for 25 or 30 cents per barrel to starch factories. We must guard against a repetition of that experience next spring, and the only certain insurance against it is to cease hoarding potatoes, to market the present supply gradually through the winter, and to increase our potato consumption. Because of car shortage and transportation limitations each section should market as near to the point of production as possible.

The food administration has no power to fix potato prices, but it has and will exercise, if necessary, power to prevent unreasonable profits. It is now working upon a plan to expedite "acceptances" of potatoes and other perishable food products and to eliminate losses and delays caused by unjustified rejections by consignees. The department of agriculture and the food administration urge those who are holding potatoes to market them gradually and steadily, so as to sell out before the new crop comes in, and they urge everyone to eat more potatoes—and less bread.

If it is in order for the Cultivator to suggest "why not have dehydrating plants, starch factories and other institutions for working up the excess and waste. In California with hay almost as much per pound as potatoes the stock feed proposition is worth considering.

### Dehydrated Products

**C**ALIFORNIA is now growing thousands of tons of turnips, which are contracted to the Canadian government. They are dehydrated, packed into small bulk and sent to the trenches. Europe has for years been dehydrating or drying potatoes and other bulky products. As a result railways have been burdened with thousands of tons less of water and a product which is nutritious and practical as well as tasty has been supplied.

Experimenters have been working on the problem in America for years, but for some reason our large way of making haste and of doing things has prevented its use. Times are changing, and the demand is here for conserving. Dr. Hazeldine of Los Angeles has plans for constructing a dehydrator, for a nominal cost, which uses the sun's heat during the day and is fitted for artificial heat at night.

Even some of the bulkier products have their moisture extracted within 24 hours and are ready for market. At first it does not appear that oranges would make an attractive "dried fruit, but as they come from this process they are most tasty, make a neat appearing product, and, from samples seen, we take it, offer a large opening for the disposal of low-grade fruits. Of course, orange wastes are already handled in the form of marmalades, dried peel, bottled juice, reduced pulp, where the entire orange is reduced for use of confectioners,

bakers, etc., and in many other ways, but there are still thousands of tons going to waste, and dehydrated oranges have an attractive appearance as processed by Dr. Hazeldine.

Every kind of vegetable may be handled by the process and, as noted, at a nominal investment. A small plant can be constructed, we understand, for around \$2,500, and we see no reason why small cooperative associations, having at times more supplies than needed, may not well unite in constructing a dehydrating plant which will prove profitable. In fact, we recently saw bottled and greatly condensed lemon and orange juice. These are reduced in bulk at very low temperatures by the vacuum pan process, and the reduction has been accomplished with all of the original fresh fruit flavor retained.

We must conserve more of our waste products.

At a recent meeting of the British Cotton Growing Association the matter of inability to ship cotton as desired was discussed, and it was determined that no relief was in sight until new bottoms are constructed.

A new fiber for sack or bag making has been developed from the banana. Machinery has been taken to Honolulu with the idea of making from Hawaiian banana plants sufficient bags for the use of local sugar mills.

The tractor is having a great demand in Argentina. Agriculture is extending rapidly, so much so that draft animals are not able to keep up with the demand.

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## Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Grafting Pecans and Walnuts

Have seedling pecans of no particular value. Can I graft them to walnuts?—Subscriber, Los Altos.

Walnuts cannot be successfully grafted on pecans. They are of different species, and while the walnut scions will sometimes start in the pecan stocks they soon die.—J. B. N.

### Winter Irrigation of Walnuts

It is six weeks since my walnut trees were irrigated. I grew potatoes between them, and ground has been in fair condition. Fear it is now getting dry, but if I should irrigate heavily with present warm weather is there danger of starting growth which may possibly be caught by a later frost?

On the other hand, if no irrigation is given, is it probable that small rootlets may be killed and trees be injured in the spring? How shall I treat my trees?—Subscriber, Los Angeles.

No harm will come from irrigating a walnut orchard at this time, but if the ground contains some moisture there is nothing to be gained if sufficient rains come later, and irrigation water can be obtained if rains do not come. The ground should be wet to a depth of five feet at the time the trees begin to grow, which is about March 10. If the rains hold off until February it would be well to begin to fill the ground with irrigation water and then keep the water in the ground by deep and frequent cultivation. However we may have an abundance of rain, since in 1884, the year of our heaviest rainfall, there was very little rain until January 26.—J. B. N.

## Sugar Beet Situation

Once Settled, Then Unsettled, Now Finally Arranged It Is Hoped. Wires Kept Hot to Washington.



IT WAS prematurely announced nearly two weeks ago that the sugar beet situation had cleared. Attorney Bishop of the Growers' Association gave out to the growers that District Attorney Woolwine of Los Angeles County, R. E. Whitley and himself had secured assurance from Washington that the food commission would take a hand and see that a just price be secured. On arrival home Mr. Woolwine received word from Washington that the arrangement made was not acceptable to the manufacturers and that the matter would be referred to the federal trade commission. This was a bombshell. Woolwine wired:

Hiram W. Johnson, United States Senator, Washington, D. C.—While in Washington Hoover gave unqualified assurance and promise that he would immediately appoint commission to take testimony and fix price of sugar beets in Southern California and like commission in other beet growing sections. Nothing done to date. Received telegram signed "Food Administration" "suggesting that promised commission be not appointed but matter be taken before federal trade commission." Beet growers disappointed and dissatisfied. Fear any hearing before trade commission would result in great delay and insist that Hoover carry out his promise and appoint commission. All questions as to the legal authority of such commission fully discussed with food administration. Hoover determined to appoint commission in spite of any legal weakness as Hoover considered findings would have sufficient moral effect to force reasonable price for beets as in successful fixing of price of milk in many northern states by same procedure. Hoover further promised to immediately appoint commission whether refiners agreed thereto or

not. Telegrams and correspondence in matter on file with food administration will further inform you as to present status. Will you please do everything in your power to induce food administration to carry out promised plan at once as any delay will prove disastrous to beet sugar production?—Thomas Lee Woolwine, District Attorney.

This wire brought a change again, and Mr. Whitley received a wire Tuesday that a special committee would be appointed by the commission which should take the matter up with manufacturers and growers:

Whitley wired: Hon. Herbert Hoover, United States Food Administrator, Washington, D. C.—The growers feel revised commission plan suggested in telegram from Judge Lamb January 14 would be a step in right direction, and urge all haste possible in appointing same. Situation is fast growing critical, as growers are buying seed in many instances to plant other crops. Many of them, however, are willing and anxious to cooperate with United States Food Administration in helping to solve sugar shortage problem. If the committee could be immediately appointed the growers are ready to submit data and a fair price for beets could be recommended very quickly if no time was lost or no unnecessary delay permitted to put off this important matter. Thorough canvass of the situation shows it is impossible to bring growers to plant until a fair price for sugar beets has been negotiated between growers and factories, and the growers will do all in their power to further these negotiations. A few days' delay will be disastrous in many sections at this stage of the work, so that any extra effort you can put on rounding this into shape quickly will be a great benefit to beet sugar industry throughout the United States. — San Fernando Valley Beet Growers. (Signed) R. E. Whitley.

Secretary Houston announces delivery of 100,000 tons nitrate of soda to various American ports as soon as shipping can be secured. Anyone interested should write direct to Department of Agriculture, Washington, D. C.

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The National League of Commission Merchants held its annual meeting in Chicago, January 9-11.



# Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

## Dyspepsia

I have a horse that has acquired the habit of eating wood. He will eat the corral fence, a post, the manger or anything that he can get to that is wood. He is fed alfalfa hay and corn three times a day. I put a muzzle on him so he could not get to the wood but then he puts his nose to the ground and eats dry manure that he can get through the muzzle. I am compelled to keep him tied up in the barn with the muzzle on all the time only when he eats his feed. Can you tell me what causes this condition and what will stop him of the habit?—Subscriber, Elsinore.

This condition is not common, but a horse or cow that has been fed one kind of feed for some time may get a form of indigestion that causes the stomach to crave something all the time. The rosin in pine wood seems to satisfy this craving and give temporary relief but it is not lasting. You must change the feed and give something to change the action of the stomach. Get half an ounce of aloin, four ounces of turpentine and two quarts of raw linseed oil. Shake them together in a large bottle until they are thoroughly mixed and give half a pint of this as a drench once a day while it lasts. Also mix one pound of good fresh wood ashes with three pounds of common salt and give a large tablespoon of this once a day in the feed.

Another important thing to do is to feed the horse properly. In the morning give two pounds of hay and two pounds of grain; at noon the same, or twice as much if the horse is working. At night give him ten pounds of hay and four or six pounds of grain according to the amount of work he is doing. Never water the horse at feeding time. Give all the water he wants half an hour or longer before feeding and not again for an hour or longer after feeding. Tie him with a strap to each side of the stall so he can not reach anything while not eating. In a week he will probably be free from the desire and habit of eating the wood. In the future avoid overfeeding. Most horses are fed twice what they need to keep them in good condition and it brings on all kinds of ailments.

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## CALIFORNIA BOAR SHIPPED EAST

A. J. Lovejoy & Son of Roscoe, Illinois, came to California and selected a Pacific Coast bred Berkshire boar to head their great herd in the East. The Lovejoy herd of Berkshires, established in 1876, is one of the oldest and best known herds in America, their stock having gone to nearly all states in the Union besides many of the South American countries. A. J. Lovejoy, senior member of the firm, is known as a famous breeder of Berkshires and a splendid judge of other breeds as well, having judged the Duroc-Jerseys at the Iowa state fair four years in succession. Wyman Lovejoy, now active manager of the herd, is also well known as a Berkshire judge, having awarded the honors at both the National Swine Show at Omaha and at the Eastern Berkshire Congress.

The boar selected by them to head their great herd is Violet's Champion, sired by the well known Laurel's Champion, he by Ames Rival's Best, the famous boar owned by Dean C. F. Curtis of Ames, Iowa. Violet's Champion is one of these big type, extremely smooth fellows with perfect Berkshire type throughout and was instantly recognized by Mr. Lovejoy as of champion calibre, when shown to him at the Fontana Ranch by R. K. Walker.

After taking his measurements and a careful study of his pedigree and record as a sire Mr. Lovejoy spent some time communicating with his son in Illinois with the result that the purchase was made, and the boar is now in his new home at Roscoe, Illinois. In this herd he will be mated with some of the greatest sows in America and will probably be seen at some of the more important hog shows in 1918.

The following telegram is a copy of the one sent from Mr. Lovejoy, Jr. to his father on receipt of the boar: "Violet's Champion arrived last evening. You have done a good winter's work in buying this boar for us, such strength of back, extreme length and size, heavy bone and ideal head and ear recall Masterpiece and Lord Premier's Rival. I predict that he will leave the same impress for breed advancement as did those two boars. If there are many such boars on the Coast, East or Middle West better get busy and buy them."

## FEED HOGS WHEY—NOT

Farm Adviser Baade is giving warning to members of the Napa County farm bureau to use care in the feeding of whey, and unless care is used, not to feed. He makes no reference to buttermilk, but we believe it would be entirely safe to extend a similar warning to buttermilk feeders. Carelessness at either creamery or cheese factory in using old contaminated containers passes on poisons, or at least injures livestock, and in the case of Napa County has resulted, at least so it is thought, in the death of valuable animals. Adviser Baade says:

"To date the damage runs into hundreds of dollars. We are not positive that it is the whey, yet all evidence points that way. A sample of whey has been sent to the University of California for analysis. When this is heard from we will be able to speak more positively. Dr. Dederick, the county livestock inspector, is of the opinion that when sour whey is transported in old rusty tin cans there may be a chemical action forming poisonous compounds. We would, therefore, suggest that parties who have found whey good for hog feed, transport same from the cheese factories to their ranch in wooden containers and that they do not store it in metal receptacles."

## SALE OF SHORTHORNS

At its meeting on Friday last the California Shorthorn Breeders' Association decided definitely to hold its sale at the beginning of April. Upwards of 75 head of cattle are available for entry in the sale, which will be held in San Francisco. Committees were appointed to undertake the work of preparation for the sale, and these committees have already commenced work.

The growing popularity of the Shorthorn breed is making its effect felt quite markedly, and, as a result, the purchase of yearling bulls is becoming more and more the vogue. By anticipating his requirements and purchasing a year in advance the thoughtful cattleman is assured of having bulls on hand when needed, besides having had a year in which to accustom them to the conditions which they will encounter.

Announcement will be made through the press concerning the Shorthorn Sale, while catalogues will be ready about the end of February. Interested parties can communicate with the association at its office, 320 Sharon Building, San Francisco.

California's live stock commission and the California Cattlemen's Association are doing all in their power to bring feed to the live stock, or secure proper disposal of live stock which is caught by the drouth without feed. Anyone wishing help along these lines should write to Secretary David J. Stollery, 329 Sharon Building, San Francisco.

## SILOS AND SILAGE CROPS

"Silos and Silage Crops for Arizona" is the title of Circular 17 issued by the University of Arizona. There are illustrations of concrete silos, of corn fields and 16 pages of silo information. They state that the feeding value of silage compared with other succulents is: One ton of corn silage is equal to 1.5 tons of sugar beets; 1.8 tons of rutabagas; 1.8 tons of carrots; 2.2 tons of turnips; 2.4 tons of mangels; 1.4 tons of parsnips.

## ROSAMAINES HOLSTEINS



King Pontiac Netherland Segls 3rd  
CHOICE BREEDING STOCK FOR SALE  
A.R.O. Records up to 34 lbs. Butter in 7 Days  
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Stalder Bros. RIVERSIDE, CAL.

## HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

## REGISTERED BERKSHIRE PIGS

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DAIRY ASSOCIATION CO., Lyndville, W. **KOW-KURE** 55c & \$1.10 per box.  
Booklet, "The Home Cow Doctor," free.

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Registered Bulls—yearlings and two year olds. Bred on same lines as our Grand Champion cow at Sacramento, 1917.

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## Level Railroad Crossings Will Save Lives



**B**AD railway crossings cause many serious and fatal accidents. Constructing the road with a decided rise or fall just at the track contributes largely to the danger for automobiles at such crossings; but this construction is common where the railroad is above the normal level of the highway. To eliminate all grade crossings is out of the question; therefore, efforts to decrease loss of life must be directed largely toward making necessary grade crossings reasonably safe.

The level stretch should begin at least 30 feet in front of the first rail. Since a railroad right-of-way is usually 100 feet wide, the improvement might well extend for this distance. Where the railroad fill is high enough to hide machines approaching from the opposite side, it is imperative that conditions be improved, for here there is the additional danger of two automobiles colliding. Road engineers are recommending a minimum sight distance of 300 feet at every point along the road. Especially is this desirable



A level stretch of road at each side of the track is necessary for safety.

Attempts are often made to get over bad crossings on "high." The steep ascent, combined with the necessity of slow speed over the rails to avoid jolting, may cause the driver to "kill" his engine, just as he reaches the rails. With the rear wheels perhaps still on the grade, there is no chance for momentum to carry the car over. A fast train bears down upon it—the crash is inevitable. Another accident is added to the long list.

The remedy is simple. A level stretch of road provided on each side of the track and an unobstructed view will result in saving many lives. In stead of the crest at the track, there must be substituted a level section, even though steeper approaches are necessary. In most instances a satisfactory profile can be obtained at a moderate cost.

at a grade crossing, and a level section here will aid in fulfilling this requirement.

Sufficient width should be provided for two automobiles to pass without slowing down for that purpose—20 feet at least. Then if the crossing itself is made as even as possible there will be no congestion at this most dangerous place.

The increased safety from such improvements is more than worth the cost, even though considerable. Crossings must be such that if an automobile is to stall, it shall be somewhere other than in front of a train. Cooperation between county or township authorities and the railroads, working under the state railroad commissions, where they exist, will do much to make for safety. Continued neglect means more accidents.—G. S. Eaton, in Concrete Highway Magazine.

## Does the Tractor Pay on the Average Farm?

It Depends Largely Upon the Farmer



**A** WRITER in "The Farm Tractor" says "it does, but 'Study your own farm conditions and choose a tractor accordingly.'" "Everybody has heard over and over again the last few months of how much depends upon the farmer in winning the war. The world supply of food is very far below the actual necessities of America and her Allies. There must be greatly increased production as well as wise conservation.

"How can this increased production be accomplished when the man power of the world is already so greatly diminished, and the diminishing process goes increasingly on to fill the demands of armies and navies and war munitions factories of the nations at war?

"All are agreed that one of the most, if not the most, important factors in the solution of this most serious problem of the war is power machinery on the farm. And by power machinery is meant primarily the farm tractor. But can the farm tractor in its present state of development be made a paying investment for the average farmer who has and cultivates, or tries to cultivate, a farm of from 100 acres to 300 acres?

"A farmer of this class who has tried it out is better qualified to answer this question than anybody else.

Others may have fine theories and be well versed in the technique of the tractor machine, and, in fact, may know all about the tractor and how to run it; but this farmer knows from experience just what the tractor will do.

"With this very thought in mind, we sought out the owner and manager of a farm of about 260 acres, and asked him to tell from his own experience some things he has learned about tractor farming, and whether, in his opinion, it will pay the farmer. He has an 8-16 tractor which he drives part of the time and part of the time his regular farm hand drives. He cultivates corn, wheat, oats and grass. He has made himself thoroughly acquainted with his tractor and knows how to handle it and to utilize every service it is capable of rendering, just as he knows how to use horses and other farm implements. This is the key to the successful and profitable use of the tractor by any farmer; and just as in anything else on the farm, as well as in any line of business, added to knowledge of the thing in hand, must be good judgment and common sense.

"Probably the greatest drawback to the common and universal use of the tractor on the farm at the present time is its likelihood to give the average farmer, untrained in mechanical

# SPRAY

## Does Orchard Care Pay?

The returns per acre of 40 corn-belt orchards for the last three years are as follows:

Properly pruned and sprayed areas, total received, \$176.00 per acre, net profit \$143.00 per acre. Untreated areas, total received \$18.00 per acre, net profit nothing. There is only one answer to that question:

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skill, what is called "troubles" in operation. So we asked:

"Do you have troubles with your tractor?"

"In the first place I have an ordinary, practical knowledge of how to run my tractor, and every time before starting to use it I try to find out and know just what shape it is in. If it is not in good shape, I put it in proper condition before starting it to work. Just as if I took a horse out of his stall and harnessed him to a wagon or plow and found he was sick or lame, I'd unhitch him and call in the veterinary doctor, or doctor him up myself, till I got him in proper condition, before I put him to work. Just as in everything else, and probably more so than in most other things, you've got to use your head in using a tractor. With fair knowledge of your machine, ordinary care and good judgment, there is no necessity for more "troubles" with a tractor than with horses and other farm machinery. It depends a great deal on the man behind the engine."

"How much per acre does it cost you to plow with a tractor?"

"Well, that depends largely on conditions, just as it does with horses. If the soil is in good condition I can break an acre with two gallons of coal

oil and a pint of cylinder oil. Of course, there must be added to this the wear and tear of the machine and the cost of the operator. But allowing three plows to your tractor, which is a load for four horses in ground in prime condition, and for at least six in ground in bad condition, I should say it costs me very much less than with horses. But this is not the best of it. You see there is a great scarcity of farm labor right now, and especially what might be called skilled farm labor. This better class of labor is the most profitable in the handling of horse power plows and other farm machinery. The tractor has the advantage of doing the same work on the farm, and even more, with less help; so, therefore, it is really a greater advantage to the farmer, under the present conditions especially, in its saving and conserving labor, than in its actual saving in cost per acre of operation. The tractor can be advantageously used in the preparation of the soil for the seeding of any ordinary crop, especially the cereal crops, but the cost per acre for this preparation depends entirely upon what kind of preparation you make. It does not cost half as much to seed with a tractor as in any other way I ever tried."

### Short Course in Care and Use of Gas Tractors

How to use gas tractors with the greatest efficiency, and how to lengthen their lives and increase their usefulness by keeping them in perfect repair—such is the subject of the "Short Course" to be given by the University of California at the Citrus Experiment Station at Riverside from February 11 to 16. The university points out that with the present limited supply of labor it is the patriotic duty of every tractor owner to see that his tractor does as much work and as good work as possible, and proper training for the operator and proper care of the machine are of the first importance.

This tractor course will be similar to one recently held at the University Farm at Davis at which 184 people learned how to operate and repair tractors. There will be lectures, illustrated with charts and models, on gas engine principles, fuel, carburetors, magnetos, timing, adjustments, etc., and instruction by experts from various factories as to the construction, repair, and operation of the eight or more makes of tractors to be used. There will be field demonstrations on how to operate tractor machinery and make tests as to horse power. Each student will have opportunity for actual practical work in soldering, pipe fitting, carburetor adjustment, bearing adjustment, ignition timing, belt lacing, and the like. The

course is open only to those who can show that they will be able to make definite use of the knowledge gained. The only expense will be a registration fee of one dollar. The tentative program is as follows:

Monday, February 11, 8 a. m. to 12 m., registration; 1 p. m., opening address by Director H. J. Webber of the citrus experiment station, followed by a lecture on engine principles; 2:45 to 5 p. m. practice work.

Tuesday, February 12, lectures at 8 a. m. and at 1 p. m. on fuels and carburetion, each followed by three hours of practice work.

Wednesday, February 13, lectures at 8 a. m. on ignition and at 1 p. m. on magnetos, each followed by three hours of practice work.

Thursday, February 14, lectures at 8 a. m. on lubrication and at 1 p. m. on timing and adjustment, each followed by tractor practice.

Friday, February 15, lectures at 8 a. m. on repairing tractors and at 1 p. m. on testing and horse power rating, each followed by tractor practice.

Saturday practice from 9 a. m. to 12 m.

The staff of instructors will include J. B. Davidson, professor of agricultural engineering; R. S. Vaile, assistant professor of orchard management; L. J. Fletcher, instructor in agricultural engineering; A. B. Lundy, and several service men from various tractor factories.

### Ditch Making---A Mile a Month by One Man


Written for California Cultivator By Fred Haxton.

IN Clallam Bay in Washington a farmer recently completed a big ditch job on which he did all the work with his own hands. Today there are 3300 feet of channel open an average of two feet, ten inches deep and three and a half feet wide at the top, and he finished the job in exactly 17 days from the time the first dirt was moved.

This is at the rate of 200 feet a day, or more than a mile a month. The ditch was made entirely by blasting, without a shovel being used in the finishing, and the use of explosives was the only thing that made the making of the ditch possible because of the low cost, speed and ease. Laborers are scarce on the Pacific coast, just as they are in Kansas and Pennsylvania and Massachusetts. Labor

also is high in price. It seems on all well regulated farms, the time flies so that there isn't time to dig a ditch by usual methods between the date when the fall crops are in and the plowing must be done.

To make this ditch half stick charges of a high percentage powder were used in holes about 16 inches deep. At some points where the ground was not very wet they were placed deeper, but in most of the length of the ditch this depth was right for the effect desired, on account of the nature and condition of the ground—clay loam very full of water. The distance between the charges varied from 16 to 26 inches, depending on the character of the soil at each spot, which was watched carefully by the blaster.




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A simple gear-shift permits cutting four different lengths. The boilerplate knife-wheel prevents dangerous breakage.

Case Silo Fillers are made in three sizes—the 12-inch, with a capacity of 8 to 12 tons per hour; the 16-inch, with a capacity of 15 to 20 tons per hour, and the 20-inch, with a capacity of 20 to 30 tons per hour. This affords a size for any silo.

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loss through dishonesty of any adver-  
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of complaint must be sent us within 30  
days from date of the transaction, and  
the subscribers must have mentioned the  
Cultivator when writing the advertiser.**THIS WEEK'S COVER**

The poultry industry is surely  
laboring under difficulties these days  
of high prices of feeds. Poultry pro-  
ducts, of course, bring high prices  
also, but these are not as high in pro-  
portion as are the prices of feeds, and  
with the extremely narrow margin,  
the careless feeder has been pinched  
out, or is being pinched out. Where  
the poultry man has sufficient capital  
to secure proper equipment and to buy  
feed in quantity he may still weather  
the storm until the kaiser is beaten  
and normal conditions return.

Comfortable houses with possibility  
of economical work are shown in the  
illustration on the cover. Such ar-  
rangement is one long step toward  
success in the poultry business.

**PORKLESS DAYS**

We still can't eat pork on Tues-  
days, but because of feed conditions  
on this Coast the taboo has been tak-  
en from beef, and it is possible to eat  
the fat and juicy porterhouse on  
Tuesdays "for them as has the  
price."

California live stock men have been  
appealing for some relief from the  
situation, and permission to sell beef  
for which there is no feed. Feed con-  
ditions are getting no better fast; the  
promised rains did not come.

**HATCH EARLY**

The poultry people who are  
finding profit from the winter layers—  
and there are plenty of winter layers  
for carloads of California eggs are go-  
ing forward to the blizzard afflicted  
East—are already planning a hatch-  
ing campaign to begin soon. Late  
hatched chicks are tardy in coming  
to producing age, and California is re-  
ceiving large returns because of last

year's early hatching. We believe our  
poultry people are materially advanc-  
ing the welfare of the state by their  
plans for early work.

**GROW YOUR FUEL**

Federal Fuel Administrator  
Schwabacher of California has ap-  
pealed for conservation of our avail-  
able supply of coal. We hope most  
Cultivator readers grow their own  
fuel. It is easily done in California,  
and we believe with profit, even on  
our higher priced lands. As a war  
measure, plant a tree. Two tons of  
seasoned wood is worth one ton of  
coal. A cord will run close to two  
tons.

**DRAFT THE BREAD LINE**

The Country Gentleman has  
suggested that there be conservation  
of the men forming a long bread line,

Let us never forget that the cultivation of the earth is the most  
important labor of man. Unstable is the future of a country which has  
lost its taste for agriculture. If there is one lesson of history that is un-  
mistakable, it is that national strength lies near the soil.

—Daniel Webster.

a photograph of which, taken at mid-  
night by flashlight, is shown. It  
thinks that with farmers appealing  
for laborers this line of able bodied  
men should be conserved and placed  
on the farms.

Perhaps it would lessen the length  
of the bread line in the cities if this  
were done, but we feel that the plac-  
ing of such a class of men on the  
farms would not in any way increase  
the production of those farms. Such  
men would be as helpless as children  
and merely call for greater expense on  
the part of the farmer.

Industries in which a gang of men  
can be placed under the supervision  
of a boss may handle that type of la-  
bor, but farming calls for different  
conditions.

**AN IMPORTANT INDUSTRY**

But a few years ago California  
was importing hundreds of cars of  
eggs and poultry products. True, we  
sent enough fruits to more than jus-  
tify this extravagance, but long be-  
fore the war began to convince us of  
the necessity for conservation we be-  
gan to discover how some of the  
wealth of the state might be held  
here by producing more of our staple  
foods. The poultry men were in line  
in this investigation and this effort,  
and instead of receiving 200 or 300  
cars of products we have changed the  
balance until today we are exporting,  
or sending to Eastern markets, 1200 to  
1300 cars of eggs. We are as yet send-  
ing but few cars of broilers or other  
poultry products. The broiler indus-  
try of California has not proved as at-  
tractive as straight egg production.

Among the strongest factors in the  
encouragement of the industry have  
been the Southern California Poultry  
Producers' Association and the Cen-  
tral California Poultry Producers' As-  
sociation. These associations are  
both organized under the general di-  
rection of our state market director  
and have proven satisfactory to the  
majority of the members. There are,  
as is always the case with cooperative  
public spirited effort, those who would  
take advantage of the stabilizing of  
prices effected by such organizations  
and yet be free from supporting them.  
People of this type are now endeavor-  
ing to destroy the associations' effi-  
ciency by selling outside the associa-  
tion with which they have contracted  
to market their product.

**DOWN THE TAXES**

Californians seem to be the  
most cheerful givers of taxes of any  
people in the United States. Our per  
capita state tax cost is \$11.14. New  
Yorkers get off easier with \$8.11  
apiece; Massachusetts, still better,  
with \$7.00; little old New Jersey  
comes in with \$6.40; Wisconsin and  
Iowa are paying at the rate of \$5.95  
and \$4.60; while Pennsylvania, with  
8,000,000 people to care for, does it  
for the tidy sum of \$4.30, or nearly  
one-third of the per capita tax of Cal-  
ifornia.

At one time the voters of this state  
started in to lessen the influence of  
selfish interests in politics and state  
management. This succeeded most  
admirably. It appeals to us that the  
present moment would be a very neat  
time to Hooverize on our taxes or at  
least to begin to plan for a set of men  
to vote for whose aim shall be pri-

marily to lower the expenses of  
state government.

Lest we may be considered knock-  
ers, we believe we are entirely just-  
ified in saying that California's state  
government can show many admir-  
able points. We have much to which  
we can point with gratification and  
say to our Eastern friends that while  
we are paying large taxes we are get-  
ting much in return, but have we not  
reached a point which calls for a lit-  
tle more careful study of the situa-  
tion?

The tax situation is not created by  
the state government alone, but near-  
ly every county and municipality in  
the state has been throwing it in the  
high for the past few years.

**PREVENT FIRE LOSS**

In spite of the campaign for  
fire prevention the average mortal  
says: "This does not concern me.  
Let the other fellow profit by it." But  
note the following from a letter from  
the forest service:

"More than 1500 fires occurred in  
the national forests in California dur-  
ing the season of 1917. Although most  
of these fires were small and insignifi-  
cant, at least 150 were severe, and  
more than \$100,000 was spent by the  
forest service in suppressing them.  
No complete figures are available of  
the amount of damage done, but be-  
tween 15,000 and 18,000 acres of tim-  
berland were burned over. In addi-  
tion to this a large amount of private  
property was consumed. Twelve peo-  
ple at least were reported by the press  
to have lost their lives in forest and  
brush fires the past summer in Cal-  
ifornia."

To be sure the last season was un-  
usually long and unusually dry.  
There were drying winds; there was  
never such traffic in the mountains;  
there was never such shortage of la-  
bor for fighting fires. Then there  
were other aggravating factors. But  
it is none too soon to look to the next  
dry season and find wherein we may  
lessen the loss and the direct suffer-  
ing which comes from these fires and,  
still more, the indirect loss which  
comes from the destruction of our  
watersheds, which it may take years  
to fully appreciate.

**This Week's War News**

The Italians are still victorious.

Great Britain is to recruit half a  
million young men.American troops in France are fill-  
ing the trenches more and more every  
day.Yarmouth, on the eastern coast of  
England, is bombarded and three  
killed.Italian vessels make dash into har-  
bor of Trieste and sink Austrian  
cruiser.Ex-Premier Caillaux of France is un-  
der arrest, charged with giving com-  
fort to Germany.Fierce artillery duels are about the  
only activities along the front in Bel-  
gium and France.Germans refuse to recognize dele-  
gates from the Ukrainians in the  
peace conference.A quartermaster warehouse in  
Washington arsenal is burned with  
large supply of munitions.English aeroplanes made successful  
attacks on railway workshops and  
munition factories at Karlsruhe.The coal shortage has caused many  
vessels to be held in New York and  
other harbors several days over sail-  
ing time.Congressman Gardner of Massachu-  
setts, first to resign from congress and  
enter the army, died from pneumonia  
in Camp Wheeler.Sporman, a spy, has been arrested  
at Norfolk, Virginia. Appeal was made  
from all parts of the country that he  
face the firing squad.Blizzards and the coldest weather of  
the season have prevented the trans-  
portation of coal, and much shipping  
has been delayed because of non-de-  
livery.An army captain by the name of  
Whisler robbed the army bank at  
Camp Funston, Kansas, killing four  
attendants and seriously wounding  
Paymaster Wornall.Mutiny at Sebastopol early this  
week caused, it is thought, by the  
break in peace negotiations at Brest-  
Litovsk, resulted in the death of four  
admirals and of other officers.Ambassadors of the Allies and neu-  
trals in Petrograd are demanding im-  
mediate release of the Rumanian min-  
ister who was imprisoned. The Bol-  
sheviki decline to explain why he was  
arrested.Prussian junkers are now asserting  
they will fight until absolute victory,  
and conditions with the mass of the  
people are more unsettled than at any  
time since the war began. Reports are  
that the famine in Berlin is severe.The nationalization of the railways  
has presented a perplexing situation  
to California financiers because of the  
fact that the revenues of the state have  
largely been derived from railways  
and other corporations. The state ad-  
ministration is endeavoring to protect  
California's interests.

In an address to the Russian people  
in Petrograd, David R. Francis, Amer-  
ican ambassador to Russia, said: "The  
Russian people cannot be too often re-  
minded or too deeply impressed by the  
fact that their hard-earned freedom is  
jeopardized by negotiations for a sep-  
arate peace, nor that if Germany dom-  
inates Russia, their highly-prized lib-  
erty and fruits of the revolution will  
be sacrificed."



# Agricultural News Notes of the Pacific Coast

## Northern California

Yolo County is advertising "first poppies of the season."

Rice growers of Glenn County organized at Willows last Saturday.

Seventy-five new factories were located in San Francisco during 1917.

The Dodge Rice Company at Chico, is planning to plant 1000 acres to cotton.

Prof. E. C. Voorhies of the University of California is in training at Camp Kearny.

Dairymen are finding it necessary to get more returns for their product or cease to buy feed.

The state water commission has granted many applications for water filings on streams of the Sierra Nevada.

In the closing of an estate in Yolo County the court ordered sale of 1107 sheep, which brought return of \$14,424.15.

From the port of San Francisco there were exported to Japan in 1915 goods to the value of \$13,667,486; in 1916, \$33,678,876.

The California Ripe Olive Company at Oroville, Butte County, is planning to extend its operations to include the canning of spinach.

It is estimated that the acreage planted to beans in Sutter County last year will be doubled this year, meaning an acreage of 80,000.

A public meeting to consider the next county fair was held in Ferndale, Humboldt County, last evening. Effort will be made to bring off a big fair.

San Francisco will appoint delegates to the fifth national foreign trade convention, who will endeavor to call attention to California's possibilities.

The Placer County farm bureau has this week made an auto tour of various counties of the Sacramento Valley to observe cultural methods of other farmers.

The Sacramento Valley Sugar Company has leased hundreds of acres in Butte County. Practically 6000 acres of beets will be grown tributary to this plant.

Prof. Woll of the animal husbandry department of the state university is attending a convention of the American Society of Animal Production at Ames, Iowa.

Yolo farmers are divided on the Chinese labor question, many maintaining that we must first correct our home situation by drafting labor not now availed of.

Farm bureau meetings in Glenn County will be held at Elk Creek, January 21, 22; Plaza, 24, 25; monthly meeting of directors at Willows, 10:00 a. m. January 26.

A deputy of the collector of internal revenue will be in Anderson, Shasta County, from January 31 till February 5 to advise with all who will pay the income tax as to making out their reports.

The Vacaville fruit growers' association reports the past as its most prosperous season. It sold 70 cars of deciduous fruits for a gross of over \$1600 per car. Officers elected for the next year are: President, C. J. Uhl; vice president, George Alger; secretary, W. H. Buckingham; treasurer, George Samuels.

## Central California

Kern County has a shortage of potato seed.

Mt. View, Stanislaus County, farm center meets January 26.

Kings County Bee Keepers' Association met at Hanford and reorganized.

San Joaquin Valley will grow considerable cotton during the next season.

Stanislaus County squirrel drive is to take place the first week in February.

Porterville has made big shipments of magnesite, the total reaching 1970 cars.

At an auction sale of a grade dairy herd at Modesto, an average of \$135 per head was made.

Alfalfa is being trucked to the hills to feed starving range cattle. It is bringing \$25 in the stack.

An auction sale of purebred live stock was one feature of the farm bureau meeting in Hanford.

The Valley Growers' Association has fixed upon \$2.75 per ten hour day as compensation for pruners.

Income tax officials are visiting various counties of the valley and giving advice as to making returns.

Tulare creameries have issued cream checks during the last 12 months aggregating \$1,617,000.

A meeting of live stock men was recently held at Modesto, at which the new branding laws were explained.

Lindsay's output of oranges for the season totalled 804 cars. Its crop of olives is about 25 per cent of normal.

Kern County's farm adviser is giving practical advice and assistance where needed in the building of silos.

A vine pruning demonstration by Professor Flossfeder has been conducted at various centers near Modesto.

Dr. A. J. Payne, who has succeeded Dr. Cady in hog cholera work, has been holding demonstrations in Tulare County.

The Kern County farm bureau has distributed \$1100 worth of squirrel poison and contemplates the buying of a full car of Kilmol or bisulphide.

The Central California Bean Growers' Association has been formed, and it is estimated that 75 per cent of the acreage will affiliate with the association.

A mass meeting held at Selma, Fresno County, to discuss the Pine Flat irrigation project brought such small attendance that no definite action was taken.

The Bee Keepers' Association of Tulare County, at its meeting in Tulare elected C. W. Tompkins, president, and R. B. Steeves, Orosi, secretary. A marketing organization was formed.

The growth of the poultry industry of Tulare County has been phenomenal. The Cooperative Association shipped during last year eggs to the value of \$74,000 and poultry to the value of nearly \$25,000. It is thought the industry of the county netted \$500,000.

Turlock, Stanislaus County, has a district which shows a total of farm products amounting to \$7,310,000. It is estimated the increase over the preceding year was approximately 40 per cent. The crops were staples, \$2,000,000 being for corn and beans and \$1,500,000 for cantaloupes.

## Southern California

E. O. Essig is appointed farm adviser of Ventura County.

Hemp is said to net about \$60 per acre in Imperial County.

Southern California poultrymen are holding a great show in Los Angeles this week.

Imperial Valley wants a vigilance committee to deal with the cattle rustlers question.

Orange County bean growers have been filling war department orders, having shipped ten cars.

Extended improvements and additions are being made to the Pomona Valley Canning plant at Pomona.

Registrations are already coming in for the Tractor Short Course to be held in Riverside, February 11-16.

Representatives of Collector Carter are giving information as to the income tax in various southern counties.

Arlington poultrymen have reelected J. M. Davison, Riverside County's member of the Poultry Producers' board.

Because of the profitability of cotton and other crops and dairying the Imperial Valley may possibly plant less of melon acreage the coming season.

Imperial Valley will have an output this year of about 35 carloads of grapefruit. The Southern Pacific buys Imperial Valley fruit for its diners.

Redlands orange growers announce they will do but little shipping until February. It is feared the district will not ship more than 250 cars of Navels.

It is estimated that the total output of English walnuts from Southern California will be about 11,000 tons. This is the largest output ever, and the price the highest.

The slump in prices of ostrich feathers has lessened demand so that ostrich farms are now on the bargain counter. A bird that a few years ago could have commanded \$300 is today going at \$10.

Alfalfa growers of the state are invited to meet in Riverside, Saturday of this week to form a state association. This along the same lines as the Southern California Association which has been so successful.

One of the two original Navel orange trees at Riverside is reported as dying and experts are endeavoring to save it. The state now receives in excess of \$50,000,000 annually from the orchards which have come from this tree and its mate.

Lima bean growers are still maintaining the \$12.12 price. How much the war department will award is still problematical, but the double sacking and extra care demanded by the department increases the cost about 50 cents per hundred pounds.

Last month was Southern California's warmest December in 27 years. On New Year's day three persons were overcome with the heat at the Pasadena Tournament of Roses, and women attending the great football game were attired in filmy summer gowns.

A bill is soon to be introduced into the senate by Senator Johnson of California covering the Colorado River Project. One measure of the bill provides for immediate appropriation of \$2,000,000 to meet the cost of connecting the Imperial irrigation system with the Laguna dam.

## The Coast and General

California's mines gave an output of \$41,457,000 last year.

Oregon is shipping large numbers of sheep to Ontario, Canada.

Haiti has forbidden exports of food to enemies of the United States.

Albany, Oregon, recently shipped one car of beans valued at \$6000.

The Colorado River is now discharging about 7,000 cubic feet per second.

England has 600,000 less hogs than a year ago and over a million less sheep.

A concrete elevator of 100,000 bushels capacity is being built at Athena, Oregon.

The number of sheep in the British Isles has declined slightly more than 1,000,000 head in 1917.

Utah appeals, not for a "beanless day," but for a bean day in which everybody shall eat beans.

Oregon University is certifying to the quality of seed potatoes which are known to reach the provided standard.

Clallam County, Washington, reports more extensive clearing of stumpage lands than any preceding year.

California is not a great silver producing state, but in 1917 she produced over 2,000,000 ounces valued at \$1,745,375.

Twenty-first annual convention of the American National Livestock Association is to be held at Salt Lake City, January 14-15.

Growers of Sudan in Oregon have found indifferent success from last year's planting, but are planning for a more general trial of it next year.

The Utah-Idaho Sugar Company handled last season 65,000 tons sugar beets. This was practically the first crop grown in the Yakima Valley.

Arizona has appointed E. H. Thomas as assistant state leader of county agents. His headquarters will be at the agricultural extension office, Tucson.

The first sugar of the season is now rolling in to Eastern cities from Cuba, and the famine is broken. The prices have been cut one cent per pound.

The war department states that, contrary to the usual belief, physical examination shows that country boys are not physically the superior of their city cousins.

The Commercial Club of Salem, Oregon, is planning for a factory for the weaving of a fiber from flax grown in that section, the fiber to be used in airplane construction.

The Rogue River Berkshire Breeding Association, Oregon, has been formed. It is purely cooperative and aims to unite the breeders in securing the very best blood of the Berkshire breed.

By-products factories in North Yakima, Kennewick and Selah Counties, Washington, paid farmers for waste products over \$300,000 and manufactured them into products which commanded close to \$1,000,000.

Over ten percent of all working people of America are out of a job, some due to sickness, others to seasonal conditions. The average loss to workers in this country on account of sickness is nine days every year. This loss aggregates over \$700,000,000.



# Stock Owners— Here's Your Answer

## What is Pratts Animal Regulator?

Not a food. A general conditioner and tonic for horses, cattle, sheep and swine of all ages. A health builder and preserver.

## What does it contain?

Medicinal herbs, roots, etc. Natural tonics, appetizers, digestives, blood-purifiers, worm-expellers. A scientific, perfectly-balanced combination needed by working, producing and growing animals.

## What does it do?

Pratts Animal Regulator improves and preserves health and, in a natural way, increases strength, growth and production. Prevents most diseases. Saves feed by aiding digestion. Makes rich, red blood and improves circulation. Regulates the bowels. Expels irritating worms. Makes livestock more profitable.

## Does it give satisfaction?

Satisfaction guaranteed or money refunded. The user to be the judge. America's original stock tonic and conditioner, widely used for nearly fifty years.

## How is it used?

Daily, in small quantities, mixed with the feed. Full directions with each package.

## What does it cost?

The price is low—large packages most economical. Pratts Animal Regulator actually costs nothing, since increased production returns the investment with big profits.

## Where can I get it?

From 60,000 Pratt dealers. There is one near you. Direct from manufacturers, prepaid, if your dealer can't supply you.

## Can I learn more about it?

Yes! Write the Pratt Food Co., Philadelphia, for valuable FREE BOOK on profitable management of live stock. Mail your request today.

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## As Others See Us



THE following letter appeared in a recent issue of "Black and White Record," written by A. A. Hartshorn, one of the foremost Holstein breeders of the country and formerly president of the Holstein-Friesian Association of America. Mr. Hartshorn was in California late in October of last year, at which time he attended the October sale at Sacramento.

After visiting the orange and olive groves of Butte County and her rice fields, Mr. Hartshorn attended at Sacramento "a sale of Holstein cattle and there met many of the California breeders. There was a lively interest manifest and the cattle sold for good prices."

In describing his visit to the 11,000 acre Kiesel Ranch near Sacramento, he says: "Here we saw a fine herd of Holsteins and a ranch that not only produced the alfalfa and corn for those 200 animals but grew \$110,000 worth of beans the past season. Most of the country we passed through going out to the ranch was devoted to the raising of beans. The bean crop of the Sacramento Valley, the past season brought about fifteen million dollars.

"Our next stop was with A. W. Morris & Sons, not only California's greatest Holstein breeders but one of the greatest firms breeding Holstein cattle in America. In fact, I never saw a herd numbering 400 animals,

that equalled the Morris herd, either in production or individuality. It will pay a lover of good Holstein cattle to go a long way to see such a herd. Although this firm has not been breeding Holsteins as long as some of us, yet when we see the thought and energy that Mr. Morris and his four sons put into the business, it is no wonder that great success marks their efforts.

"In Modesto, we visited several choice herds, one of which was owned by Miss Holdridge, two of whose cows had just completed records, one of 33.91 pounds of butter in seven days, and the other 34.21 pounds, and she fed and milked them herself. Both of the cows had given over 100 pounds milk in a day, and one of them was at that time exceeding that mark. Miss Holdridge had several daughters and a son of these cows and they were a very promising family of cows. In fact, her herd of nearly 100 animals was one of rare excellence.

"We next went to Kerman, where we visited our friend D. C. Stanyon, who is beginning the breeding of Holsteins and has the foundation of a good herd.

"We were taken out by Mr. McAlister & Son, to their great ranch and inspected a remarkably fine herd of Holstein cattle.

"Space fails me to tell of the great animals in this herd but it was certainly a great treat to see such a collection of fine animals."

## The House of Holstein

By F. H. Stevens

NOTE—This article is reproduced from the December 15, 1917, issue of "Holstein-Friesian World," Syracuse, New York, and coming as it does from the pen of F. H. Stevens, a member of the firm of Henry Stevens & Sons, who since 1876 have been acknowledged one of the foremost Holstein breeding establishments in America, the article carries more than usual weight.



WE READ in St. Matthew, chapter seven, twenty-fourth to twenty-eighth verse, as follows:

Therefore whosoever heareth these sayings of mine, and doeth them, I will liken him unto a wise man, which built his house upon the rock:

And the rain descended, and the floods came, and the winds blew, and beat upon that house; and it fell not: for it was founded upon a rock:

And every one that heareth these sayings of mine, and doeth them not, shall be likened unto a foolish man, which built his house upon the sand:

And the rains descended, and the floods came, and the winds blew, and beat upon that house; and it fell: and great was the fall of it.

Is our short-time official record a foundation of sand?

The growth of the Holstein-Friesian cow in popularity has for the past 25 years made history unprecedented by any race of domestic animals. This popularity has had as its foundation the seven-day test, and in view of the past achievements it might at first thought seem unwise to consider moving our Holstein structure from this foundation.

For more than a decade, each year has seen added to the membership of the Holstein-Friesian fraternity dozens of wealthy men who have been successful in other enterprises and who have taken up the breeding of Holstein cattle as a fad, as an accessory to a country place, or from the sporting spirit which causes other men to take up the breeding and developing of the race horse. Doubtless in nearly every case the matter of

financial gain is also considered, and also in nearly every instance these ventures have been a success from a financial point of view. These breeders always have the worthy ambition to become leaders in their new field as they nearly always were in their business, and, believing the old adage that like begets like, they are willing to pay the ever increasing price for the descendants of the largest record animals.

This demand for the extreme seven day records has naturally made its own supply. We have learned if a cow isn't required to do too much throughout the year, she will at freshening time take from her stored-up fat and energy and make phenomenal records for a short period of time. Expert handling and feeding have been involved and 30, 40 or even 50 pounds per week records have followed each other so rapidly as to leave the mass of Holstein-Friesian breeders in amaze. Seeing the financial success attending the remarkable achievements of the few, the breeders have, generally speaking, fallen in line, with more or less successful endeavors to keep in the race until I fear the real dairyman, whose business is to make milk continuously at a profit, has been lost sight of.

How long will such methods endure? Already we are hearing our great seven day records talked of disparagingly. There is no question among intelligent men that the accuracy of these records is not safeguarded in every conceivable way, and with possible rare exceptions they are correct, but even so their real value from an economic point of view is questionable. Aren't we building our Hol-

## ABORTION IN CATTLE



PREVENTED AND CURED PERMANENTLY  
YOUR COWS MADE PROMPT. REGULAR BREEDERS BY  
**STERILOID**

### STOP LOSING CALVES

TREATMENT: If STERILOID is used at the first sign of abortion the cow will go her full time and

have a healthy calf. If your cows or heifers do not come in season, or fail to get with calf, use STERILOID. Cows get with calf after only one treatment. Write today for FREE BOOK. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with STERILOID. Also contains letters from breeders who have used STERILOID successfully.

**GUARANTEE:** We will refund money in every case when STERILOID FAILS to make good. Price \$1.00. Mail postpaid. In plain wrapper. Dept. L 598-408 Columbus Ave., New York City. Reference, Colonial Bank.

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California Wonder

## KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets.

Jacks and Jennets for sale at all times. Come and see them.

**John Burrell**

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Hanford, Kings County, Cal.

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles



stein-Friesian house upon the sand? Will there not come a time when the buying public will demand more than a seven day record and when our present basis of value will be swept away and must be replaced by long time production?

Almost any breeder now is ready to admit that the long time production is the real measure of the dairy cow's value, but as long as the buying public is willing to pay the money for the short time tests and not seemingly willing to let long time records enter seriously into their calculations, just so long will most breeders work for the immediate dollar rather than for the future welfare of the breed.

I believe the officers of our association should make great the incentive for long time tests, and the greatest and most far reaching incentive would be to evolve some system whereby the cost of making these tests would be greatly reduced. It would seem that this work could be supervised, after the present method of the cow testing association, and somewhat reduce the cost of inspectors. It might be advisable to offer money prizes for yearly herd records in which every milking member of the herd would take a part and would in that way get a year's record.

What would doubtless arouse even more interest would be a futurity, for sires, classified as to ages, two year olds, three year olds and so on. It might be well to make these futurities not only for the individual animal, but for groups of five, ten or perhaps even more daughters of the same sire in the same divisions.

I can conceive of no greater honor

## Butter and Cheese Scoring Contest

H. S. Baird of the Dairy Industry Division of the University of California Wants New Suggestions- Last Contest of 1917. Lots of Pep in Preparations for 1918 Contests.

**T**HE sixth scoring of the 1917 Educational Butter and Cheese Scoring Contest was held at San Francisco, December 27, 1917. Seventeen cubes of butter and 16 cheese were entered.

N. Nyborg of the Modesto Creamery, Modesto, received highest score on butter with 93½. High scores on cheese were as follows: Cheddar, H. C. Watson, Bieber, tied with I. J. Bennett, University Farm Creamery, with 92; California (Granular), Chas. Basclarini, Dixon Cheese Factory, Dixon, 93½; Jack, Rufus Steele, Swanton, 93.

The scoring was done by T. J. Harris, official inspector of the San Francisco Wholesale Dairy Exchange, S. L. Benning and H. S. Baird of the Dairy Industry Division, University Farm, Davis.

The following are scores of entrants whose names are published:

A. G. Ericson, Gold Medal Creamery, Stockton, 92½.

Ed Hooper, Spreckles Market Creamery, San Francisco, 92½.

C. A. Johnson, Bodega Cooperative Creamery, Bodega, 92½.

G. G. Plunkett, Exeter Creamery Association, Exeter, 92½.

H. Dons, University Farm Creamery, Davis, 92.

J. T. Hague, McCloud Dairy, McCloud, 91½.

### Good Workmanship on Butter

Mr. Denning, who was one of the judges, makes the following comment on the butter.

"The average score of the entries in this scoring was 92.24. Although this average is not as high as that of

for any sire than to have ten of his daughters make more milk and butter in a given year than the ten daughters of any other sire. Perhaps there are other inducements more practical than these that would tend to the more general adoption of the long time tests.

The problem of the dairyman is becoming each day harder to solve. His produce goes largely to a class of people who must depend on it as a cheap food, and no matter what the cost of production may be there is a limit to what he can sell it for. His labor is continually advancing in cost as are also the feeds for his cattle. Through federal enactment the byproducts of the distillery are unavailable and the proposed enactment of the coming legislature will also very likely remove from the market brewers' dried grains and malt sprouts so that a half of our former tonnage of high protein byproducts will no longer be available. This, of course, will tend to greatly increase the price of those remaining. We as Holstein-Friesian breeders should be prepared to supply the dairyman with the cattle of proved ability in long time production for he must have animals of this class in order to survive.

I am not sure but it would be the part of wisdom with the future of our breed in view to entirely abandon the seven day test. Very likely this would react to our immediate disadvantage. "A moving house is not a comfortable habitation."

But the long time production is the rock upon which the foundation for the permanent success of any breed of dairy cattle must be built.

some of the former scorings it is a very creditable showing. There was no score below 90, while 76 per cent of the entries scored 92 or above. The most defects in flavor were those caused by old or unclean cream. During the cooler months and periods of light production it is often the case that the creamery, as well as the patron, becomes a little neglectful in the proper delivery of the cream to the creamery which results in the bitter, stale or unclean flavors in the resulting butter. Cream that is kept at a low temperature for several days may have a low acidity, being practically sweet but containing a bitter, unclean flavor which will produce a butter of inferior quality. The acid test by itself cannot be depended upon at this time of the year as a satisfactory basis for grading.

The workmanship of the butter, as a whole, was very good. Most of the cubes had a very close, firm body and were free from grit and mottles.

The body was criticised mostly for being leaky. Several of the samples were very open and contained a great deal of loose brine. This defect is probably due to the fact that the recent rains have started the pasture to some extent and the cows are now getting a small amount of green feed. This together with the effect of the number of fresh cows in certain localities might give a softer fat than the buttermakers have had in the past few months and he has not yet adjusted his methods to meet conditions. Several of the entries were extremely light in color and were criticised for this defect."

### Cheese Shows Winter Characteristics

There was a larger number of



A PRIZE WINNING CREAM SEPARATOR

## THE DE LAVAL CREAM SEPARATOR

### Is a Winner!

Why don't you let it win for you?

At the great national and international expositions, the juries have invariably acknowledged the superiority of the De Laval. They awarded the Grand Prize, the highest possible award, to the De Laval at the Panama-Pacific Exposition at San Francisco in 1915, as also at Buffalo, Chicago, St. Louis, Paris, Brussels, and all the great world expositions for more than 35 years.

What the world's greatest dairy experts, the men who operate the creameries and the big milk plants and dairies, think of the De Laval is best evidenced by the fact that 98% of the cream separators in use in such plants the world over are of De Laval make.

### De Laval Produced Cream Makes the Best Butter

Since 1892 the National Buttermakers' Association has held butter-scoring contests each year in connection with its Annual Convention, and at every such Convention butter made from cream separated by a De Laval Separator has scored highest. This is a 100% record for the De Laval. No room for chance there. Only unusual merit made such a record possible.

Proof of the superiority of De Laval Separators and of De Laval produced cream has been piled up and multiplied so many times that it is no longer questioned. It is an accepted fact.

If you are without a cream separator, or in need of a better one, let the De Laval start winning a bigger cream profit for you NOW.



A PRIZE WINNING PRODUCT

**DE LAVAL DAIRY SUPPLY CO.**

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

61 Beale Street - San Francisco

**EVERY NEW DE LAVAL SEPARATOR HAS A BELL SPEED-INDICATOR**

## Elliott-Brant Rancho Guernseys Are Persistent Producers

The results of our first two years of official testing show our herd to average 10,172.28 Pounds of Milk and 507.97 Pounds of Fat. One half of these cows were heifers with first calf who averaged 8,670.24 Pounds of Milk and 436.01 Pounds of Fat (only seven pounds under the average of all A. R. records). Our mature cows averaged 12,710.5 Pounds of Milk and 621.52 Pounds of Fat (120 pounds over the average of the mature cows of the breed).

A bull from these cows will increase the production of almost any herd.

**Elliott-Brant Rancho, - Owensmouth, Cal.**

## BERKSHIRES



Forest Grove Duchess 5th

Booking orders for a few bred sows, in service to Maplewoode Duke and Highwood Standard 91st.

**MAPLEWOODE RANCH**

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## THE GREAT PROVEN SIRE King Mead of Riverside

Stands out among the leaders of the Holstein breed as a sire of large yearly record daughters. He is the sire of AAGGIE ACME OF RIVERSIDE 2D, the only cow in the world that has produced over 2425 pounds butter in two years and 1331 pounds in one year, strictly official test. He has another daughter, Aralia De Kol Mead, that is soon to finish around 1150 pounds, strictly official.

Sons of this great sire almost ready for service now available at dairymen's prices. Some are more than half brothers to these two great cows. Among the lot are two seven-eighths brothers to Aralia De Kol Mead. Their dams have records above 800 pounds butter.

Would it not be good business to breed some of this blood into your herd? It is the real solution of the high production cost problem.

Their pedigrees and prices on request.

**A. W. Morris & Sons Corp.**  
Woodland, Cal.

## TAGUS

### Aberdeen Angus

Largest herd west of Rockies. Unlimited demand for our bulls in season.

The ideal breed for baby beef, feedlot, or range.

(Beef Dept.)

**Pacific States Corp.**

Tulare, Cal.

H. C. MERRITT, Jr., Manager

## Holstein Bulls

Well bred, vigorous, registered Holstein bulls of good type for sale. Steady sales have moved all our bulls of service age, but we have a few unusually good calves to offer at moderate prices.

**The McCloud River  
Lumber Company**

McCloud, California

## Shorthorn Cattle and Berkshires Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco  
Carruthers Farms, Mayfield, Cal.

## ABSORBINE

Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. \$2.50 a bottle at druggists or delivered.

Book 1 R free.  
W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

cheese entered in this scoring than in the fifth. The quality was a slight improvement over the last scoring also. The average score of all cheese entered was 91.38. The averages of the different classes were as follows: Cheddar, 91.3; California (Granular), 91.25; Jack, 91.8.

The flavor of the Cheddar cheese was fair but generally speaking, was too mild. These cheese seemed to show a lack of acid development in both flavor and body. Some flavors were very mild, similar to the California (granular) and the bodies on these cheese were rubbery, and did not "break down." Five of the seven cheese in the Cheddar class were criticised for being too "open."

The principal criticisms on the flavor of the California (granular) and

Jack was "bitterness." The workmanship on these classes of cheese, generally speaking, was better than that of the Cheddar. The most common defect in the body was "too soft" due to too much moisture. The finish on several of the cheese was cut on account of their untidy appearance. Some of the cheese had bad "follower rims." This can be avoided, largely by turning the cheese in the hoops the first thing in the morning and placing them back in the press for a few hours.

This completes the scorings for the 1917 contest. Some changes will be made in the contest to be held in 1918. We will appreciate suggestions from any interested parties relative to the improvement of the coming contest.—H. S. Baird, University Farm, Davis, California.

## California Sheep and Wool Growers Meet

Discuss Marketing and Other Business Measures

ON JANUARY 3, 4 and 5, the California Sheep and Wool Growers' Association held their tenth annual meeting at the University Farm at Davis. About 50 sheepmen from all parts of the state attended the meeting, taking part in the varied discussions vital to their interests.

"Better Methods of Marketing Wool" was discussed by Market Director Weinstock. The advantages of collective marketing were clearly pointed out and a strong discussion followed. It was the consensus of opinion that the growers were not realizing the full value for their wool and a promotion committee of ten was appointed to thoroughly investigate the advisability of establishing a central warehouse whereby it would be possible to sell large lots and thereby interest Eastern buyers.

F. W. Washburn, manager of the Western Meat Company, delivered a short address on "The Sheep Market," referring to the present extreme high price of mutton causing a decided curtailment in the fresh mutton trade.

President Nares addressed the meeting on the "Importance of Cooperation and Organization," emphasizing conditions. Professor True outlined the work undertaken by the livestock commission of California recently appointed by the Food Director R. P. Merritt. W. H. Heileman delivered an address "Sheep on the Farm," outlining the project of placing a flock of sheep on the average farm and the work being undertaken by the extension division of the University of California through the farm advisers and in cooperation with the animal husbandry division. Mr. Heileman encouraged the establishing of farm flocks, telling of the success of such flocks in his county.

F. A. Ellenwood called attention to the curtailment of lamb consumption by Food Dictator Hoover, requesting that no lamb or veal be served on dining cars, restaurants and hotels.

While the food administration has realized its mistake and assured the sheepmen the matter would be adjusted, the cards "No Lamb Served" may still be found on dining cars and in restaurants. Mr. Ellenwood contended that the most economical method of producing mutton is in form of a five or six months lamb which would dress 36 pounds. If the sheepman was compelled to keep this lamb until a year old, the carcass would probably then weigh 46 pounds, or an additional ten pounds. On the

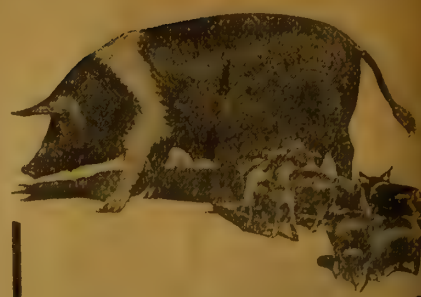
other hand, by selling the lamb at five months of age, the sheepman can keep a breeding ewe in place of this lamb, which would produce another lamb which would dress 36 pounds or a total of 72 pounds against 46 pounds, resulting in a gain of 26 pounds of dressed mutton by selling lambs at five to six months.

Professor R. F. Miller explained that the use of lambing sheds was generally considered practical where bedding and hay can be provided. Losses of lambs are materially reduced. A circular has been prepared on lambing sheds, giving various types of shelter and discussing the use of same, which may be had by applying to Division of Animal Husbandry, University Farm, Davis. Professor Miller also discussed advisability of establishing an advanced registry for fine wool sheep. Since the wool clip admits of concrete measurement it is possible to determine the yearly performance of rams and ewes similar to dairy cow production. This would not only result in increasing the annual wool clip of stud rams by better feeding and breeding, but would assure the man buying rams of the performance of their sires or dams. Figures were presented giving the results of a number of fleeces which had been tested for weight, shrinkage, length, etc., factors to be considered in qualifying for the advanced registry. Considerable discussion followed and an Advanced Registry Board was later appointed.

A special feature of the meeting was a ram show held at the judging pavilion, where different breeds and types of rams were on exhibition. Also a demonstration in machine and hand shearing was held and the Rambouillet stud ram owned by the University Farm was sheared after the sheepmen estimated the weight of the fleece on the sheep's back, it being exactly 12 months growth. The ram sheared 30 pounds.

An illustrated lecture on "Sheep and the National Forest" was delivered by C. A. Rachford, assistant district forester of the United States forest service.

The following committees were appointed: Legislative; Ernest A. Gammon, Thomas Gianella, Willard Clark, C. A. Kimble, D. I. Waltz. Advanced Registry Board; E. A. Bullard, Prof. R. F. Miller, C. A. Kimble, Mrs. F. A. Meacham. Marketing Committee; F. A. Ellenwood, Grant Wilcox, Peter Moi, D. J. Murphy, Thomas Gianella, F. L. Washburn, C. A. Kim-



## Hampshires and Duroc-Jerseys Prize Winners

At the California State Fair, 1917, our Exhibit won 43 ribbons, mostly Champions and Firsts. Our Duroc-Jersey herd is headed by the sensational yearling Councilor, sired by Critic D. Councilor was Reserve Champion boar at the Fair. Our Hampshire herd is headed by Grand Champion boar, Dukes Allen.

Pure bred breeding stock of these popular strains for sale now.

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Feeding Booklet sent on request.

## CATTLEMEN!

Your cattle brand must be registered with the Cattle Protection Board before February 20, 1918.

Applications received after that date will be given only secondary consideration.

Persons using unrecorded irons will be liable to arrest.

## State Cattle Protection Board

Underwood Building  
San Francisco, Cal.

## DUROC JERSEYS

Sows, gilts and a few boars of the best breeding FOR SALE

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ble, Louis Olcees, P. R. Peterson, H. A. Jastro.

Officers Elected

Officers elected for ensuing year: F. A. Ellenwood, president; C. A. Kimble, vice president; Prof. R. F. Miller, secretary; F. N. Bullard, treasurer.

It was decided to hold the next annual meeting again at the University Farm at Davis.

We have from Secretary Miller the resolutions from which we quote:

The Resolutions

The resolutions called attention to a present shortage of mutton and wool and appealed to the sheep breeders for greater production and also made appeal to the department of the interior for aid in the present food shortage. "We earnestly request the Honorable Franklin K. Lane, secretary of the interior, to cooperate with us by granting, with such restrictions as he may see fit, to open federal lands within California to the grazing of sheep."

Another resolution called for organization of an agency for the marketing of wool and to the end that such an organization might be perfected, a marketing committee of ten was appointed.

Regarding the effort of Ralph P. Merritt, food director of California, to improve marketing conditions of livestock and live stock production, a resolution fully endorsing all efforts of the food director and live stock commission was passed, and "this association stands prepared to lend assistance and cooperation in every way possible."

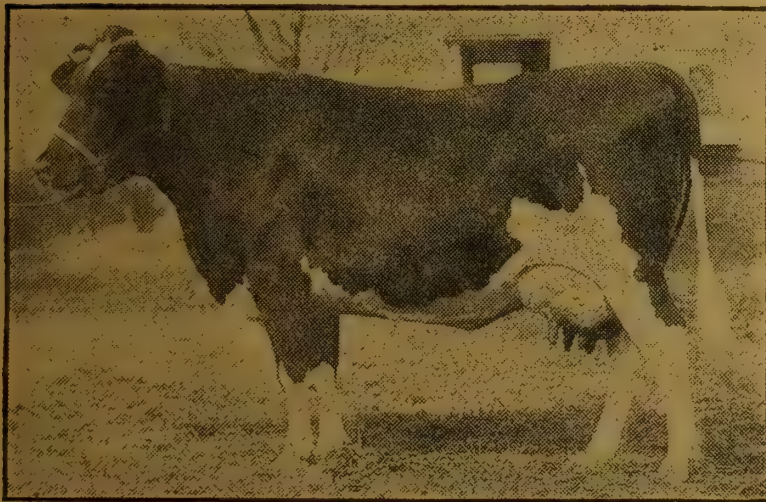
As to labor: "The owners of sheep in this state are desirous of lending all assistance within their power to bring the war to a speedy and victorious conclusion, but are unable to render the maximum amount of assistance in the production of feed and clothing for ourselves and Allies unless the labor necessary to the proper handling of stock is secured;" . . . "this association respectfully requests that those governmental departments, who are in close touch with all phases of the labor situation, give this matter serious consideration, and assist in providing the wool growers with an efficient labor supply."

"The California Wool Growers' Association will pay a reward of \$100 for information leading to the arrest and conviction of any party stealing sheep from any member of this association, and the secretary should prepare a record of the marks and brands of sheep of the members of this association."

As to forest burning and the securing of better sheep feeding by it, it was unanimously resolved that the rule of the forest reserve that this practice shall be absolutely under its control is right and has the fullest support of this association.

The association wants a larger bounty than at present and urges that congress enact a law granting bounty on all predatory animals, that the legislature protect the sheep from dogs; that the proper authorities be asked to fix a rate for the shipment of feeder or stock sheep from valley points to mountain ranges and return.

## Sensational Holstein at National Dairy Show



Early Dawn Peep 2d

Early Dawn Deep 2d, a purebred Holstein cow, afforded one of the sensations at the National Dairy Show at Columbus, Ohio, by making a typical Holstein record of 33.52 pounds of butter in a week. While that is a good record, it is not an exceptional one for a Holstein cow. It is unusual, however, in view of the conditions under which it was made. The strain of traveling to the show, the strange barn, the crowds of the curious and

the excitement incident to the show were all serious obstacles to the making of a record. It is a wonderful record in view of these trying conditions. Her record for seven days at the show was 634 pounds of milk of 4.22 per cent fat, yielding 33.52 pounds of butter.

Early Dawn Peep 2d last year made the semi-official record of 1,287.72 pounds of butter in a year. She is owned by Peter A. Small of Chesterland, Ohio.

## Range Cattle Conference at Tucson

A complete summary of the range feed and stock conditions of Arizona, based on a recent January survey made by the agricultural extension service, will be reported by G. W. Barnes, livestock specialist, this afternoon, Saturday, January 19, at the range conference held at Tucson, Arizona.

Hon. Dwight B. Heard, chairman state council of defense, will on the same morning give a report on "Special War Problems of Beef Production," bringing important messages from national livestock shows and conventions at Chicago and Salt Lake City, from which he has just returned.

PURE BRED

REGIST'D HOLSTEINS

Above is the picture of our second sire

### Prince Gelsche Walker Korndyke 137414

When we paid \$4000.00 for him at public auction at Hanford, Cal., people said "A foolish investment." His first yearling heifer to sell at public sale brought \$1200 in the Guaranty Sale, and went to help found an unusually high class herd. We now have about 50 of his daughters in our herd, the first due to freshen in January. If signs don't fail we think the price paid for "Prince" will fully justify our judgment.

We also have some of his bull calves on hand. Why not get one right now before his daughters freshen and make their records? Build up your herd while the opportunity is here. They are cheaper now than they will be hereafter.

If you want time your note is good. Don't forget this.

Below is

### Sir Aaggie De Kol Acme 185724

We will tell you about him next time.

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FRED W. KIESEL PROP'R. C.W. YOUNG SUP'T.

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Weanlings Bulls and Heifer Calves, Entire Herd Tuberculin Tested

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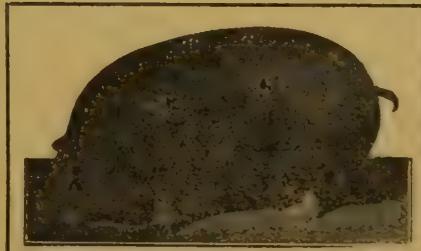
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Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

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is what a prominent breeder from out of the state remarked after the Guaranty Sale at Sacramento.

We give to every sale, big or small, the same efficient service that won the approval of the breeder above quoted, a service backed by an equipment and organization that has already brought about a new order of things in public sales of registered livestock in California.

If you want to sell your whole herd or consign high class animals to a consignment sale, let us go over the matter with you.

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# King of the Black and Whites 83354

## The Greatest Producing Sire in California

Now has 30 A. R. O. daughters, a greater number than any other sire in California, and more coming right along.

He was the first bull in the world whose seven nearest dams averaged over 30 pounds butter in seven days, and this is only one instance of the remarkable uniformity of the great production records in his pedigree both for milk and butter.

He is transmitting his wonderful inheritance of large milk and butter production because there are no weak spots in his breeding for generations back, no throwing back to a low producing ancestor, and by every law of animal breeding his daughters, as they are already proving, will be uniformly great producers and his sons will hand down his good quality to their offspring.

## King of the Black and Whites

is being given a full opportunity in our herd where he is being mated with a large number of high record cows and highly bred heifers. We have none of his offspring to offer at present, but if you want to keep your herd in line with the march of production records it will interest you to visit our herd and get acquainted with these matings.

We have a limited number of grandsons of King of the Black and Whites and King of the Pontiacs for sale at moderate prices and terms.

## HENDERSON COMPANY

Sacramento Bank Bldg.

Sacramento, Cal.



In placing FINDERNE Soldene Valdessa at the head of our herd of carefully selected registered Holstein breeding females we believe we have secured a very desirable combination of individuality and production.

**HIS SIRE** is King Valdessa, who is by a son of the highest record daughter of the mighty King of the Pontiacs, and is out of Valdessa Scott 2nd, 41.88 pounds butter in seven days, 164.29 pounds butter in 30 days, both world's records when made, and her wonderful transmitting power is shown by her five A. R. O. daughters with records up to over 38 pounds butter in seven days.

**HIS DAM** is the world's record heifer FINDERNE Soldene Hengerveld, 35.34 pounds butter in seven days, 136.82 pounds butter in 30 days at first calving as a three year old, and she is a daughter of the wonderful sire King Hengerveld Aaggie Payne who has three junior three year old daughters with records from 31.94 to 37.33 pounds butter in seven days, and four senior three year old daughters with records from 35.33 to 37.13 pounds butter in seven days. One of his daughters holds the world's record in the junior two year old class for yearly production with a record of 1200.64 pounds butter, another holds the world's record in the junior three year old class with a production of 1395.06 pounds butter in one year, and a third daughter made 1075.29 pounds butter in one year as a junior three year old.

**FINDERNE SOLDENE VALDESSA** ranks high as an individual, and his first crop of calves in our herd, a large percentage of which have been heifers to date, are straight, vigorous youngsters, nicely marked, and we consider them unusually good.

We invite you to visit our herd, and it will be well worth your while to consider a son of **FINDERNE SOLDENE VALDESSA** for YOUR herd sire. We have a very few youngsters to offer at present, out of good A. R. O. dams.

## Toyon Farm Association

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## Think!

And you will decide that your next herd sire MUST be backed by great YEARLY record of milk and butter. And when you look for a bull with such records behind him, find what we have to offer in young sons of

### PRINCE ALCARTRA KORNDYKE

our senior herd sire, whose dam is Tilly Alcartra, the world's greatest long distance producer, the only cow of



The first five daughters of **PRINCE ALCARTRA KORNDYKE** to finish yearly records as two year olds averaged 15,333 pounds milk and 675.92 pounds butter in one year, a showing equalled by only a very few bulls of the breed.

You need this persistent blood in your herd, and you can secure it by buying one of our moderately priced young sons of **PRINCE ALCARTRA KORNDYKE**.

The J. S. GIBSON CO.

Williams, Cal.

## Field Notes from the Live Stock Men

Notes from Many of California's Live Stock Pastures. Personal as to Breeders and Breed

Elliott-Brant Rancho, Owensmouth, has figured prominently in recently admitted official records of registered Guernseys. Some of the notable record makers are Princess of Meadowbrook, 14089.3 pounds of milk and 745.79 pounds of butterfat equal to 877.37 pounds of butter 85 per cent fat; Imp. Mahy's Nelly II du Douit, 14421.40 pounds milk and 676.60 pounds butterfat equal to 796 pounds butter 85 per cent fat; Nerio's Elsie Granger, a senior 3 year old, 10357.8 pounds milk and 188.11 pounds butterfat equal to 690.89 pounds butter 85 per cent fat; and Little Beauty 2nd, a senior two year old, 10480.13 pounds milk and 563.20 pounds butterfat equal to 662.59 pounds butter 85 per cent fat. These are all records for one year, and there are a number of fine records now in the making in this progressive herd of registered Guernseys.

Nattaline Walker, a heifer in the herd of registered Holsteins owned by Bridgford Company, Knightsen, recently freshened at the age of two years and sixteen days, and at this writing has over 20 pounds butter to her credit in seven days under official test, and promises to increase this somewhat. She has milked as high as 75 pounds in one day. She is a daughter of King Walker 5th, whose dam is the noted show cow and producer, Paula of Chagrin Falls 3rd, 751.40 pounds milk and 30.84 pounds butter in seven days, 23,657.6 pounds milk and 987.82 pounds butter in 362 days.

J. M. Christen, Contra Costa County, added a number of good registered cows and heifers to his herd by purchase in the Third Sacramento Holstein sale. Mr. Christen has been dairying with grade Holsteins and had built up a splendid herd of high grades through the use of carefully selected registered bulls for a number of years, and from now on will apply his knowledge and experience to the breeding and development of purebreds.

"Silos are Adapted to every portion of the state where corn or any of the sorghums can be grown and are as necessary to the highest degree of success as they are in Wisconsin, New York, Illinois, Nebraska, or any other state where thousands of farmers have proven them a necessary part of the farm equipment." Thus does W. A. Barr, county agricultural agent in Arizona, open his good bulletin on "Silos and Silage Crops for Arizona." And how well the place of the silo on the farms in all the western states is defined as "a necessary part of the farm equipment." California has already become a corn producing state of no mean consequence, the old fallacy of believing that corn would not mature in the state having been largely done away with, and there is no reason why Arizona should not likewise grow immense crops of corn. Livestock farming yields its greatest profits when conducted upon the principle of making the livestock market the home grown feeds, and no greater factor than good corn silage can enter into any plan of home grown feeds.

Imp. Donnington Goldie 5th, in the Edgemoor Farm herd of registered Guernseys owned by Walter H. Duppe, Santee, recently completed a splendid year's official test. She

freshened at the age of three years one month, and in one year made 17,861.7 pounds milk and 796.52 pounds butterfat equal to 937.08 pounds butter 85 per cent fat. Other recently completed records in the herd include Mambrino's Lura, 14,822.4 pounds milk and 721.60 pounds butterfat equal to 848.94 pounds butter 85 per cent fat; Florham Dame, 16,326.8 pounds milk and 685.83 pounds butterfat equal to 806.85 pounds butter 85 per cent fat; and Ultra Deanie, a senior 4-year-old, daughter of Ne Plus Ultra, 12,189.90 pounds milk and 614.66 pounds butterfat equal to 711.37 pounds butter 85 per cent fat.

H. E. Cornwell, Modesto, after selling off his females of milking age last spring, now has an exceptionally fine lot of registered Holstein heifers that will be heard from later. Many of them are daughters of Prince Hiske Walker, full brother to the state record junior four year old Lady Hiske Walker, 34.25 pounds butter in seven days, now heading the herd of Walter F. Mitchell, Visalia.

Lady Netheland Pontiac the new world's record junior four year old Holstein heifer in the seven days division, who recently made an official record of 43.52 pounds butter in seven days, again brings into prominence a number of other members of her family that have been central figures in great Holstein events of the past year. In the first place her sire, King Pontiac Konigen, is full brother to K. P. Diona Pietertje, 825.60 pounds milk and 40.15 pounds butter in seven days, who is the dam of King Segis Pontiac Konigen, the bull for which Mr. Fred F. Field of Massachusetts paid \$35,000 last summer, and she is also the dam of Majestic Rag Apple, the five months old bull calf that sold in the Dairymen's convention sale at Syracuse, N. Y., in December for \$35,000. The sire of the new record maker is also brother to King Korndyke Pontiac, owned by Fred W. Kiesel, Sacramento, and sire of King Korndyke Pontiac 20th, the young bull which W. J. Higdon secured in the Guaranty sale for \$6,500, and is also brother to the California state record senior two year old K. P. Tola Joe owned by Gotshall & Magruder, Ripon, whose 7 months old daughter was bought for \$1400 by J. W. Benoit in the Guaranty sale.

Tilly Alcartra, the most wonderful milk and butter producing cow the world has yet developed, freshened for her sixth time on December 27, dropping a beautiful heifer calf by Sir Aaggie De Kol Acme, son of the world's official record butter cow Aaggie Acme of Riverside 2nd. Tilly was never in better condition at freshening time, despite the fact that she has been put on yearly test every time she has freshened, and she is expected to add greatly to her fame this year.

Miss Valley Mead de Kol Walker increased her eight months after calving record given in a previous issue and now has to her credit as the world's record in the junior 3 year old class of the seven day division eight months after calving, 24.70 pounds of butter. Along with the butter record she made 452.70 pounds milk. This exceeds the former butter record held by FINDERNE Holingen Payne by 2.13 pounds. She is owned by A. W. Morris & Sons, Woodland, and is the dam of King Korndyke Pon-

When writing advertisers, mention The Cultivator.



tatic 20th, the young bull bought by W. J. Higdon, Tulare, for \$6500 in the Guaranty sale.

Geo. A. Murphy has two August boars that are good to look at. He says of one of them "He's the best boar in California," and he knows. They are out of Robins Ruby, who was first aged sow at the Panama-Pacific Exposition and grand champion at Sacramento state fairs of 1912 and 1914.

Maurice Rucker has sold his Ranch 13 at Fair Oaks and moved his Durocs to his new farm on the Causeway highway, two miles from Sacramento between that city and Davis.

H. L. and E. H. Murphy have a good bunch of one and two year old Short-horn heifers, a number of which will calve this month. Some of them are bred to a son of Cumberland's Type, Charley Saunder's great bull who won 36 grand championships under three years old.

H. L. and E. H. Murphy report many inquiries for highly bred stock in the Berkshire line and a number of satisfactory sales during December.

A sale of three Shorthorn bulls and six heifers to the Newhall Land and Farming Company has recently been made by H. L. and E. H. Murphy.

Iowana Counties 12th 231117 is a new arrival from Iowana Farms. She reached the farm of H. L. and E. H. Murphy early in December and will show as a two year old this year. She is well bred, sired by Iowana Rival Champion 3rd 194730, and is in pig to Iowana Champion Peer 3rd 184355. She has Double Champion, Star Masterpiece and Lord Premier Rival blood, is bred to Iowan leading herd boar and should have a classy litter. She is of medium size with good lines, broad face, good hams and strong heart girth.

Tulare Holstein Farm, home of the \$6500 bull King Korndyke Pontiac 20th, and owned by W. J. Higdon, has started the season's official testing well. Blanche Nudine Clothilde 2nd, a junior four year old granddaughter of King of the Pontiacs, has 27.24 pounds butter and 516.8 pounds milk to her credit in her first seven days on test. She was dry only three weeks before freshening and had no special preparation. Another junior four year old granddaughter of King of the Pontiacs, Princess Wynima Pontiac, made 22.32 pounds butter and 511.3 pounds milk in seven days, test begun three weeks after a severe ordeal at calving. This heifer is owned by H. E. Vogel, Fresno, who bought her in the Guaranty Sale and shipped her back to Tulare Holstein Farm to be officially tested. These are some of the first records made under the supervision of Henry L. Redd, who promises to make things hum as herdsman in charge of the fine bunch of cattle that Mr. Higdon has assembled as his foundation.

Bonita Stock Farm, Lodi, is showing some very consistent records with the registered Holstein cows and heifers recently brought out from the East. Among some of the records recently made are those of Canary Korndyke Queen 19.98 pounds butter in seven days, Pioneer Oaks Pet Fobes, 19.00 pounds butter in seven days, and Hazelwood Liscomb Aaggie Ormsby, 19.03 pounds butter in seven days, all of these being senior two year olds. Maid Pontiac Fayne, who dropped her first calf at just a few days past three years, made at this freshening the very good records of 479 pounds milk and 22.50 pounds butter in seven days.

Other records include Florressey De Kol Lawn 2nd, 20.09 pounds butter in seven days at four years, Cora Colanthus of Black Hawk, 499 pounds milk and 20.56 pounds butter in seven days at ten years of age, and Geneva Colanthus Hengerveld, 22.90 pounds butter in seven days at five years.

Henderson Company, Sacramento, has made some good official records in spite of very severe handicaps in the way of loss of men through military draft. One of the most interesting records is that of Lottie Walker Spofford 3d, daughter of the four time 30-pound cow Lottie Walker Spofford. As a senior three year old with second calf she made 533.5 pounds milk and 25.04 pounds butter in seven days with no preparation whatever and with a change of herdsman and milker in the middle of her test. She is a beautiful heifer and a most promising candidate for a large record. Two junior two year olds, Sunnyslope Duanna Pieter-tje and Korndyke Witkop De Kol 2nd made 22.46 and 19.64 pounds butter in seven days respectively. Lockhart Segis Walker made 21.98 pounds butter in seven days as a junior three, while Susie Fayne Walker made 25.70, Lyons Vevie Segis 20.17, and Maylntje 2nd 20.21 pounds butter in seven days as senior three year olds. Calypso Pontiac Aaggie made 25.70 pounds butter in seven days as a four year old. The gaps in the Henderson Company farm organization have now been filled by a new superintendent, herdsman and assistant herdsman, and things are moving forward on the big breeding establishment.

Ingnaro De Kol, the great Holstein sire whose blood has already profoundly influenced the progress of the Black and White breed in California, ranks as the leading sire of the breed for the high yearly records of his daughters. Out of 25 A. R. O daughters to his credit, 13 have yearly records averaging 21,009.78 pounds milk and 844.28 pounds butter, an average not approached by 13 daughters of any other sire. Possibly his most famous daughter was Aralia De Kol, the first cow in the world to produce 28,000 pounds milk in one year, and she has one daughter above 1100 pounds butter in one year and another one now making a record that will exceed 1100 pounds butter. Another of his daughters, the famous Juliana De Kol, was junior champion female at the St. Louis World's Fair, and at one time held the senior two year old world's butter record for seven and 30 days. Her blood is very much in evidence through her son Juliana King of Riverside, who is the sire of both the sire and dam of Aaggie Acme of Riverside 2nd, the world's official record butter cow for 305 and 365 days, and world's record for butter in two years either official or semi-official, and he is also the sire of the dams of Miss Valley Mead De Kol Walker, who now holds two world's butter records, and Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, and is one of the very few bulls of the breed to have three daughters with records above 1000 pounds butter in one year.

Livestock men throughout California will welcome the news that C. A. Briggs is once more in the field for the Cultivator after an absence during which he built a new house and barn on his small farm near Sacramento.

Registered dairy cows are so few in numbers as compared with grade and mongrel dairy cows that they belong properly at the present time only in the hands of skillful breeders who will

## Prince Riverside Walker



We bought Prince Riverside Walker to head our herd before his sisters made their wonderful world's records, and they are justifying the confidence we have in this combination of breeding.

PRINCE RIVERSIDE WALKER is sired by Prince Gelsche Walker, and is out of Aaggie Acme of Riverside, 28.35 pounds butter in seven days, 15,032.60 pounds milk and 808.32 pounds butter in one year.

Thus he is three-quarters brother to Miss Valley Mead De Kol Walker, 36.81 pounds butter in seven days as a junior three year old; 21.33 pounds butter in seven days eight months after calving as a senior two year old and 24.70 pounds butter in seven days eight

months after calving as a junior three year old, both world's records in classes. She also made 17,010.90 pounds milk and 790.38 pounds butter in 257 days as a senior two year old and will make close to 1100 pounds butter this year as a junior three.

PRINCE RIVERSIDE WALKER is thus also out of the same dam as Aaggie Acme of Riverside 2nd, 1331.41 pounds butter in one year under strictly official test, a world's record; 2426.78 pounds butter in two years, also a world's record. His dam's sire is one of the few bulls of the breed to have three daughters with records above 1000 pounds butter in one year, including the former world's record senior three year old Queen Juliana Dirkje, 1021.73 pounds butter in one year, and he is also the sire of King Mead of Riverside, the only bull of the breed whose daughters average over four per cent butter fat on yearly test.

PRINCE RIVERSIDE WALKER is siring extra good calves. Big, vigorous, well marked, and a very high percentage of them heifers. We have only a limited number of his bull calves, all out of good dams, and priced well within their value. Write for descriptions and prices or better still, visit our farm and make a selection.

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Right now we are offering a limited number of GOOD young bulls sired by

### MERCI LAD KORNDYKE BURKE

conceded to be one of the greatest individual Holstein bulls in the west, and as to his breeding—

He is sired by the noted individual and sire De Kol Hengerveld Burke, one of the greatest sons of De Kol 2nd's Butter Boy 3d, and his dam is that wonderful producer Winnie Korndyke Cornucopia De Kol, 31,034.14 pounds milk and 1201.06 pounds butter in one year, the first cow in California to produce over 1200 pounds butter in one year.

MERCI LAD KORNDYKE BURKE is siring a wonderful lot of calves. Come and see his beautiful sons and daughters and we feel sure you will decide to select one of his young sons to head your herd.

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Anita M. Baldwin, Owner



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test them, cull closely to the best families, and thus produce the highest class of purebred bulls to go out and improve and breed up the common herds. But the day ought to come when purebred dairy cows will make up the bulk of the dairy herds of the country. The selective process that has produced the purebred dairy cow of today has gone far toward the elimination of low producers and the chance of breeding low producers, and a dairy herd of purebred cows is therefore a sound foundation upon which to build the business of a commercial dairy, aside from the greater value of the increase.

The Henderson Company of Sacramento have been making sales of some high-grade Holsteins. Probably the most noteworthy sale was to Moreing Brothers, whose farm is near Stockton. The purchase price was \$1,500 for the two following bulls: Manteca Walker Spofford Lyons, No. 211,366, born September 29, 1916. His sire was Judge Lyons, the herd sire of A. A. Hartshorn in Syracuse, New York, and the dam is Lottie Walker Spofford III, No. 256,340. This young bull's 13 nearest dams averaged 29 pounds butter in seven days. His dam is a splendid young cow of our herd, who made 21 pounds of butter in seven days as a junior two-year-old. She is a daughter of the famous Lottie Walker Spofford, and the King of the Black and Whites. The other sale was of Manteca Korndyke Supreme Glista, a son of Supreme Glista Pietje and Mollie Korndyke Hengerveld.

The Veramont Stock Farm, owned by H. M. Barngrover of San Jose, is building up a fine herd of Herefords. The latest purchase is 33 head from Snyder of Oregon. The foundation of the Snyder herd was purchased in Kansas City some years ago at exceptionally long prices. Mr. Barngrover now has 75 head of Herefords on his Plumas County ranch. He already has his eye on some which will be winners at the next state fair.

F. H. Everson, manager of the Lake Mills Holstein Breeders' Consignment Sales Company, writes that the dates of May 1 and 2 have been chosen as those of the coming spring sale, which is one of the great events of the Middle West live stock happenings.

T. J. Gist & Sons of the Holberk Stock Farm have just completed offi-

cial test on four of their registered Holsteins as follows: Bonny Spot Foot, 214,907, made 21.28 pounds of butter; Holberk Hengerveld Pietertje, 326,929, 15.4 pounds as a two-year-old; Lady Belle Hengerveld Pietertje, 267,952, 20.43 pounds; Gleesome Girl Belle Finale, 214,907, 21.22 pounds. This ranch has also just received a registered Percheron stallion from D. B. Adams & Son of Modesto, which they consider one of the best around Tulare. This horse won several prizes in Illinois, Oklahoma and Missouri, and also won first at Modesto in 1917.

R. K. Walker, secretary of the Southern California Duroc-Jersey Association, will make a trip to the Duroc-Jersey herds of the Middle West during the last part of January and February to select breeding stock for the California breeders. Many Western breeders are taking advantage of this opportunity to secure Eastern blood without having to rely on mail orders.

R. C. Sturgeon is planning for a model stock ranch in Ventura County. He will breed pure bred Holsteins and Duroc-Jerseys. Mr. Sturgeon has some classy Durocs and hopes to make an importation of more of the finest from the best Eastern breeders. Holsteins already in Tulare County will be the nucleus for a fine bunch and to it he hopes to add still more blue ribbon winners. Interest in the Holsteins is increasing in this state as never before and we are glad to see Mr. Sturgeon add to Tulare County's pure breeds.

E. E. Greenough, Merced, reports sale of splendid young bull to C. E. Markey & Son, at Fowler. He was by Lorna's Exile King with 691 pounds butter record, and Mae of Venadera, his dam, has a record of 432 pounds fat.

#### MIDWINTER POULTRY SHOW

Continued from Page 67

Chamber of Commerce cup for best ten birds also went to Mr. Stewart. The Poultry Breeders' Association cup for best pen in the show was awarded to Williams Bros. of Fullerton for a pen of Brown Leghorns. The American Poultry Association medal for best cockerel was won by F. X. Price of Los Angeles with a single comb Rhode Island Red. The Globe Milling Company's cup for best pen of White Leghorns went to George Schmidt of Ukiah, and the Quality Farm cup for best Barred Rock cockerel to C. W. Angier of Tropic.



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## As They Used To Do

A Quotation from an Old Book—the First Report of the United States Department of Agriculture for 1862.



FIFTY-SIX years is not so long a time, but it is most interesting to look back and see how the poultry fancier regarded the industry, or, per-

haps more properly, how the utility poultry man regarded the possibilities of poultry from a commercial standpoint. Hence, it is interesting to look into the report of the department of agriculture, the first report made in this country, bearing date of 1862. The department was organized as a branch of the patent office as directed by enactment approved by President Lincoln, May 15, 1862. There are many interesting features in this report, touching upon almost every branch of farming as then conducted in the United States. Two writers discuss the matter of "Raising Poultry and Eggs for Market" which was written by "A New Englander" and "Poultry" by D. S. Heffron of Utica, New York.

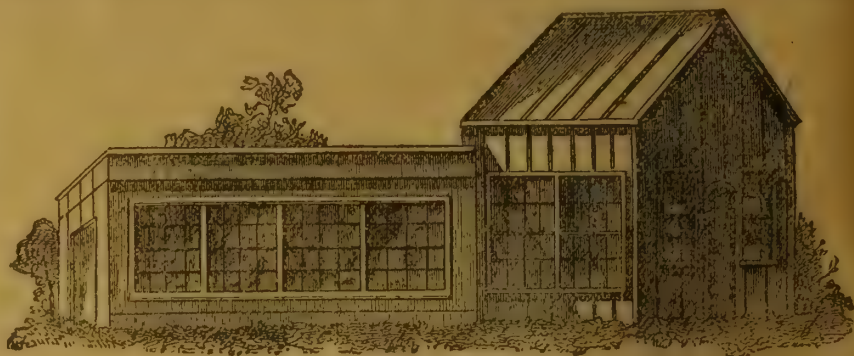
As will be noted below "New Englander" scarcely touches varieties of

ment in a familiar manner, and to offer for the benefit of the farmer, the breeder, and the amateur, certain facts and hints acquired by the writer through long experience with, and a careful observation of the habits, wants, and characteristics of domestic fowls, and to point at the probable profits attainable by breeding poultry and raising eggs for ordinary market purposes.

"The common fowls of the country are at this time, of course, in great excess of numbers over any and all of the 'fancy' breeds of late introduced among us from abroad.

"Yet it is a noticeable fact that, by means of the importation of foreign blood, made within the last dozen years, and especially through the introduction of the large Chinese variety (*Gallus giganteus*) amongst our farmers and poulterers since 1850, the distinctive characteristics of this race of birds are now very widely disseminated among the domestic fowls of America; and it would be unusual at the present day to meet with the flock in our farm-yards or poultry-houses about the country where the marked features of the Chinese race of fowl are not to a greater or less extent visible.

"That the mixing of this foreign



As They Built 60 Years Ago

Reproduced from old wood cut used in report of the Department of Agriculture of 1862 showing a poultry house "in use for several years and found admirably suited for sitters and layers. The glass may be double in order to get better winter protection."

poultry other than the ordinary barn-yard type, excepting to commend more general use of the Chinese varieties to give greater size to the ordinary domestic fowls of America. But Mr. Heffron touches upon the Asiatics, refers to the Hamburgs, the Polish Games, Dorking, White Face Black Spanish, Minorcas, Andalusians, and Leghorns, the last three all coming under one class, as having many characteristics in common. "The Dominique is the best fowl of the common stock that we have, and is the one fowl in the country that has enough distinct characteristics to entitle it to a name. Then on the side a short description is given of the Creepers, the Rumpless and the Silks.

As to laying capacity, we note: "The Hamburg hen has been known to lay 240 eggs in a year, a greater number than any other variety, but her eggs are quite small, weighing only a little over an ounce."

But the matter in this old book is so interesting that we quote verbatim several paragraphs:

"A great deal has been written in the few past years on the subject of advantageously breeding, keeping and fattening poultry and producing eggs for market. Many suggestions and numerous theories have been presented to the public through the medium of books and the press of our own and other countries upon this theme; and much of the information and advice thus promulgated has been of a visionary and impracticable character, though, at the same time, no inconsiderable amount of valuable information has thus been elicited from actual experiments made public regarding this agreeable and now highly important pursuit in rural life.

"It is the object of the present paper to present the results of a long, practical experience in this depart-

ment with that of our native races of domestic birds has proved of great advantage, no one who has bred poultry extensively in the last 12 or 15 years will deny; and whether we consider the item of increase in size and weight, at a given age, attainable with certainty through this crossing of stronger foreign blood upon our native breeds, or that of the well-decided advantage thus attained in the enlargement and increase in weight and the number of eggs obtained from the product of this crossing, the general gain by the process is most clearly in our favor. It is, therefore, but truthful to premise that the mixture of the Chinese blood with that of the common fowl of the country has proved of great benefit, and the continuance of the practice will be found of corresponding advantage in raising poultry for the market, inasmuch as the product of the crossing matures much earlier than does the old native stock, thus giving, within a shorter period, more pounds of flesh in good season; while for the producing of eggs, the half bloods are known almost uniformly to commence laying at a much earlier age than the common fowl, thus affording us eggs abundantly at from four and a half to five and a half months old, and afterwards. For these reasons the writer fully agrees with a recent English author of reliability and experience that the introduction of the new races of fowls in late years 'has resulted unquestionably in diffusing over the country greatly improved breeds of this interesting and useful kind of live stock; that more judicious modes of treatment than were formerly practiced have been made known; and that our markets certainly will by this means henceforth be more fully supplied with both eggs and fowls of a vastly superior quality'.

The above is from the article, "Raising Poultry and Eggs for Market." A few other sentences taken at random are quoted.

"In raising poultry, whether the object be to produce chickens for the market or to obtain a supply of eggs,



the first principle to be observed is absolute cleanliness in and around the houses they occupy."

"If the fowl houses are kept thoroughly dry and clean, and the poultry free from vermin, there will be but little sickness among the chickens. When the case occurs, however, remove the bird that droops at once, knock it on the head and bury it beneath the roots of the grape vines. This will be a profitable and effectual riddance of sick fowls. Robert Scott Burn, in his 'Lessons of My Farm,' very rightfully asserts that 'the cure



A Beauty and a Doer  
Ancona Cock heading first pen owned by Hocking Poultry Farm, Los Angeles.

of disease in ordinary fowls is not worth attempting, and the best way—mercilessly, or rather mercifully—is to devote the sick bird to the hands of the executioner."

"Good range, pure water, dry shelter, animal food, and entire freedom from filth are all needful."

"The calculation here made as to returns in eggs is set down at an annual yield of 140 eggs to each hen."

"The secret of having hens to lay in winter, lies not (as asserted by some) so much in feeding them particularly, at that season, as in the simple fact of hatching the pullets in the right month of the year to bring them to maturity in the fall."

"Common barn-yard fowls, without extra feed, do not reach their full size before they are about 18 months old."

"To raise large fowls of any kind, have the chickens hatched early in the season, feed often and give a variety of nutritious food, until they get well started, and the more liberally the young are fed during the first season, if they always eat up all that is given them, the more satisfactory will be the results."

House the flock comfortably; keep houses dry and well ventilated, allowing plenty of fresh air and sunshine.

Early hatched chicks have the advantage of a longer and better growing season.

Early hatched pullets produce more winter eggs and return the greatest profits.

Remodel the old house—stop cracks and eliminate drafts.

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### The Egg Contest

**A**N INTERESTING feature of the 1918 Poultry Breeders' show was the "Egg Contest" under the management of F. P. Battle.

The judging of the 15 or more lots of eggs was handled by Messrs. M. A. Schofield, F. W. Foster and B. R. Holmoway, all experts in egg production.

In this contest the American Standard requirements as to plumage, condition and shape are ignored; while on the other hand egg type and uniformity of color of fowls and weight, color, structure, uniformity of size and food value of the eggs were taken into consideration.

The selection of the flock as to egg type, proper method of feeding and

proper feeds are the fundamentals of success in the production of eggs, which is the profitable branch in the poultry business.

The results of the contest showed the Blue Andalusians, first; White Oringtons, second; Rhode Island Reds, third; Plymouth Rocks, fourth; Ovo Grande, (a new variety), fifth. The last named scored the highest weight with 12 eggs weighing 34½ ounces or 12½ ounces more than the average grocery egg weight.

All scores and rules were withheld; but after careful consideration by experts, a printed set of rules and score cards will be furnished at the next exhibition. The proceeds from the auctioned eggs in the contest were turned over to the Red Cross.

### Selection and Care of Poultry Breeding Stock

**O**NE of the prime essentials in poultry breeding is to use only strong, vigorous, healthy stock. It is only by continuing to do this that a flock can be built up which will have strength and vigor and which will produce strong, fertile eggs, strong chicks capable of making quick growth, and pullets with sufficient stamina to stand the strain of heavy egg production. The appearance of a bird is not always a sure indication of its vigor, but appearance and action taken together are a fairly reliable basis for picking out vigorous birds. The comb, face, and wattles should have good, bright color; the eyes should be bright and fairly prominent; and the head should be comparatively broad and short, not long and snaky or crow headed. The bird should be alert and have a vigorous carriage. The legs should be set well apart and strongly support the body, with no tendency to weakness or a knock-kneed condition. The bone as seen in the shanks should be strong, and not too fine for the breed. The plumage should be clean and smooth. Lack of condition often accompanies soiled, roughened plumage. Fowls that have been sick but apparently have recovered should not be used for breeding if it can be avoided.

**Purpose of Breeding**

In selecting stock for the matings the purpose of the breeding should be kept clearly in mind. If the desire is to produce exhibition stock, birds should be selected that are nearest the standard in type and markings or that will combine their qualities to produce offspring most nearly approaching the standard. If the desire is to produce table fowls, birds that have a body shape suitable for carrying an abundance of meat should be selected as breeders. They should be broad and deep of body, have good length both of back and keel and especially a broad breast well covered with meat. If the desire is to produce stock for eggs, birds should be chosen as far as possible that are good egg producers or are the sons or daughters of good egg producers.

**Time to Mate**

Matings should be made at least two weeks before beginning to save eggs for hatching. If less time is allowed, the maximum fertility is not likely to be assured. It is often desirable to mate even farther ahead than two weeks so that a few eggs can be incubated for five or six days to see whether they are fertile. If these eggs are not fertile, there is still time to change the male bird and thus insure fertile eggs for the earlier hatches.

**Size of Matings**

The breed influences the size of the matings. Under yarded conditions it is usual and desirable to run from 12 to 15 females of the lighter type, such as the Leghorns, from ten to 12 females of the general-purpose type, such as the Plymouth Rocks, and from eight to ten females of the heaviest type, such as the Brahmas, with one male. Where the breeding fowls have free range and the male is strong and vigorous, it is possible to obtain fertile eggs from a considerably larger



Mike  
A winning Barred P. Rock owned by H. L. Gill, Tropic.

flock of females. A vigorous Plymouth Rock cockerel on free range should give good fertility when mated to 20 to 25 females, while a Leghorn male under the same conditions can be mated successfully to 38 to 40 females. If eggs for hatching are desired from a flock too large for a single male to fertilize, two or more males can be run with it either at the same time or by alternating the males on successive days.

**Age of Breeding Stock**

Pullets or hens, cockerels or cocks can be used in the breeding flock. Hens, however, are to be preferred to pullets because they lay larger eggs and seem to give better fertility and stronger chicks. Yearling and two-year-old hens are to be preferred to older hens. Any birds, either male or female, that have proved to be especially valuable breeders should be retained as long as they will breed.

**Free Range for Breeding Stock**

If possible, the breeding stock should have free range. It is better if this be provided during the entire fall and winter before the breeding season; but if this be not possible, free range just preceding and during the breeding season will be of great value. Birds on free range will give a higher fertility, better hatches, and stronger chicks.

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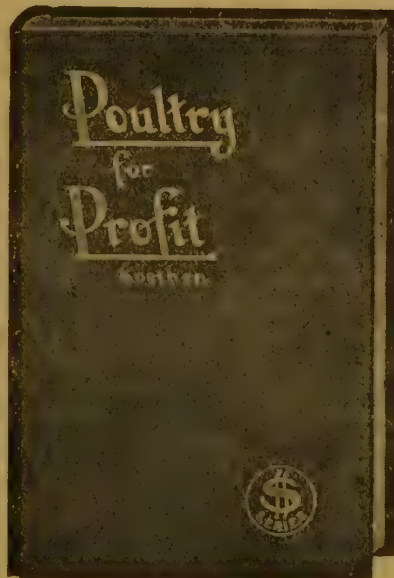
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# Poultry can be made to Pay



**T**HERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

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BY

Jean A. Koethen

Graduate of University of Calif.

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## A Paying Poultry Ranch

Written for California Cultivator by Jean A. Koethen



OOD laying stock, convenient and sufficient equipment and judicious feeding are the three factors which make for success in a modern commercial poultry ranch. Lack of one of these is at the bottom of a majority of the failures which are so frequently pointed out as proof that poultry "doesn't pay." The ranch known as the L. E. Bliss poultry ranch of Van Nuys, now owned by L. T. Keefauver, is a conspicuous example of the fact that success is not a matter of luck, but depends very largely on equipment and management.

The Bliss or Keefauver ranch is not one of the largest. It covers two acres of ground and provides house room for about 3,000 layers, though the number carried at present is somewhat under the full housing capacity, being about 2,300 birds, half hens and

long and contains five sections 12 feet wide, with a maximum capacity of 100 Leghorn hens. That the number allowed is from 75 to 85 hens instead of the maximum capacity speaks well for the judgment of the owner. Each house is fully equipped with hoppers and feeders and automatic fountains, and a notable exception to the small single yard plan of most commercial ranches—each house has two yards. It would be difficult to estimate the exact size of these double yards, but they looked about the size of an ordinary city lot. The object of this double-yarding system is not to provide forage for the hens. That, with so large a number, is impossible. It is rather to provide for growing a green crop and at the same time purifying the yards. While the hens run in one yard a crop of barley is growing in the other. When this has



A Producing White Leghorn

half pullets. As is the case with an increasingly large number of commercial ranches, no male birds are kept. Baby chicks are bought from the big nearby hatchery, and the cockerels are sold for broilers as soon as they are old enough. This simplifies the care of the stock, does away with the expense of feeding males and leaves more house room for the pullets.

As this ranch is planned as a one-man or one-family ranch, where the work is done by the owner with such help as his family can give, the greatest care has been used to save steps. The six laying houses, all facing south, are arranged in two rows of three each, with an alley behind the first row and in front of the second, so that feed may be carried through in a wagon from one end to the other. Along the back of the houses in the front row is a series of grain bins which can be easily reached with the wagon, thus doing away with the need for a large and expensive feed house. Between two of the houses of the front row is a cemented floor, roofed over. Here is the clover cutter for preparing the green feed, with its little gas engine. Here are also pails and tubs for mixing the moist mash and the big barrel of semi-solid buttermilk, and here, against one wall of the adjoining house, is the alarm clock which turns on the electric lights in all the houses at 4 a. m., so that the hens may get busy while the owner takes his morning nap. From this cement mixing room it is but a few steps to any one of the houses.

Each of the six houses is 60 feet

reached a suitable length for running through the clover cutter it is cut, and then, when all has been cut that can be, the hens are turned on to nibble at the roots and the other yard is planted. The barley in these runs and a good-sized patch of alfalfa furnish the greens that keep these hens singing and laying.

There are two brooder houses, each provided with a large brooder stove and each with accommodations for 1,500 chicks. Early in February these houses will be cleaned and prepared for the two lots of chicks which are ordered for the 7th and the 28th. "We believe in early hatching," said Mr. Keefauver, "for that is the only way to get fall eggs. The pullets may molt a little, but we will get more eggs than we would if they were hatched later." A particularly good feature of these brooder houses is the arrangement of the windows, which are along the south side and reach from the floor to a height of perhaps two or two and a half feet above it. The glass in these windows is removable and may be put in so that it closes the window tightly or at an angle so that it lets in a current of air above. With these panes of glass so adjusted there can be no draft on the floor where the chicks are, and yet a continual current of air from the top of the window to the air shaft at the side of the room keeps the air more nearly pure than is possible in most cases. Ventilation is always a problem when a large number of chicks is brooded in one room, and this method of providing air has proved very satisfactory.

As the place has been in Mr. Keefauver's hands only a month, he has followed his predecessor's method of feeding with few changes. A commercial dry mash is kept before the hens in hoppers at all times. The first meal of the day is the ration of scratch grain, which has been scattered in the straw on the floor the night before. This mixture consists of equal parts rolled barley, Egyptian corn and milo. By the time Mr. Keefauver comes out this scratch grain has been pretty well cleaned up and the hens are ready for the green cut up barley or alfalfa with which their troughs are filled. Soon after noon a moist mash is given. This consists of equal parts bran, alfalfa meal and the dry mash mixture which is fed in the hoppers, moistened with semi-solid buttermilk and water. This semi-solid buttermilk is a product of Kansas dairy farms and is being quite largely used by Van Nuys poultrymen. It is much cheaper than California buttermilk and just as satisfactory. The alfalfa meal is an experiment, and Mr. Keefauver has considerable doubt of its value as a poultry feed. It does no harm, but he has not yet found that it brings results. The evening meal consists of sprouted barley.

The eggs from these 2,300 hens during the month of December sold for \$200 above cost of feed. As all the work is done by Mr. Keefauver and his family, this is practically all profit, or salary, whichever one likes to call it, and is sufficient proof that poultry can be made to pay, even in war times.

Eliminate the male bird at end of hatching season. Fifteen million dollars is lost each year by allowing the rooster to run with hens during the summer months. Produce infertile eggs. Dispose of the male bird not later than June 1. Market a better quality of eggs.

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FULL PARTICULARS IN FREE BOOK "CHICKENS FROM SHELL TO MARKET"

**Coulson Co.**

PETALUMA, CAL.



## Egg Laying Contest at Storrs

Storrs, Connecticut, January 2, 1918.  
—Report for the ninth week ending January 2.

It is almost unbelievable, but nevertheless a fact that the hens in the laying contest at Storrs produced 56 more eggs last week than for the previous week and nearly 170 more than for the corresponding week last year. The hens were all in fine condition and were expected to make rapid gains under any ordinary weather conditions. Instead of this these birds have withstood a solid week of the lowest temperatures on record. The ninth week of the laying contest constitutes the most intense and protracted cold wave during the past 28 years. A vivid idea of actual conditions is readily obtained from the subjoined table showing the official minimum temperatures during the last contest week.

Friday	.....Dec. 28	Zero degrees
Saturday	.....Dec. 29	3 below
Sunday	.....Dec. 30	17 below
Monday	.....Dec. 31	13 below
Tuesday	.....Jan. 1	8 below
Wednesday	.....Jan. 2	9 below
Thursday	.....Jan. 3	7 below

It will not be surprising to poultrymen to learn that a large number of birds had their combs and wattles frozen and of course, the Leghorns and other light breeds fared worse. Of the Rocks, Reds, Wyandottes and Orpingtons, 17 per cent of the birds had their combs frozen and 13 per

cent had their wattles frozen, whereas in the light breeds, 76 per cent of the hens froze their combs and 16 per cent froze both their combs and wattles. In other words, of the 100 hens in the contest, nearly one-third of this number have both frozen combs and frozen wattles. Obviously the management of the contest does not dare to predict what will happen to the egg yield during the next week or two. Meanwhile every bird with a frozen comb has been treated with a mixture composed of five parts of vaseline, two parts of glycerine, and one part of turpentine.

The three best pens in each of the principal varieties are as follows:

### Barred Plymouth Rocks

Jules F. Francis, 318; Rose Rock Farm, 237; Rodman Schaff, 183.

### White Wyandottes

Brayman Farm, 286; Obed G. Knight, 283; J. Frank Dubois, 236.

### Rhode Island Reds

Pincrest Orchards, 295; Flintstone Farm, 227; Richard Allen, 183.

### White Leghorns

Braeside Poultry Farm, 282; Hollywood Farm, 281; J. Frank Dubois, 246.

### Miscellaneous

Cook & Porter, (Buff Wyandottes), 304; Oregon Agricultural College (Orpingtons), 270; Dr. N. W. Sanborn, (Buff Wyandottes), 204.

## Turkeys and Alfalfa---Good Combination

Turks Fatten on Grasshoppers—Alfalfa Fattens Without Them

**T**HE value of a flock of turkeys to the alfalfa grower can hardly be estimated, says M. E. Kinsey of the Agricultural Extension Service of Arizona. He adds: The result of their work is appreciated by some of the men who have used them in hay fields that were being badly damaged by grasshoppers.

The birds should be allowed free range in the fields, especially early in the season in Southern Arizona valleys, possibly as early as the last of February, in order to catch the young hoppers when they commence to hatch. They are eaten more readily at this time and are destroyed before they have a chance to do any damage to the crop. The flock should not be left in the field too long as they will trample the alfalfa after its gets good growth. It is much better to range them for a time after each cutting, removing them as soon as there is enough growth to make possible any damage. In this way, besides lessening the damage to the hay crop, there is less growth on the ground for the young hoppers to hide under and the work of the turkeys will be more thorough.

The flock should be large enough to provide one bird to the acre. Sometimes, if the infestation is severe, it may be necessary to provide three or four birds to the acre. Aside from the benefit to the alfalfa, there is the added profit of the turkeys, which do well and grow fast on this kind of free range. Alfalfa and turkey raising go hand in hand, and profit and material benefit can be realized from such a combination. If you have had any experience with grasshoppers in the past year, give the turkeys a trial. The cost will be small and it is much

easier to let them do the cleaning up than it is to have to apply poison bran-mash after damage has been done to the crop.

### BUYING DAY OLD CHICKS

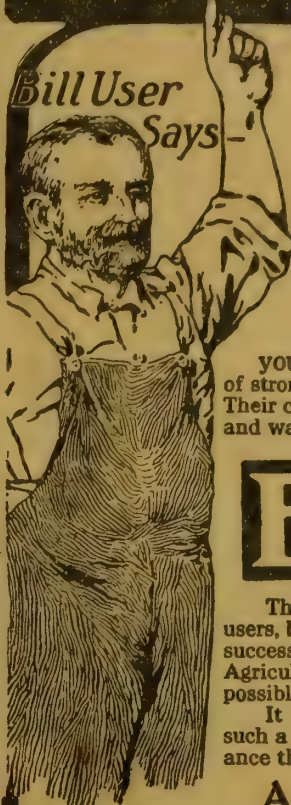
The business of hatching day old chicks continues to grow. Many poultrymen prefer, where they can secure well hatched chicks from eggs of dependable stock, to avoid the trouble of incubator handling, but we believe it is wise for those who follow this practice to arrange at once for securing their stock for the coming season. Feed is too high to waste any of it on indifferent stock. Only eggs from strong constitutioned birds should be used, and the earlier buyer should be able to contract for only such chicks.

L. B. Cary is highly gratified by the winnings of his Cornish fowls at recent poultry shows. They made winnings at Fresno, Modesto, and at the Mid-winter state show held at Colinga his birds won one and four on cock, one and three on cockerel, one, three and four on hen, one on pullet, and one and two on pen, and amongst the specials, gold sweepstakes, best display egg class, gold special champion cock, cockerel, hen, pullet, pen and English class—altogether, 22 awards.

Green feed is excellent for poultry and can be substituted for a considerable amount of the grain ration. Grow oats, vetch, and rape for summer use; cabbage and mangel beets for winter. Store cabbage and beets in a dry room or bury in a pit and cover with straw and earth.

Hot weather retards the growth of young chicks.

# HATCH EVERY EGG



"Why gamble with valuable eggs and more valuable time experimenting with an incubator—learning to run it? It's business with you from the start with a Buckeye Incubator, because all the experimenting has been done for you.

"You don't guess on the hatch, you get it—to the full number of hatchable eggs the first time and every time. And good strong chicks too, that grow to quick maturity."

Whether you are a beginner or a big operator, your problem is the same—to get the full hatch of strong chicks. A hatch of weak chicks is worse than none. Their care is a waste of feed and time. You avoid the risk and waste with a

## BUCKEYE

THE PERFECT INCUBATOR

The universal satisfaction of over half a million Buckeye users, big and little, proves that there is absolute certainty of success in hatching. Endorsement of the Buckeye by all the Agricultural Colleges and Experiment Stations removes all possible doubt.

It is built up to a standard, not down to a price. Up to such a high standard of correct principles and exact performance that we place behind it an unqualified guaranty.

### A Guaranty That Guarantees

The Buckeye is guaranteed to hatch more chicks and stronger chicks than any other incubator; to operate satisfactorily in any temperature down to freezing; to require no artificial moisture and no attention to the regulator from the time the hatch is started until it is finished. Any Buckeye that fails to meet this guaranty will be taken back any time within 40 days.

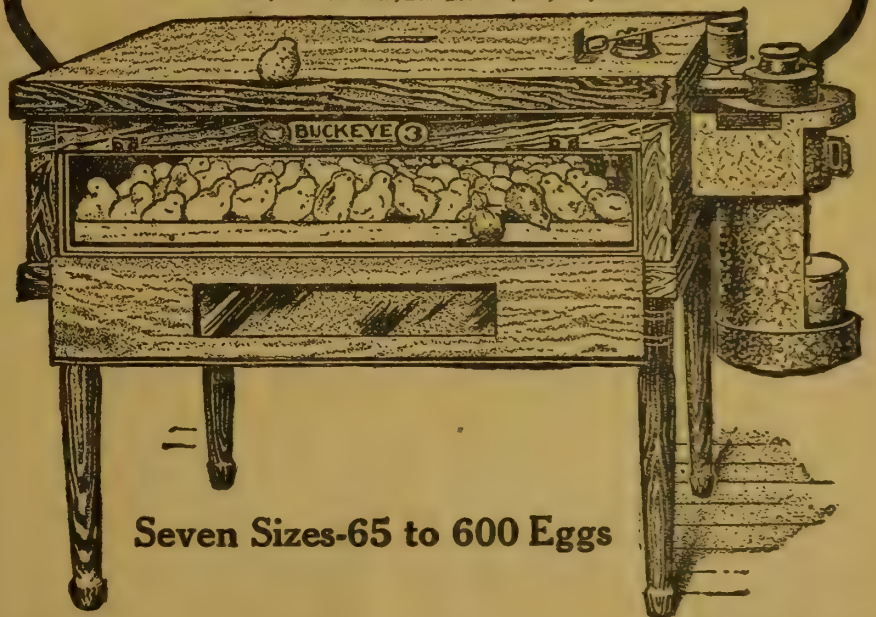
We want you to put your Buckeye to a test with any machine. We want you to know for yourself that it is the best in the world. Our guaranty is behind the first hatch and every hatch.

**Write for Catalog.** It contains the most wonderful lot of testimonials from Standard Colony Brooder users telling how they invariably raise from 90 to 95 per cent of their hatches in this wonderful brooder. Write a card for the catalog.

## The Buckeye Incubator Company

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Pacific Coast Branch, Box 420 Oakland, California



Seven Sizes-65 to 600 Eggs

Los Angeles Agents  
FOR

## Buckeye Incubators and Brooders

Germain Seed & Plant Co.

326-328-330 South Main St.

Los Angeles

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For Chickens and Hogs

Lactein is pure fresh buttermilk, with the water taken out, then processed and modified so it will keep in any climate indefinitely. It makes healthy, vigorous fowls, more weight, firmer flesh and more eggs.

One gallon of Lactein is equal to 40 gallons of best buttermilk for chickens or hogs.

Shipped on receipt of price.

52 gallon barrels at 50c per gallon, \$26.00 per barrel.

5 gallon kegs at 70c per gallon, \$3.50 per keg.

Money back if not satisfied

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### TREES

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Eureka Walnuts are the Best**—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alhambra St., Alhambra, Cal.

**Here Is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons: Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

**For Sale**—Fancy and standard varieties of Grafted Walnuts and Pecans. Largest variety of Walnut grafting wood in U. S. We are the oldest and most extensive propagators of walnut varieties in the U. S. Prices reasonable. Tribble Brothers, Lodi, Cal.

**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References: R. R. Morris, East Whittier, Cal.

**For Sale: Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencia and Washington Navel, Eureka and Rio seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110, Los Angeles.

**Placencia Perfection Walnut Trees** on black root. Still have a limited supply of first class stock. Scions used in grafting taken from trees showing a high record for crop and quality after seven years of careful selection. Hugh T. Thomson, Orange, Cal. Phone 502R1.

**Walnut and Almond Trees**—Mayette, Franquette, Concord, and Willson Wonder on Northern California Black root. Texas prolific and Drake seedling almonds on almond root. Stock is first class, cannot be better. Write for prices. Ekstein Nurseries, Modesto, Cal.

**For Sale**—5000 Royal Hybrid and Black Walnut trees, two and three years old, ½ to 1½ inch caliper, 3 to 8 ft. Also Grafted Eureka and Eureka grafting wood. John Miller, R. F. D. 4, Box 278, Lodi, Cal.

**Pear Trees**—Offer several thousand Bartlett, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton, Ore.

**By Far the Lowest Priced** means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**For Sale**—1000 each Mission and Manzanillo olives ¾ to 1½ in. caliper, strong vigorous, clean trees, 20c each, in nursery. Roy R. Mathews, Buena Park, Cal.

**My Olive Trees** are selected for bearing qualities, also avocados, feijoas, citrus and deciduous trees. Bishop's Nursery, Highland.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 3 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**For Sale**—3500 Valencia, 2500 Eureka Lemons. Young trees. Select fruit buds. Reasonable prices. H. Clements, Glendora.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, La-Manda Park, Cal.

**Walnut Trees**—Placencia Perfection, selected grafts guaranteed stock. Wm. Pollard, South Pasadena, Cal.

**Fig Trees**—Thrifty, large Callmyrnas and Capris. Correspondence invited. C. A. Nelson, Exeter, Cal.

**Apricots, Olives, English Morello Cherries and Arizona Ash.** First class trees. C. E. Moyer, Hemet, Cal.

**Florida Sour Orange seedlings**, year old. Write for details. Katsuragi, 23rd St., Upland, Cal.

**Apricot Trees For Sale**—A choice lot. Carsten Truelsen, Nurseryman, Hemet, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale, inspection invited.

**For Sale**—Eureka Walnut grafting wood. R. M. Fay, R. D. 4, Anaheim, Cal.

### HOGS

**The Billiken Brand of Chester Whites**—There is right now a big shortage of swine in California. The output of 1917 will show even a greater shortage unless the farmers of this state get busy and raise more hogs. Good breeding stock is scarce and hard to get. THE BILLIKEN BRAND represents the best obtainable; they are of that mellow type that mature early and are such satisfactory easy feeders. Get started with this strain and help out the Food Administration and your own pocket as well. Write me your wants—do it today. I can still furnish first class animals at reasonable prices. C. B. Cunningham, Mills, Cal.

**Grape Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more boars left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 27th, and a few bred gilts. Our herd won the Premier Breeder's Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massive Orange. Watch for the sensational offering of sows bred to this great trio which sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal. W. Bernsteins, Proprietor.

**Large Type Poland-Chinas**—The hog for the farmer if he wants to make money. I have the best lot of weanlings that I have ever seen and they are sired by my boar, Long Smooth Jumbo and if he keeps on growing the way he is, his name will soon be too small. H. Christiansen, R. D. 4, Riverside, Cal.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles.

**Big Type Durocs**—Well grown out February and March pigs of either sex in any quantity. We ship only the tops and butcher the culls. F. M. Johnson, Napa, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**PLW Durocs**—Eastern selections made by R. K. Walker in January. Peters, Lamson & Walker, Devore, San Bernardino County.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Shasta County, Cal.

**Berkshires**—Sired by Star Leader, the \$1,500 boar, ready for service. Kounias Registered Stock Farms, Modesto.

**Durocs**—P. & L's Defender by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

### MISCELLANEOUS

**Famous Hairy Peruvian Alfalfa Seed**—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Twelve beautiful volumes of Americana Encyclopedias**—First \$15 takes them brand new. Also one motorcycle tandem \$10. Motorcycle luggage carrier \$2.50. M. Martin, Kerman, Cal.

**Quality Trees**, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

### LIVE STOCK

**Shorthorn Cattle**, Shropshire Sheep, Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Droyer and W. S. Guilford, Owners.

**Registered Percheron Stallion** 7 years old, black, heavy bone, sound, gentle, broken to work anywhere. Price \$350. W. N. Bradbury, Escondido, Cal.

**Registered Shires**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

### WANTED

**Educated Holland born American citizen**, 5 years in U. S. A., age 32, has family, wants to work and have charge of ranch on shares or salary, experienced in dairying, good dairy on shares preferred. Good references. No. 15, care of Cultivator.

**Wanted**—Place as foreman. Advertiser is thorough in all lines of farming, irrigation, fruit growing and the care of livestock. Experienced in working all kinds of labor both tenant and wage system. Address Box E., Cultivator.

**Wanted**—Pure bred Toggenburg does, bred to pure bred Toggenburg buck. Must be registered with A. M. G. R. A. of Dayton, Ohio. J. C. Chadbourne, Suisun, Cal.

**Wanted to Buy cattle**, 70 head two year old steers preferred but will take good grade of stock cattle Durham. P. Herlick, P. O. Judson, Cal.

**Wanted Work on Farm** for experience in western crop raising. Plowing, irrigating. H. DeCou, Gen'l. Del'y., Los Angeles.

**Sow Wanted**—Bred Duroc-Jersey, pure blooded. State very lowest price. Address Pig, Route 1, Box 218, San Diego, Cal.

**Wanted**—To hear from owner of farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

### TURKEYS

**Our Geese and Turkeys Win Again**—Grand Champion Sweepstakes Special, for best pair of birds in show. For size vigor and quick maturity, our stock are best. East or West. Stock and eggs in season, also Collier pups. Correspondence solicited. John G. Mee, St. Helena, Cal.

**Giant Bronze Turkeys and Eggs**—Choice breeding stock. M. M. Reiman, Planada, Cal.

**For Sale**—Mammoth Bronze turkeys. The Best in the West. Geo. A. Smith & Son, Corcoran, Cal.

**For Sale**—Bourbon Red and White Holland Turkeys. E. A. McKinley, Ukiah, Cal. R. D.

### LUMBER

**Lumber—Sash—Doors—Plumbing—Supplies**—Building materials of all kinds. New and second hand. \*A\* R. W. shingles 55 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

**AUTOMOBILE STORAGE BATTERIES**—Titan Batteries for Service, get our prices before buying or having an old battery repaired. Call or write, Olive Street Electrical Co., 910 South Olive St., Los Angeles, Cal.

### POULTRY

**Cary's Champion Cornish** win wherever shown. At Fresno District Fair, 1st on cockerel, hen, pullet, pen; at Modesto, 1st on cock, cockerel, hen, pullet, pen. At State Midwinter Show, Coalinga, 1st on cock, cockerel, hen, pullet, pen. Gold Sweepstakes, best display in English class. Gold specials, champion cock, cockerel, hen, pullet, and pen. Five pens mated for 1918. L. B. Cary, Reedley, Cal. Baby Chicks from Forney's famous heavy laying strain of Single Comb White Leghorns. \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 18. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Poultry Wanted**—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co. 607 E. Third St., Los Angeles, Cal.

**Huddleston Blue Andalusians**, great winning and laying strain. Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**Petaluma Hatchery**—Can ship day old chicks to points reached in three days. Why not have the best. We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

**Buff Orpingtons, Buff Leghorns, Bourbon Red Turkeys**—First prize winners at the best shows for the past four seasons. The Ferris Ranch, S. Reservoir, Pomona, Cal.

**Carneau Squabs**—Be independent and have your own squab dinners. Help Uncle Sam by producing more food. Raise big fat juicy squabs. Full information from Riverside Squabry, Riverside, Cal.

**Am Booking Orders** for chicks from Barred Rocks, R. I. Red and White Leghorn stock for spring delivery. Send for circular. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain). Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Baby Chicks** (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery Schellville, Cal.

**Book Your Orders** for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorcas, and Buff Orpington chicks with the Stevenson Hatchery, Watsonville, Cal.

**Baby Chicks**—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

**"Eastman's Bred - To - Lay"** Hoganized, Trapped, Barred Plymouth Rocks. JANUARY CHICKS. Eggs. Fairmead Poultry Farm, Fairmead, Cal.

**White Wyandotte Eggs** for hatching. \$1.50 per 15; \$6.00 per 100. Flora Cox, Buena Park, Cal.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynier, Lathrop.

**Homer Pigeons**—Best Eastern Stock. Must sacrifice cheap. Frank Nelson, El Monte, Cal.

**For Sale**—A few choice White Orpington cockerels. N. H. Vogt, Vacaville, Cal.

### POULTRY

**Order Now**, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh cut bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

**283-Egg Barron Leghorns**, Wyandottes, Direct from England—200-290 egg utility or prize Leghorns. Wyandottes, Reds, Rocks, Anconas, Orpingtons, Minorcas. THOUSAND CHICKS, EGGS WEEKLY, reduced January, February delivery. Males that transmit heavy laying qualities, reasonable. Hundreds satisfied customers. One cleared \$617 on 110 hens sideline. C. Beeson, Pasadena, Cal.

**Baby Chicks and Eggs**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**White Leghorn Baby Chicks**—We have cut our profit on chicks until there is very little left in order to do our part toward increasing the food supply. There are no better Leghorn chicks than ours at any price. We guarantee satisfaction. Food will win. If you would like to do your share to help lick the Kaiser, raise some chickens. Order from us. We will please you. Lyon Hatchery, Gardena, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Mission Hatchery Chicks**—January-February. R. I. Reds, Barred and White Rocks, Black Minorcas, Anconas, Brown, Buff, White Leghorns. First class utility stock, well mated; hatched right in our large modern plant. 12,000 chicks weekly. Price and quality talk, see our free circular about them. MISSION HATCHERY, Box 17, Campbell, Cal.

**Hatching Eggs** Wanted for spot cash. Barred Rocks, Buff Orpingtons, White Wyandottes, White Minorcas, Brown Leghorns, Anconas, Bronze Turkeys, Duck Eggs will accept all suitable eggs of above varieties each week. Advise how many you can supply and details of your stock in first letter. F. Lehman, 313 S. Los Angeles St., Los Angeles, Cal.

**For Sale**—Wyckoff & Son White Leghorn cockerels for sale \$3.00 and up, & Ancona cockerels \$3.00 and up. A few Wyckoff pullets \$2.00 and \$3.00. Eggs for setting from the following strain, Scranton R. I. Reds, Wyckoff & Son, Anconas, Sheppard, 1 Buff Orpington cock won at local fair first, R. Keyland, East Bakersfield, Cal. Box 47, 431 Quincy St.

**Model Poultry Farm**, White Leghorns Specialists, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Penn's Quality Barred Plymouth Rocks** are correctly bred. Blood lines that produced the WORLD'S FAIR and other noted winners BOTH in Utility and Exhibition classes. Eggs and breeding stock. Catalogue. GOLDEN RULE POULTRY FARM, St. Helena, Cal.

**"Finest Hatchery in the World."** Baby Chicks—White Leghorns, Rhode Island Reds. Settings, 100's, 1000's. Hatched right in our \$60,000 brick and concrete hatchery from our selected heavy layers. Reasonable prices. Stock, Eggs. PEBSIDE POULTRY FARM, Sunnyvale, Cal.

**Baby "Chicks" and Eggs for Hatching** from pure-bred McFarland strain S. C. White Leghorns. Carefully culled and Hoganized for heavy egg production, not simply "CHICKS" but stock as well. Sonoma Valley Hatchery & Poultry Yards, Sonoma, Sonoma Co., Cal. R. D. 2, Box 48, F. J. Hansen, Prop.

**Spring Chicks**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

**Baby Chicks**—We start in January to hatch those sturdy youngsters, like we had last season. We will have lots of them too, but please order early. White, Brown and Buff Leghorns, R. I. Reds, Barred Rocks, and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

**For Sale**—We have a limited number of choice S. R. I. Red cocks and cockerels for sale. Rich dark red surface color and red under color free from smut. Prices very reasonable. Raines Court Poultry Ranch, Elizah, Cal.

**Barred Rock Chicks** \$15 per 100; Rhode Island Reds, \$14 per 100; hatching every week. Can supply most any number. Send for free 66 page catalogue. Pioneer Hatchery, 815 S. Los Angeles Street, Los Angeles.

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Alfalfa Seed—Common variety, Hairy and Smooth Peruvian. Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. El. F. Sanguinetti, Yuma, Arizona.

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Arizona—A few sections Arizona school land for sale, approximately four dollars per acre, long time and easy terms. Water conditions good. Particulars, T. C. Davison, Box 101, Ontario, Cal.

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Sunshine Farm Jerseys—Bulls from officially tested dams for sale. E. E. Greenough, Merced.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, Cal.

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For Sale—My new 20-40 C. L. Best Tractor, No. 464D. Built December, 1917. For particulars address H. F. Mohr, Amador Valley, Alameda County, Cal. Pleasanton P. O.

Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

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IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC., The Yellow Front. Established 1892 112-118 S. Los Angeles St. Los Angeles.

The California Lima Bean Growers' Association has sold about 310 cars, or 70 per cent of its total crop.

Household Department

END OF A HOOVER DAY

I have come to the end of a meatless day, And peacefully lying in bed, My thoughts revert in a musing way To the food which today I've been fed. When I think of the cheese and the beans and fish And oysters I've had to eat, I've no regrets for the "good old days"— I didn't miss the meat!

I have come to the end of a wheatless day, I have eaten no cookies or pie, I have had no bread that was made with wheat; It was made out of corn or rye; And I liked it so well, that when war is past And a glorious victory won, I'll keep on observing "wheatless" day And eat "corn pone" for fun! —Oconto (Wis.) Enterprise.

TRENCH TRAPS

"Surprises" for Our Boys. The Teutons Leave Them in the Trenches When They "Retire." A Writer in Popular Mechanics Describes Some of Them.

WHAT do you think made that wound?" asked an officer who was conducting me through one of the advance hospitals on the Somme, pointing to the badly swollen and lacerated ankle of a soldier that was just being dressed. The puffy and discolored flesh might have come from a severe sprain, but two or three black punctures on either side indicated that the injury was a more aggravated one.

"If there were a tropical river about," I replied finally, "I should hazard a guess that the man had stepped into the mouth of an alligator, or had been nipped by one while swimming. As I have never heard of alligators in the Somme, I fear I shall have to give it up. What did do it?"

"Trench trap," was the laconic reply; "or, to be more exact, a wolf-trap. Ever since the steady pressure of our advance began to tell—since the Boche began to realize that he would have to continue backing up before our attacks—the Germans have been leaving them behind in the trenches, or laid in inviting little runways through the wire entanglements.

"Not many of our men were caught after the first day or two—we have only had two or three cases here—but several scores of traps have been discovered, along with a lot more of diabolically ingenious contrivances designed to hamper our advance or to give us pause in the matter of occupying abandoned dugouts. In fact, the dodging of the trench-traps has added quite a new interest and zest to our latest attacks."

Scientific "trench trappery" is indeed a new development of modern warfare, and, like so many other things, it has taken the methodical and thorough Teuton to bring out its refinements, to make a fine art of it. Ever since the discovery of gunpowder the practice of mining a position about to be abandoned, the mine to be exploded when the advancing enemy came over it, has been resorted to, and that, indeed, was just about as far as it had gone—even in the present war—up to the time that it became apparent that the French and British pressure on the Somme was likely to go on indefinitely and increasingly.

The wolf-traps were only the first of a series of many devilish little devices left behind by the ousted Germans to deliver a last blow at the victorious Tommy or poilu, a sort of modernization of the famous Parthian shot.

Obviously, "trench trappery" is only practicable in the face of a slowly

and steadily advancing movement— obviously, too, since the proverb that a once-burned child is twice shy applies with equal force to the French and British soldier—it must show a progressive development to stand any chance of success, must be constantly varied, constantly carried on in a new way. That the general scheme has been a flat failure in principle due to the fact that the Germans have not been able to vary their devices sufficiently to baffle their wary quarry.

An abomination of creased steel has evidently been manufactured in considerable quantities for no other purpose than to furnish unpleasant surprises to precipitate Tommies. The latter have nicknamed it the "tortoise," and until they learned that, like its slow-moving animal prototype, it was unsafe to take liberties with, several of them paid the penalty of their curiosity by being injured when it blew up as a consequence of their friendly prods of investigation.

In that its very strangeness of appearance invites attention, the tortoise is like the famous Trojan horse, and the consequences of investigation are, likewise, disastrous. The least touch to the wobbly thing established a contact, doubtless through fulminate of mercury, which detonated 20 or 30 pounds of explosive with a force that shattered the thick steel shell—creased as it was like the casing of a hand-grenade—and scattered the fragments over a wide area.

Something of the direction his latest effort has taken was revealed by a Tommy who was exhibiting to me some of the treasures he had gathered in cleaning up a recently occupied German dugout. One of these, carefully preserved between the leaves of a magazine, was the photograph of what was evidently a German girl, punctured with not less than a dozen bullet-holes.

"Did you take it from a German soldier?" I asked.

"No, sir," was the reply, "only from the wall of a dugout."

"But how did she come to get so shot to pieces?" I asked, adding banteringly: "I have never heard that the British soldier makes war on women."

"But this lady was making war on us, sir," he answered with a smile; "or leastways, one of 'er friends three or four dugouts down the line tried to strafe us, and we had orders to strafe back."

Then he went on to explain that the Tommies had always vied with one another in collecting photographs from the walls of the captured dugouts as souvenirs, a circumstance which the Germans, who appeared to have got wind of it in some way, endeavored to take advantage of by running a wire from the back of some of these mural decorations to mines concealed beneath the floor.

The Tommies had already learned to avoid stepping on the loose ends of boards, and to refrain from rocking tortoises and picking up inconsequential odds and ends from the floor; "but the "mined" photograph was something new, and before the ruse was discovered several "cleaning-up" parties were made to pay rather heavily for the desire of certain of their members to add another Fraulein to their picture-galleries.

Photo-collecting languished for some little time after the "designing" nature of some of these abandoned Gretchens and Hildas had been disclosed, and it is still the custom to give any picture with a suspicious bulge behind it—if there is room to do it in safety—a few propitiatory shots before seeking closer acquaintance.



## The Cultivator Patterns



8653—Children's One Piece Dress. Cut in sizes 2, 4, 6, 8 and 10 years. The lower part of the dress is slightly circular and it is stitched to the yoke. The sleeves may be long or short.

8647—Ladies' One Piece Camisole. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The lower part of the camisole is gathered to the band, and the bottom may be gathered to a straight band of the material.

8645—Ladies' Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The waist fits the figure closely, and the two-gored skirt is cut wider at the top than at the bottom.

8444—Ladies' One Piece House Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. This one piece house dress is gathered to the yoke at the front and has a plain back; the dress is belted in at the waistline.

8664—Children's Raglan Coat. Cut in sizes 1, 2, 4, 6 and 8 years. The lower part of the coat is cut quite circular; a small shoulder cape which buttons on the left side is included in the pattern.

8656—Ladies' Two Gored Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The back gore is gathered at the slightly raised waistline, and the front gore is almost straight.

7040—Ladies' Waist. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The waist has a kimono foundation, and a sleeveless over-blouse.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.  
HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

Pattern Department  
California Cultivator  
Los Angeles

## War Bread Recipes

Compiled by the University of Illinois "in the hope that it may be helpful in lessening the use of wheat."



**B**READ is made from flour of wheat or other cereals by the addition of water, salt, and a ferment. Wheat flour is best adapted for bread making, as it contains gluten in the right proportion to make a spongy loaf. Gluten, the protein of the wheat, is a gray, tough elastic substance, insoluble in water. Gluten, being elastic, is expanded by the gas developed in bread dough by fermentation, thereby causing the bread to rise. Flour should always be sifted before measuring.

Yeast is a microscopic plant of fungus growth, and is one of the lowest forms of vegetable life. The yeast plant reproduces by a process known as budding, multiplying very rapidly. Like other plants, favorable conditions for its growth are (1) food, (sugar); (2) warmth, (25 degrees to 35 degrees C. or 70 degrees to 90 degrees F.); (3) moisture. Fermentation, the production of alcohol and carbon dioxide, is the result of the growth of the yeast plant. The yeast plant is killed at a temperature of 100 degrees C. or 212 degrees F. Liquid, dry, or compressed yeast may be used for raising bread. Good bread depends primarily upon good yeast. Fermented bread is made by mixing flour to a dough with water or milk, salt, and a ferment. The dough should be thoroughly kneaded to mix the ingredients and should be allowed to rise in a favorable temperature until it has doubled its bulk. It is then ready to be shaped into loaves. When it has doubled its bulk again, it is ready to be baked.

Bread is baked (1) to kill the ferment, (2) to render the starch digestible by cooking, (3) to drive off alcohol and carbon dioxide, (4) to develop flavor. The loaf should continue rising for the first 15 minutes while baking, and continue browning for the next 20 minutes. The heat may then be reduced and the baking finished in 15 minutes.

Rolls require more heat than bread. They should continue rising for the first five minutes and begin to brown in eight minutes.

### Yeast

Yeast Foam is used in this demonstration. For yeast mixture when Magic Yeast or Yeast Foam is used:

Two cups water, one cake dry yeast, two tablespoons sugar, two tablespoons flour, one-half boiled mashed potatoes, one-quarter teaspoon salt.

Soak yeast in one cup of water. Mix dry ingredients, add potatoes and the other cup of water. Add soaked yeast, beating it thoroughly. Let rise over night. The yeast will be ready for use in the morning.

### Wheat Bread

Three tablespoons lard, two table-

spoons sugar, one cake dry yeast prepared according to directions, one cup lukewarm (scalded) milk, one teaspoon salt.

Mix ingredients, adding yeast mixture last. Beat together thoroughly and add flour, beating with spoon or egg beater. Add flour and knead until a firm, elastic dough is obtained. Let rise until the mass has doubled its bulk. Shape into loaves. Let rise again until the loaves have doubled their bulk. Bake according to preceding directions.

### Parker House Rolls

For Parker House Rolls add an unbeaten egg, two tablespoons sugar and two tablespoons butter at first mixing. Let the mass rise until it has doubled its bulk. Roll out on floured board, mould into shape, and let rise again until slightly increased in bulk. Spread melted butter over half of each bread roll, fold over, pressing the edges together. Place on buttered pan, one inch apart, and let rise. Bake from 12 to 15 minutes in hot oven.

### Salad or Dinner Rolls

Use the same ingredients as for Parker House Rolls, adding four tablespoons of butter to the first mass of dough. Shape as for Parker House Rolls, crescents, bow knots, clover leaf, braids, twists, sticks or other fancy shapes.

### Swedish Rolls

Use the recipe for Salad Rolls, roll to one-fourth inch in thickness, let rise 15 minutes, spread with butter, sprinkle with two tablespoons sugar mixed with one-third teaspoon cinnamon, one-third cup chopped, stoned raisins, and two tablespoons chopped citron; roll like a jelly roll and cut into three-fourths inch pieces. Again let rise. When taken from oven, brush over with white of egg slightly diluted with water; return to oven to perfect the glaze.

### Bread, Using One-third Stale Bread Crumbs

Use proportions as for Wheat Bread recipe given above, working into the batter one cup of stale bread crumbs. The absorbent quality of the crumbs permits the use of less flour than in other dough mixtures.

### Bread, Using One-third Corn Meal

One cup boiling water, one-half cup lukewarm scalded milk, two tablespoons lard, two and one-third cups corn meal, two tablespoons sugar, two tablespoons salt, one cake dry yeast prepared according to directions.

Add the boiling water to the corn meal, cook in a double boiler for a few minutes, and proceed in the manner given in directions for bread.

Three cups of liquid of the recipe requires about seven cups of flour, varying slightly according to the quality of the flour and meal.

## Housewives' Handy List of Substitutes



OUR European Allies will need more food from America during the coming year than in 1917. As the weeks go by America will be called upon

more and more to share her supplies with France, England, Italy and Belgium, whose civilian populations and armies depend for nourishment to a large extent on the food saved in the American household. This surplus can be created only through decreased

consumption of meats, sugar, fats and wheat products and substitution thereof of foods which cannot be shipped so well.

In the rush of preparing meals the housewife finds it difficult sometimes to think of the substitutes needed. Herewith is a small, comprehensive list prepared by the food administration and designed to hang in the kitchen cabinet or on the wall to be used for ready reference.

### MEAT SUBSTITUTES

Poultry, Bean loaf.  
Rabbit, Nut loaf.  
Fish, Bean soup.  
Eggs, Milk soup.  
Cheese dishes, Chowders.  
Baked beans, Milk.

### WHEAT BREAD SUBSTITUTES

Corn bread, Potato biscuit.  
Brown bread, Rye bread  
Oatcakes, Potatoes.  
Buckwheat cakes, Rice.  
Hominy, Graham bread.

### DIRECTIONS FOR FOOD PRESERVATION

Prof. W. V. Cruess of the state university is sending out a list of publications by our state university at Berkeley, and by the department of agriculture at Washington, District of Columbia, which may be had free on application.

Write College of Agriculture, University of California, Berkeley, for any of the following publications: Circular 158, Home and Farm Canning; Circular 108, Grape Juice; Circular 146, Jellies and Marmalades from Citrus Fruits; Leaflet, Salting of Vegetables; Leaflet, Canning Fruits Without Sugar; Leaflet, Fruit Juices; Leaflet, Jelly Stocks; Leaflet, Drying Winter Vegetables; Leaflet, Canning Fruits in Jars or Wax-Top Cans; Leaflet, Canning of Fruit and Vegetables; Leaflet, Preservation of Fresh Eggs; Leaflet, Canning Vegetables in Jars and Wax-Top Cans.

Also write the United States Department of Agriculture, Washington, D. C., for Farmers' Bulletins 841, The Drying of Fruits and Vegetables in the Home; Canning By the One-Day Method, and also 175, 203, 426, 293, 359 and 521.

### MEATLESS MENU

#### BREAKFAST

Rolled Oats  
Omelet  
Corn Muffins  
Coffee

#### LUNCH

Combination Salad  
Sea Food in Rice Border  
Stewed Pears  
Coffee

#### DINNER

Vegetable Soup  
Baked Fillet Sole with Spinach  
Au Gratin Potatoes  
Mixed Green Salad  
Raisin Pudding  
Tea

### FOUR SUGGESTED SCHOOL LUNCHES

(1) One chicken sandwich, one jam sandwich, one apple, one glass of milk, one small piece of cake (two graham or plain crackers and two apples for recesses). (2) Ham sandwich, fudge sandwich, apple sauce, one glass of lemonade. (3) Brown bread and butter sandwich, cottage cheese sandwich, celery, one orange, nut and raisin cookies. (4) Minced ham sandwich, lettuce sandwich, or graham bread and butter sandwich with celery, baked custard, two apples.

### FRIED GREEN PEPPERS.

Fried green peppers make an appetizing accompaniment to steak, chops or cold meat. Take out the seeds, put the peppers in cold water for fifteen minutes, wipe them, sprinkle with salt, dip in flour and fry in hot dripping till soft and slightly browned. Lay them on the dish around the meat and serve with it.

### GOOD ENOUGH FOR HIM

"Are you in favor of abolishing capital punishment?"  
"No, siree! If it was good enough for my forefathers, it's good enough for me."



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## Stretching the Meat

Another Hint for the Game of Making a Little Go a Long Way

**I**T is possible to make a little meat go a long way. Meat pies and meat stews offer a variation for every day in the month. In these combinations a small piece of meat can be stretched to flavor a big dish. Try these hot savory dishes, the whole family will like them.

**Fish Chowder**

Rabbit, fowl, or any meat may be used instead of the fish, or tomatoes instead of milk. Carrots may be omitted.

One and one-half pounds fish (fresh, salt, or canned), nine potatoes peeled and cut in small pieces, one onion, two cups carrots cut in pieces, three cups milk, pepper, three tablespoons flour, one tablespoon fat.

Fry chopped onion in fat for five minutes. Put fat, onions, carrots and potatoes in kettle and cover with boiling water. Cook until vegetables are tender. Mix flour with one-half cup cold milk and stir in liquid in pot to thicken. Add the rest of the milk and the fish which has been removed from the bone and cut in small pieces. Cook until the fish is tender, about ten minutes. Serve hot.

**Tamale Pie**

Two cups cornmeal, two and one-half teaspoons salt, six cups boiling water, one onion, one tablespoon fat, one pound Hamburg steak, two cups

tomatoes, one-half teaspoon cayenne pepper, or one small chopped sweet pepper.

Make a mush by stirring the cornmeal and one and one-half teaspoons salt into boiling water. Cook in a double boiler or over water for 45 minutes. Brown the onion in fat, add the Hamburg steak and stir until the red color disappears. Add the tomato, pepper and one teaspoon salt. Grease a baking-dish, put in a layer of cornmeal mush, add the seasoned meat, and cover with mush. Bake 30 minutes.

**Potted Hominy and Beef**

Five cups cooked hominy, four potatoes, two cups carrots, one teaspoon salt, one-fourth pound dried beef, two cups milk, two tablespoons fat, two tablespoons flour.

Melt the fat, stir in the flour, add the cold milk, and mix well. Cook until it thickens. Cut the potatoes and carrots in dice, mix all the materials in a baking dish, and bake for one hour.

**Shepherd's Pie**

Two cups cooked meat, one cup stock, one tablespoon fat, one tablespoon flour, one-fourth teaspoon salt, pepper, two cups mashed potatoes.

Put diced meat into a baking dish. Add brown sauce made of fat, flour, seasonings and stock. Cover top with mashed potatoes, brush with fat and brown in oven.

## Lighting Systems Are Worth While

Good Lights Mean Health and Happiness

**T**O neglect providing a suitable lighting system for the home is often a great mistake. The man who will not spend money for this purpose will likely have to spend more in correcting his children's eyes. Near-sightedness in school children is a very common defect which increases with age. It is due principally to poor school room lighting and to poor lights in the home. When a child reads by a poor light there is a tendency to hold the book near the eyes, and near-sightedness is the result. Some states are passing laws correcting this defect in school buildings, and the lighting, both from windows and artificial lights, must come up to requirement. When so much money is being spent for all kinds of farm machinery, better livestock, good seed and other improvements, conditions in the home should not be forgotten. Every farmer should put in a good lighting system along with the other modern conveniences for the welfare and happiness of the whole family.

**Selection of Lighting Systems**

A modern lighting system should not be selected on the basis of economy. It costs money to be comfortable and happy, and a thoroughly efficient lighting system will bring many joys into the home. One man who owns a modern lighting system says he would not recommend it to his neighbors because it costs more than kerosene. Another says it takes too much time to keep it operating. Such statements are ridiculous. People might just as well get along without kerosene and live as men of 100 years ago—it would probably be cheaper. The man who claims it takes too much time to operate a modern lighting system does not realize how much

time is spent by his wife in caring for the coaloil lamps.

**Points to Be Remembered**

Get a plant that is rated safe by the National Board of Fire Underwriters.

Get a plant that you thoroughly understand.

Get a plant with capacity for overload.

Get a plant which requires the least amount of time to keep in order.

Get a plant which will not cost too much.

**Lighting Points**

There are a few don'ts which should be kept in mind by everyone interested in proper illumination.

Don't judge illumination by the brightness of lamps. Judge it by the way it helps you to see. A room with dark walls needs more light than rooms with white or light colored walls.

Don't use a flickering light. It will cause eye strain and headache.

Don't use a dazzling or glaring light. The eyes cannot adjust themselves to it.

Don't face the light while reading. The light should come from above and over the left shoulder. Don't have local illumination where general is needed or general where local is needed.

Many of these don'ts can be best remedied by using the proper kind of shades and fixtures and having them properly located.

**LACKED QUALIFICATIONS**

A man recently wrote an agricultural paper saying he had no money or experience, but that he wanted to get on a farm. The editor wrote him to try going through a gate or under a fence.

## BIG SEED COMPANY IS DISTRIBUTING NEW CATALOG

**Aggeler & Musser Seed Company of Los Angeles, Issue 25th Annual Book**

One of the largest seed houses in the West, the Aggeler & Musser Seed Company, Ninth and Alameda streets, Los Angeles, are about to give their handsome 1918 catalog broadcast distribution. It being the 25th annual book issued by the Company, and it is claimed to be one of the most complete and valuable books of its kind ever published by a Western seed house.

Among the many new features are departments on Home Garden Work, School Garden Work, Demonstration Garden Work and Field Garden Work. In reality, this year's edition combines several catalogs in one, for it also includes "Garden Manual," and surpasses all previous editions. It contains answers to more than 1000 questions and gives invaluable information regarding all varieties of plants listed and is fully illustrated.

Not only does it tell all about seeds, but gives full information concerning the correct tools and implements agriculturists should use to obtain the best results. There are also marketing notes on each subject, telling how and where to market. Most useful hints are also given on poultry, spraying, fertilizing and the use of insecticides.

The Aggeler & Musser Seed Company will send this descriptive, illustrated and interesting catalog free and post prepaid to anyone writing requesting it.

Every ball of the YUBA TREAD kept at work at food production helps as much as a hundred balls flung into German trenches.

Write for the Catalog

### Yuba Manufacturing Co.

Dept. B17

433 California St.

San Francisco

## "THE BOSS" TREE PROTECTOR

Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices	Per 1000
10 in. long, 7 in. wide	\$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

**Yucca Manufacturing Co.**  
1380 Willow Street, Los Angeles, Cal.

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**BOUGHT and SOLD**

**BUTTRISS & McCLELLAN**

205-7 N. Los Angeles St. A-5473 Bdy. 8098

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.



## Los Angeles Market

Los Angeles, Jan. 16, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 3 c higher.  
California extra creamery.....52  
Dairy Exch. prices past week:  
Jan. 9 10 11 12 14 15  
'18 ... 50 50 51 51 51 52  
Rets. wk. ending Jan. 15, 294,200 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....28½  
Tillamook Trip .....26@26½  
Domestic Swiss .....33

## EGGS

Exchange quotations. Prices include cases and fillers valued at 35c. Prices to retailers 4 cents above Exchange.  
Fresh extra .....58  
Pullet .....54  
Case Count .....54  
Dairy Exch. prices past week:  
Jan. 9 10 11 12 14 15  
'18 ... 53 54 54 55 58 58  
Rets. wk. ending Jan. 15, 1305 cases.

## POULTRY

We quote to producers:  
Broilers .....24  
Fryers .....27  
Hens—Leghorns .....23@24  
Roasters, 3 lbs. and up .....26  
Ducks, lb. ....20@23  
Roosters, old .....14  
Turkeys .....26@29  
Geese, lb. ....19

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning January 16, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000 to 1100 lbs. 8.50@9.00  
Heifers, good .....6.00@6.50  
Cows, good .....5.50@6.00  
Canners .....4.50@5.00  
Hogs—  
Av. 125 lbs. ....14.50  
Av. 150 lbs. ....15.00  
Av. 175-200 lbs. ....15.50  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent. ....9.50@10.00  
Ewes .....9.00@9.50  
Lambs .....14.00@14.50  
Yearlings .....10.50@11.00

## POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....2.15@2.25  
Russets .....2.10  
Sweet, sk. ....4.00@4.25

## ONIONS

Wholesale selling price:  
Brown .....2.50  
White .....2.60  
Garlic .....7

## VEGETABLES

Wholesale prices:  
Artichokes, doz. ....1.25@1.35  
Beans—Wax .....17  
Limas, lb. ....16  
Ky. Wonder .....16@17  
Beets, sk. ....1.50  
Brussels Sprouts, lb. ....12@14  
Cabbage, lb., 2½; sk. ....1.50  
Red, lb. ....4½  
Carrots, doz. ....30  
Cauliflower, doz. ....85  
Celery, cr. ....3.50@3.75  
Cucumbers—Hothouse, doz. ....1.50@1.75  
Egg Plant, lb. ....12  
Horseradish, lb. ....15  
Lettuce, doz. ....30  
Leeks .....30  
Mint .....40  
Onions, green, doz. ....25  
Okra, lb. ....13@14  
Peas, lb., Telephone .....10@12  
Peppers, Chili, lb., 12; Bell .....14@15  
Parsnips, doz. ....40  
Parsley, doz. ....20  
Pumpkins, lb. ....2  
Radish, doz. ....20  
Rhubarb—Strawberry .....1.25@1.35  
Romaine, doz. ....40  
Spinach, doz. ....25  
Squash—Crockneck .....70@75  
Hubbard, lb. ....2  
Tomatoes, cr. ....1.25  
Turnips, doz. ....35

## FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.50@1.60  
Greenings .....1.75  
Jonathan .....1.80@2.25  
King David .....1.75@2.00  
W. W. Pearmain .....1.35@1.50  
Spitzenburg .....2.25@2.75  
Y. Newton .....1.35@1.50  
Avocados, doz. ....6.00@9.00  
Bananas, lb. ....5½@5½  
Pears, Winter Nellis .....2.00@2.75  
Persimmons, lb. ....7@10  
Pomegranates, ½ bx .....1.80@2.00

## CITRUS

Lemons, 4.25@5.25; Juice .....3.00  
Grapefruit .....3.00  
Limes, basket .....1.00  
Oranges—Navel, bx. ....4.50@5.00

## DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
(25-lb. bx., faced, 50s, ½ c less.)  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 18; extra ch., 18½; ly. 19; pears, 12½; peaches, ch., 12; ly. 12½; peeled, 15; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 16½; 30-40s, 12½; 40-50s, 11; 50-60s, 10; 60-70s, 9½; 70-80s, 9; 90-100s, 8.  
Figs—Bulk, 25 lb. bx., blk. \$2.75, wh. \$2.75; Calmyrna, 10 lb. bx., \$2.25.

## NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....24  
N. P. U. ....23  
Hickory Nuts, lb. ....10  
Peanuts, raw .....15  
Pecans, lb. ....19  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20

No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....21  
Prices delivered in East 1½ c higher.

## HONEY

Prices of wholesaler to retailer:  
Extra White, lb. ....12@14  
W. W. lb. ....13@15  
Comb, case, W. ....4.00@4.50  
W. W. case .....4.80@5.00

## RICE

Wholesale quotations:  
Cal. ....7.50  
Broken .....5.60@6.00

## BEANS

These are prices made by wholesaler to retailer.  
Lady Washington .....13.00@13.50  
Limas .....13.00@13.50  
Pinks .....8.50  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small White .....13.00@13.50  
Blackeyes .....10.00  
Tepary .....9.00@10.00  
Lentils .....25.00

## HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oats .....28.00@30.00  
Volunteer Oat .....18.00@20.00  
Wheat .....25.00@28.00  
Barley .....27.00@30.00  
Alfalfa .....25.00@29.00  
The Alfalfa Growers Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

## GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal .....1.95  
Alfalfa Molasses .....2.00  
Barley, Rolled .....3.20  
Barley, Recleaned, Whole .....3.25  
Barley, Hulled .....3.30  
Beet Pulp .....2.00  
Bran, Heavy .....2.25  
Cocoanut Meal .....2.50  
Cottonseed Meal .....3.40  
Corn, Yellow .....4.45  
Corn, White .....4.55  
Corn, Cracked .....4.50  
Corn, Feed Meal .....4.55  
Corn, Egyptian .....3.60  
Middlings .....3.25  
Milo .....3.15  
Oat Chop .....1.90  
Oats, White .....3.30  
Oats, Rolled White .....3.35  
Oats, Hulled .....4.75  
Oats, Rolled Chicken Groats .....4.85  
Ollcake Meal .....3.65  
Wheat, No. 1 .....4.00@4.05  
Wheat, Cracked, No. 1 .....4.40  
Red Millet .....4.65@4.75  
Rye .....4.00  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Charcoal, 50-lb. sk. ....3.00  
Clam Shell .....70@80  
Grit, Granite .....75@85  
Oyster Shell .....1.45  
Sunflower Seed .....5.25  
Soya Bean Meal .....3.60  
Scratch Feed .....3.80@3.90  
Gritless .....3.90@4.00  
Rice Bran, ton .....40.00  
Middlings, ton .....45.00  
Rice Polish, ton .....49.00

## San Francisco Markets

San Francisco, Jan. 15, 1918.

## BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapped, ½ c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½ c to 2½ c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Fresh extras .....51  
Prime firsts .....50  
Dairy Exch. quotations past week and year ago:  
Jan. 8 9 10 11 12 14  
'18 ... 50½ 51 51 51½ 51½ 53½  
'17 ... 36 36 35 35½ 36 ..  
Rets. wk. ending Jan. 14, 691,400 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal Flats, 25½; Y. Am. ....26@27½  
Ore. Young Am. ....26  
Jack cheese, full cream .....26@27  
Half skim .....14@17

## EGGS

Extra .....65½  
Selected Pullets .....62  
Dairy Exch. quotations past week and year ago:  
Jan. 8 9 10 11 12 14  
'18 ... 62 63 63 64 67 65½  
'17 ... 39½ 40 40 40 43 ..  
Rets. wk. ending Jan. 14, 8127 cases.

## POULTRY

We quote from producers, lb.:  
Hens, large, 30@31; Leghorns .....29@30  
Small Colored .....29@30  
Broilers, 1-1½ lbs., 45; 1½-2, 35@38, 2-3, 28-34.  
Roosters .....28@29  
Squabs, doz. ....4.00@5.00  
Ducks .....17@24  
Geese .....19@22  
Belgian Hares, live, lb. ....20@22  
Turkeys, dr. ....32@35

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾ c more.  
Steers, lb. 8½@10; undesirable, 6@8; cows and heifers, 7@8½; undesirable, 4@6; calves 7@9½.

Hogs—Hard grain-fed, weighing 100 to 140 lbs., 14½; 140 to 175 lbs., 15; 175 to 300 lbs., 15½.  
Sheep—Wethers, 9½@10½; lambs, 12½@16.

## POTATOES

Wholesale selling prices at wharf:  
River ctl. ....1.25@1.65  
Sweets, cwt. ....3.90@4.00

## ONIONS

Wholesale selling price on wharf:  
Australian Brown, cwt. ....1.90@2.00  
Bermudas .....2.75@3.00  
Garlic, lb., new .....4@5

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. ....40@75  
Beets, sk. ....1.25@1.50  
Beans, string, lb. ....10@15  
Brussel Sprouts, lb. ....5@6  
Carrots, sk. ....90@1.00  
Celery, cr. ....1.50@2.50  
Cucumbers, Hothouse, bx. ....2.00@2.50  
Egg Plant, lb. ....8@10  
Lettuce, cr. ....75@1.50  
Peas, lb. ....5@12½  
Parsnips, sk. ....1.00@1.25  
Peppers, Bell, lb., 6@12½; Chili .....4@6  
Pumpkins, sk. ....85@1.00  
Rhubarb, bx. ....1.25@1.50  
Squash—Marrowfat, sk. ....75@85  
Cream, lug. ....85@1.00  
Hubbard, sk. ....1.00@1.15  
Tomatoes, lug, 75@1.25; Mex. ....2.25@2.50  
Turnip, sk. ....90@1.00

## FRESH FRUITS

Strawberries, ch. ....11.00  
Pears—Winter Nellis bx., 2.00@2.50; winter pears, 1.00@1.50.  
Apples—Spitzenburg, 1.75@2.75; Red 1.10@1.50; Newton Pippins, 1.50@2.25; Jonathan, 1.60@1.90.  
Avocado, doz. ....1.00@3.50  
Citrus Fruits—Lemons, bx. fy., 4.50@6.50; ch., 3.50@5.00; lemons, 1.25@2.50; grapefruit, 2.50@3.00; ch., 2.00@2.50. Tular seedless limes, half orange bx., 1.00@1.50. Oranges: Bx., Navel, ch. to fy., 3.00@5.00; mandarin oranges, half orange bx., 2.00@3.00; tangerines, half bx., 2.00@3.00.  
Pomegranates—One-half orange bx., 1.75@2.00.  
Persimmons—Bx.: 1.25@1.50.  
Pineapples, doz., 5.00@6.00.

## DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, lb. standard, 9½; choice, 9½; extra choice, 10; fancy, 11.  
Figs—In 50-pound boxes, per pound.  
White Adriatic, standard, 8½; choice, 9½; extra choice, 10½; fancy, 11½; Calmyrna, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 18½; ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—60s to 90s, 6½ basis; 50s to 60s, ½ c premium; 40s to 50s, 1½ c premium.  
Apples—In 50-pound boxes, lb.: Fancy 15½; ex. ch., 14½; ch., 14½.  
Pears—Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cases: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-oz. 45 to cs. \$5.25; ch. 16-oz. cartons, \$3.00 for 36s; do, 12-oz. cartons, 45 to cs. \$3.10. In bulk: Sun Maid, \$1.75; fy., \$1.90; ch., \$1.75.  
Sulphur-bleached Thompsons, extra fy., \$5.37½; fy., \$5.12½; ch., \$4.87½; soda-bleached, \$4.75.  
Loose: One-crown, \$4.15; 2-crown, \$3.40; 3-crown, \$3.65; 4-crown, \$3.20.

## NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. X. L., 19½; Ne Plus, 18½; Drakes, 16; hard shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts .....11@12½  
Pecans, lb. ....19@20  
Pine Nuts .....19@20

## HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15@18.

## BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....12.60@12.75  
Bayous .....8.50@8.75  
Small Whites .....12.00@12.25  
Mexican Reds .....8.50@8.75  
Large Whites .....11.25@11.50  
Pinks .....7.25@7.40  
Blackeyes .....8.00@8.25  
Red Kidney .....18.00  
Cranberry .....11.75@12.00

## HOPS

Per lb.: California crop of 1917, 28@33; on contracts, spot, 1916 crop, 18@22; old, 8@15.

## RICE

California rice, new crop, cleaned, 100 pound head rice, 6.45@6.65; brewers, 5.10; screenings, 5.37½.  
Rough rice, 100 lbs., 3.50@3.60 to growers at shipping points.

## HAY

Under date of January 12, Scott, Magner & Miller says:

Receipts past week, 1432 tons. As has been the case for some time past a large proportion of these arrivals have been for government use. The local market has been very dull during the week with little interest shown.

The food administration has been thoroughly investigating the feed situation. This has brought about definite changes. New business in barley has been entirely suspended, the effect of which has resulted in lowering the price. The price of bran, middlings, shorts and mixed feed have also, through government suggestion, been lowered about \$4.00 per ton. The department is now looking into the hay situation throughout the state. A thorough survey is being made with the idea of ascertaining quantities and conditions in the various districts of the state. The department is also endeavoring to relieve the starving

cattle situation in some of our sections. The dry weather has given the alfalfa market a firm tone.

A small amount of rice straw arrived during the week but practically none of any other variety.

Fancy Wheat Hay (light 5 wire bale) .....29.00@30.00  
No. 1 Wheat or Wheat and Oat Hay .....26.00@28.00  
No. 2 Wheat or Wheat and Oat Hay .....23.00@25.00  
Choice Tame Oat Hay .....27.00@27.50  
Other Tame Oat Hay .....23.00@25.00  
Wild Oat Hay .....23.00@25.00  
Barley Hay .....24.00@25.00  
Alfalfa .....24.00@27.00  
Stock Hay .....20.00@22.00  
No. 1 Barley Straw .....60@90

## GRAIN

Grain Exchange prices, ctl.  
Corn, Cal. Yellow, cwt. ....3.30@3.40  
W. Egyptian, 3.20@3.25; Brown 3.05@3.10  
Barley, Feed & Brewing, cwt. 2.85@2.87½  
Milo .....3.05@3.20  
Oats, Red Seed .....3.00@3.25  
Feed .....2.77½@2.85  
New Black .....3.40@3.60  
Wheat—Government prices: Common white hard, base price is \$3.50 per cental, or \$2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft wheat, base price 2 cents per bushel less, or \$2.08 per bushel; white club (including Sonora), \$2.06 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, 8 cents per bushel reduction; if 56 to 58 pounds, 6 cents per bushel less; if less than 56 pounds, grain becomes sample grade and sells on its merits up to within 1 cent per bushel of 56-lb. wheat. Sacked wheat 4 cents per bushel more, less tare for weight of sacks.

## FEEDSTUFFS

Wholesale prices per ton. Prices fixed by food administration as San Francisco price; Sacramento and Stockton \$1.00 less on carlots at mill door:  
Bran .....34.00@35.00  
Middlings .....41.50@42.50  
Mixed Feed .....37.00@38.00  
Shorts .....35.00@36.00

## SEEDS

Prices in round lots, lb.:  
Millet, recleaned .....4½@5  
Alfalfa .....20@21  
Flax .....6@6½  
Rape .....2½@3

## Citrus Fruit Market

Los Angeles, January 16, 1918.

The market is finding such a limited supply of Navel's that keen bidding is resulting in long prices in all auctions. All markets so far as weather permits pick up instantly every car. Many sales are made around \$4.50 f. o. b. California basis.

No heavy shipments of lemons. Prices firm.

## Shipments

Shipments of citrus fruits from California since November 1, 1917. Southern California oranges, 2500, lemons 605, total 3105; to same date last season, oranges 3749, lemons 930, total 4679. Central California, oranges 1812, lemons 87, total 1899. Same date last season, oranges 3773, lemons 123, total 3901. Northern California oranges 199, to same date last season, 338.

## AT THE AUCTIONS

January 9  
New York: 3 Nav. 1 Lem. Nav. \$4.65-\$5.75. Lem. \$5.15-\$6.15.  
Pittsburg: 1 Lem. \$2.65-\$3.50.  
Cleveland: 3 cars. Oranges lower, Nav. \$4.10-\$5.05. Lem. \$4.00-\$4.50.  
Boston: 2 Nav. 1 Lem. Nav. \$1.48-\$4.70. Lem. \$6.50.  
St. Louis: 1 Nav. 1 Lem. Nav. \$1.50. Lem. \$4.10-\$4.85.

January 10  
New York: Market demanding small sizes. Nav. \$3.55-\$5.30, Val. \$5.05-\$5.65. Lem. \$2.35-\$6.30.  
Boston: 2 Nav. 2 Lem. Nav. \$2.35-\$5.35. Lem. \$5.80-\$6.95.

January 11  
New York: 3 Nav. \$3.30-\$4.65.  
Boston: 2 Nav. 1 Lem. Nav. \$2.25-\$5.25. Lem. \$6.10.  
Pittsburg: 1 Nav. \$3.20-\$4.60.

January 14  
New York: 3 Nav. 1 Lem. Nav. \$2.75-\$6.25. Lem. \$6.75.  
Boston: 8 cars. Nav. \$2.35-\$5.05, Val. \$1.95-\$2.75. Lem. \$3.45-\$5.85.  
St. Louis: 2 cars. Val. \$3.10-\$3.40.  
Pittsburg: 1 Val. 1 Nav. Val. \$3.65. Nav. \$3.20-\$3.30. Lem. \$4.35-\$6.55.

January 15  
New York: 2 Nav. \$3.20-\$4.60.  
Boston: 5 cars. Nav. \$2.10-\$4.55. Lem. \$3.85-\$5.60.  
Philadelphia: 1 Lem. \$3.10-\$5.85.

## MARKET NOTES

Values on box apples, which were shaded for a time, are being recovered, and when the stock frozen in transit is disposed of it is thought satisfactory prices will return.

Potato prices are trending upward and the new "per cwt." plan is being satisfactorily received by Eastern trade which has always had to do with "per bushel." Southern California truck crops are being visited by aphids as never before, and cabbage and cauliflower in the Fullerton and Compton district are having a most serious problem. The aphid and dry weather combined are creating a bad condition. Central California reports its Brussels sprouts crops as aphid infested.

With Florida's shortage of citrus fruits coming at the same time as California shortage, the golden fruit is easily turned into gold.



New York is the largest single factor in Eastern apple production. Crops this year were exceedingly light, in fact the decrease was 65 per cent, or 4,550,000 barrels, less than the production of 1916. Middle Western states report slight increase, while Washington and Oregon harvested by far their largest production. Expressed in bushels, the United States produced in 1917, 174,608,000, while its 1916 production was 204,000,000 bushels.

To aid in securing cars more quickly, the railways will after January 21, make big advances in demurrage charges. There will be two days free time; thereafter \$3.00, \$4.00, in fact, one dollar per day increase until \$10. per day is reached. This will be serious for citrus shippers who have found profit in holding fruit at times until purchaser could be secured.

The food administration has served notice positively forbidding the rejection of perishable fruits and vegetables unless absolutely unfit for human consumption. "Each person handling foods must conserve to the fullest."

The Eastern blizzard has caused heavy advance in eggs and California poultrymen anticipate a market condition never before offered.

Post card reports to the Los Angeles office of the bureau of markets of the United States department of agriculture show shipments from California during week ending January 14, approximately as follows: Apples, 3 cars; artichokes, 2; cauliflower, 56; celery, 185; cabbage, 25; carrots, 1; dried fruit, mixed, 104; dried figs, 5; lettuce, 45; mixed fruit, 3; mixed vegetables, 67; onions, 21; potatoes, 81; raisins, 102; sweet potatoes, 6.

America's exports in dyestuffs aggregated last year, \$12,500,000. Before the war this country imported \$10,000,000 worth, principally from Germany.

The food administration is publishing posters and sending out publicity material boosting for greater potato consumption. This will have material influence on sustaining prices.

1917 almond crop was the greatest ever for California. It will aggregate at least 3800 tons.

California's output of honey in 1917 was 8,100,000 pounds; nearly all this extracted. This was the state's smallest year since 1913.

Canneries of California put up 8,300,000 cases of fruits in 1917; of vegetables 4,750,000 cases; this does not include tomatoes which aggregated about 2,000,000. 308,000 pounds of butter received from Australia last week.

One car California eggs frozen in transit to New York.

#### TRUCK CROPS

##### Southern California

The celery crop has been affected by the drought and winds in the quality, weight, color, and shipping endurance of the product. Fifty cars are ready for shipment next week, 500 cars being the total not yet shipped.

Field inspection of cabbage has confirmed the last week's report of condition. The supply of marketable cabbage is insufficient to meet the shipping demand.

Cauliflower is running about 25 per cent culls.

Coachella Valley onions are growing well and are about three weeks earlier than last year.

The first shipment of peas from Imperial Valley went out the past week. The early crop is practically a total loss. Vines were not injured but shipments were delayed in starting about two weeks.

Imperial tomatoes were also slightly damaged.

Imperial lettuce was not injured.

Condition of truck crops: Cabbage 78, carrots 89, cauliflower 68, celery 78, tomatoes 82, lettuce 80, onions 88, peas 76, spinach 88, strawberries 88, turnips 83.

##### Central California

The principal crop moving from Central California is celery. About 25 cars per day going out. Frost on the eleventh showed marked effect on stock. Earlier damage has been confined largely to the stem tops, but some stock is reported poorly hearted. About 800 cars still to be shipped.

Condition of truck crops: Artichokes 84, brussel sprouts 55, broccoli 66, cabbage 82, celery 82, peas 83, spinach 88, strawberries 87.

##### Salt River Valley, Arizona

300 acres of lettuce started shipping with the first car Jan. 10. Probable production 125 cars. Condition of crop 90.—E. G. Risser, Assistant Truck Crop Specialist.

#### ACTIVITIES IN CONTRA COSTA

Carl Nichols, farm adviser of Contra Costa County writes that "The farmers are enthusiastic concerning the possibilities for good work with our arm bureau organization, and we are hoping for great things. We have already started a campaign against the round squirrels in cooperation with the United States public health service, and the farm bureau has purchased a ton of poisoned barley and is distributing it at cost to the members of the bureau. We are making plans for a very intensive campaign during the spring and summer months. We will have squirrel days set aside in each farm bureau center when all will get out and poison with poisoned barley or fumigate with carbon bisulphide. We are hoping also to have a squirrel committee appointed in each school district of the county where no arm bureau center is near, and will thus cover every section of the county."

#### RABBIT SKINS AND MEAT ADVANCE IN VALUE

A Chance to Get Rid of the Pests and Make Money at the Same Time



BECAUSE of the increasing market value of rabbit skins, D. A. Gilchrist of the agricultural extension service of Arizona says that in preparing the skins for market they should be removed entire with the exception of the feet and head, and should be dried flat. As five or six dried jack rabbit skins will average a pound, the skins should net approximately five cents each.

In view of the importance of conserving and utilizing all available meat products, it is important this winter that consideration should be given to organizing control campaigns, to practicable plans of killing jack rabbits in such a way that they may be marketed. This may best be accomplished by means of drives and traps, the catch being prepared and shipped to an available market. Local dealers may be found who will handle the animals so that the profits may go to the people participating in the drives, or to cover expenses incident to lunches in connection with such drives.

It may be possible to arouse enthusiasm in such drives by arranging that the receipts shall be turned over to the Red Cross, or the animals shipped to the nearest training camp. In other states county supervisors, farm bureaus and commercial bodies have provided the necessary fencing used in such drives and immense numbers of rabbits have been obtained. Details for conducting such work and all possible assistance will be rendered upon application.

#### COTTON GINNING IN THE UNITED STATES

The cotton that was ginned in the United States from the growth of 1917 prior to December 1 amounted to 9,704,617 running bales, counting round as half bales and excluding linters, compared with 10,352,031 bales in the corresponding period of 1916, and 9,703,612 bales in that of 1915.

These statistics, which are compiled by the United States bureau of the census, include 173,339 round bales for 1917; 177,662 for 1916; and 93,361 for 1915. The number of sea-island bales is 77,638 for 1917; 102,496 for 1916; and 77,165 for 1915. The distribution of sea-island for 1917 by states is: Florida, 33,579; Georgia, 39,883; and South Carolina, 4,176.

The corrected statistics of the quantity of cotton ginned this season prior to November 14 are 8,574,316 bales.

#### SHARPENING FARM TOOLS

The average farmer will save time and labor and will keep his farm tools well sharpened by increasing or bettering his facilities for doing such work.

With a broad flat file an old dull rusty scythe can be sharpened in a few minutes by clamping the blade between two boards and drawing the file back and forth over the blade edge. A whetstone may be used to retain the edge on the blade while the scythe is being used. A large file may also be used in sharpening plowshares, discs, knives, etc.

Two grindstones enable a farmer to do better sharpening than but one stone. The grinding or cutting is then done on the stone having a coarse grit, while the sharp edge is put on the blade or tool by using the finer grit stone.

Where the farm is of considerable size, or a farmer has sweep power or engine power, he can use emery wheels to better advantage for grinding and sharpening tools than can be obtained by using grindstones or files. By belting or gearing the emery wheel shaft—which is journaled in an iron base or frame—to the engine pulley or sweep gear, and having a number of emery wheels of different fineness, a farmer is in a position to sharpen plowshares, discs, scythes and blades in double quick time. The inconvenience and delay occasioned by hauling plowshares and discs to town for the smith to sharpen, is no small item, especially where the discs are needed at once.

In fact, by sharpening the farm tools himself, a farmer can keep them in good, serviceable cutting condition, and the special facilities he has for doing the sharpening will soon pay for themselves.

Almost as important as doing the sharpening is the matter of having duplicate blades. The plow may strike a stone and break a share at a time when it is most needed; a scythe blade may snap in mowing tall weeds, so that it can be used only as a corn-stalk cutter. A new share or blade will be needed sometime, and an extra one on the farm overcomes any delay, or enables two men to work when an extra hand is hired.

Look well to the quality of blades if you wish them to stand much sharp-

ening or withstand breaking under reasonable conditions. Good steel blades are tempered in oil, and of course cost a little more than those not properly tempered or those made from second grade material. You can buy a jackknife for a shilling or for ten shillings, and you know the difference!

Do not sharpen tools with undue haste, especially on an emery wheel, as they may become overheated. Extreme heat withdraws the temper. Before the blade becomes hot from the friction of sharpening, allow it to stand a minute or two, then continue the sharpening. Dipping tool in cold water frequently will prevent burning.—W. A. Rees in Farm Journal.

#### AGREED

Hokus—"Toothache, eh? I'd have the blamed thing pulled if it were mine."

Pokus—"So would I, if it were yours."—Puck.

#### WEATHER CONDITION

San Francisco, Cal., Jan. 12, 1918.

	Rainfall			Temp.	
	Wk.	Season.	Norm.	Max.	Min.
Eureka	1.68	10.14	19.36	62	36
Red Bluff	.26	3.37	11.43	58	36
Sacramento	.74	1.95	8.19	60	36
San Francisco	.30	1.85	9.61	64	44
San Jose	.46	1.56	7.03	76	34
Fresno	.01	.50	4.18	64	34
San Luis Obispo	.00	.71	7.67	76	42
Los Angeles	.00	.43	6.03	66	46
San Diego	.00	.25	3.87	64	44

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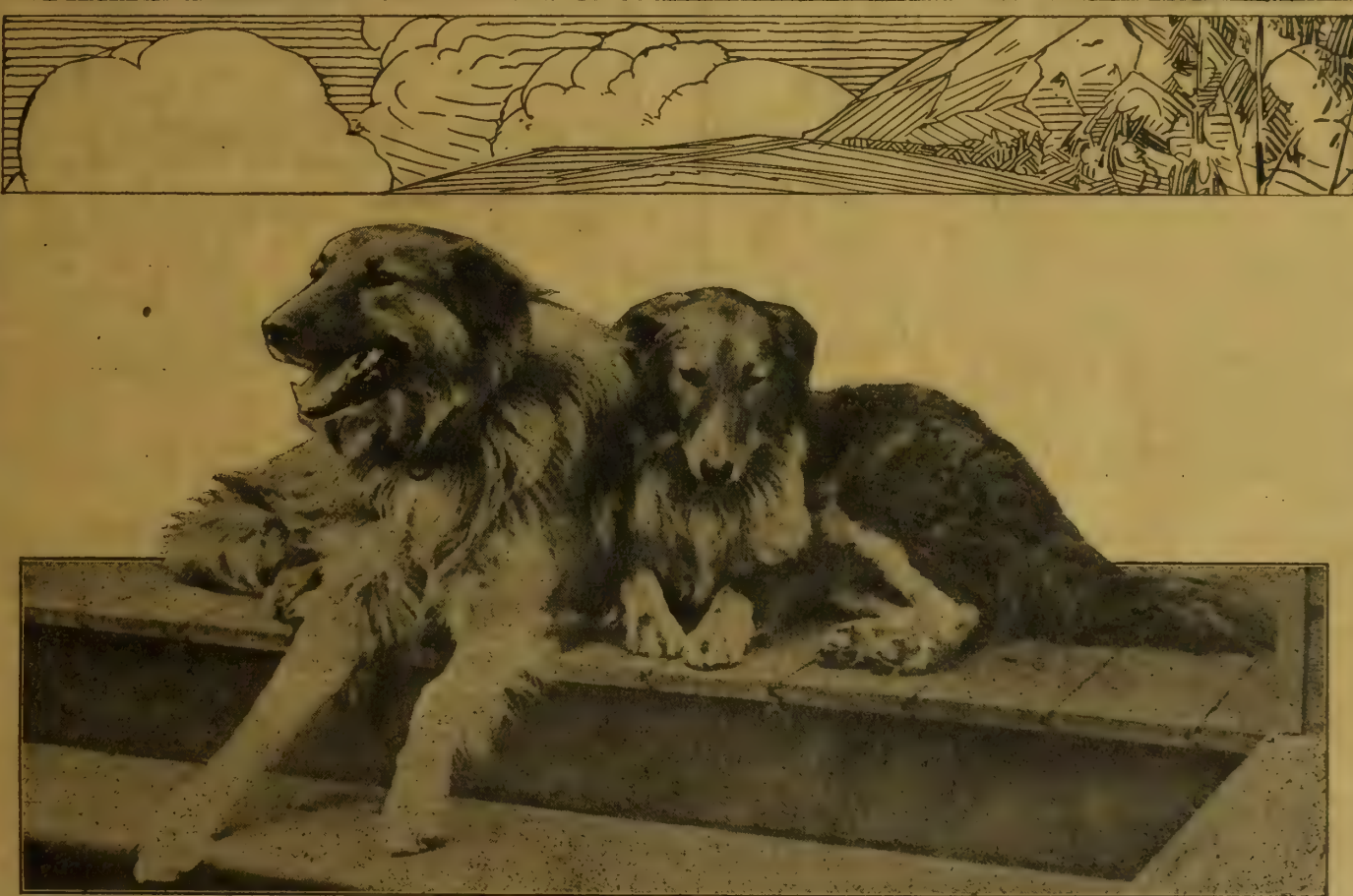
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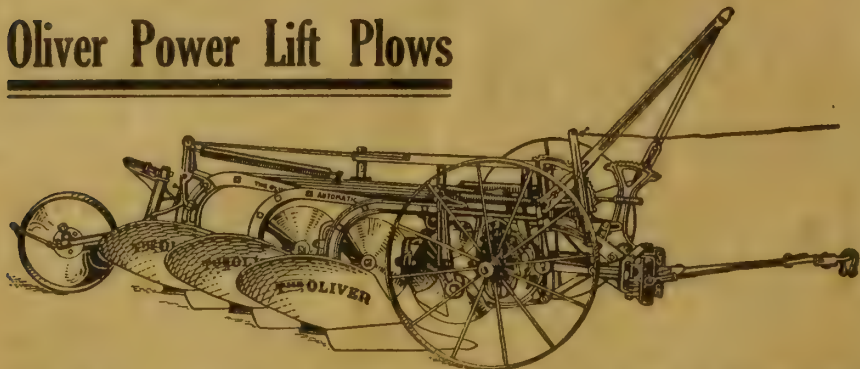


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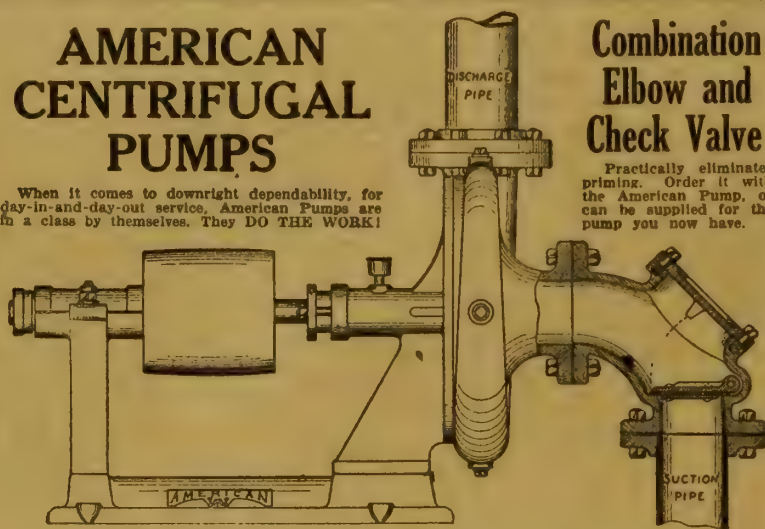
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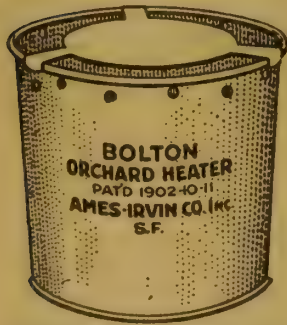
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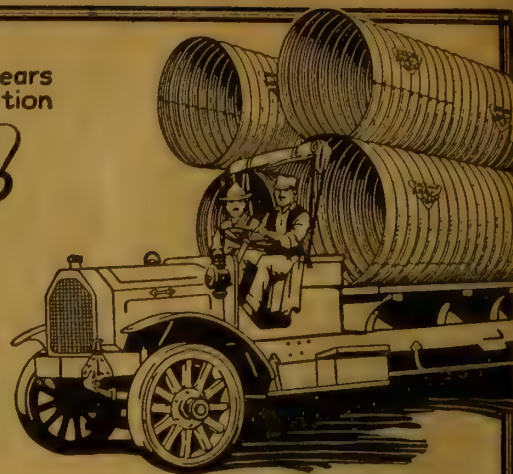
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# California Cultivator

Vol. L, No. 4                      LOS ANGELES: January 26, 1918                      One Dollar Yearly

## Advanced Registry for Fine Wooled Sheep

Prof. R. F. Miller of the University of California Makes Address Before the California Sheep and Wool Growers at Davis and Calls Attention to the Need for Advanced Registry for Sheep, Which Would, or at Least Might, Prove of as Great Value to the Wool as it Has to the Dairy Industry.

**F**INE wooled sheep are producers of wool and are the backbone of the entire range industry. To improve the quality of these would be a great step toward improving and increasing the present diminished wool clip. If the rangeman could buy bucks that would assure him of increasing his wool clip, even one-half pound per sheep, he would gladly pay a premium for same.

The purchase of merino sheep is very much at the mercy of the seller. No man can tell when a sheep was shorn or how close it was shorn from the appearance of it. Even at the state fairs and other shows sheep often carry three or four months more wool than they are reported to have on. Stubble shearing and not shearing down on the legs are willful misrepresentations that are anything but a credit to the industry.

There is nothing that has done so much towards improving the dairy cow as the Advanced Registry. When the Registry was first formed the record yield was comparatively low. However, this stimulated production and enthusiastic breeders tried to win a place of honor and raise the production of their herds. Cows that produced a given quantity of milk and butter in a specified time were admitted to the Advanced Registry. Cows that had entered the Advanced Registry became in demand for men began to breed from record cows and looked toward bulls that had sired record cows. In this way the record has been raised from 15 to 20 pounds of butter per week to 45 and even 50 pounds per week.

The same thing can be duplicated with fine wool sheep for the wool clip admits of concrete measurement. It would work wonders in increasing and improving the production of wool. No doubt there have been many high producing rams and ewes among fine wool flocks that have a long list of heavy shearing sons and daughters to their credit, but we have no official record of them, hence their value is lost.

In adopting an Advanced Registry, certain qualifications would have to be decided upon for a standard:

1. Weight of fleece in grease.
  2. Weight of fleece scoured.
  3. Length of fiber.
  4. Weight of sheep.
1. The weight of fleece is perhaps the most important, as this is what the wool grower looks forward to above everything else. The weight of a fleece is commonly expressed in terms of grease wool, but the real weight and value of a fleece is determined on the scoured basis.
2. Weight of fleece scoured. It is not sufficient to have merely a heavy fleece including grease, sand and dirt, but a clean wool of medium or low shrinkage is desirable, so as to yield a large amount of pure fiber. Australian merino wool shrinks about 40

per cent, while American merino wools shrink 60 to 65 per cent. The shrinkage is entire waste. Furthermore, excessively oily fleeces are objectionable as it has been found that sheep secrete oil at the expense of body fat. This lowers the vitality of the sheep and they are less able to resist cold, wet weather or go through a winter of scarce feed.

3. Length of fiber. This is a very desirable characteristic of fine wools in order to spin strong worsted yarns. Fibers must be at least two inches and preferably longer to make a worsted yarn. Length also adds weight to the scoured fleece.

4. Weight of sheep. This is desirable in order to establish uniformity among Advanced Registry entries. A handy weight should be adopted as the standard, and breeders should be encouraged to stay within certain limits for both bucks and ewes.

### Method of Procedure

Whenever a breeder decides to have his flock or the highest producers tested for Advanced Registry, he

should inform the secretary of the California Wool Growers' Association of his wishes. He will in turn advise the animal husbandry division of the State Agricultural College, which will send a supervisor to conduct the test. The supervisor will see that the sheep are close sheared either with the blades or the clippers. Then he will put an official identification mark on the sheep, for which the ear tattoo may prove best. He will then make a record of the date of shearing, denoting blades or clippers, giving age as indicated by the teeth, weight of sheep after shearing, and any natural identification marks. This record is to be made in duplicate and one copy to be forwarded to the Registry Association, while the other is to be put on file at the Agricultural College.

One year later the supervisor returns and each sheep, after being properly identified, is shorn. The shearing must be done with blades if the blades were used at the previous shearing and on the other hand clippers must follow clippers. This pre-

caution must be exercised in order to have like conditions at both shearings.

All tags, dirt, or dung balls must be thrown out.

The fleece is then rolled up and laid on a large cloth and carefully weighed by means of an ordinary pair of milk scales, and a record made of same.

This having been done, the supervisor opens up the fleece and plucks a small lock of wool from the sholder and puts this into a small bottle, carefully labeling the bottle. This sample is sent to the laboratory for determining the length of fiber.

The next step is to sew up the fleece carefully in cheese cloth and prepare it for shipment to the Agricultural College, where it is to be scoured and the shrinkage ascertained.

And lastly, weigh the sheep after it is shorn.

To determine the length of fiber from 100 to 200 individual fibers have to be tested.

To measure the length of a fiber it is mounted on a slide and thrown into a screen by means of a lantern, then traced with a map measure, and the exact length determined.

A number of fleeces have been tested as preliminaries toward working out a standard. The fleeces are all 12 months' growth, the tests being conducted by the writer.

	Pounds of fleece scoured	Pounds of fleece in grease	Shrinkage, Per cent	Length of fiber (inches)
Ram				
No. 1	23.0	8.6	62.6	3.36
No. 2	23.4	7.6	67.5	3.37
No. 3	25.9	8.8	66.0	—
Ewe				
No. 1	22.0	9.1	58.3	3.29
No. 2	19.5	7.8	60.0	3.55

The division of animal husbandry of the University of California is prepared to conduct tests of this kind for any man having fine wool sheep he would like to have tested.

### OUTDOOR EDUCATION

The School Garden Association of America publishes Outdoor Education, a magazine devoted to elementary agriculture, especially for school and home gardens. We are in receipt of the November number which is called the Los Angeles number. It contains items affecting the school and home garden campaign as carried on in Los Angeles and Southern California during 1917.

There is nothing better for growing pigs and hogs of all kinds and ages than skim milk, or milk in any form, sweet or sour. The small farmer with one sow and a few cows with skim milk to spare can make quick money and a substantial side revenue by raising and finishing two litters of pigs each year.

### THE PRAYER FOR RAIN

By John S. McGroarty

Lord, seest Thou not, beside the way,  
The drooping flowers  
That week by week and day by day  
Cry for Thy showers?

Hear'st Thou not the plaintive song  
The wild birds sing,  
That in the withered woodlands throng  
With dusty wing?

The bare brown hills, the blanching plains,  
The silent vale?  
They fade and sicken for Thy rains,  
In sore travail.

The wild folk of the forest keep  
Wail in the night,  
And, 'neath the loam, the poppy sleeps,  
Shut from the light.

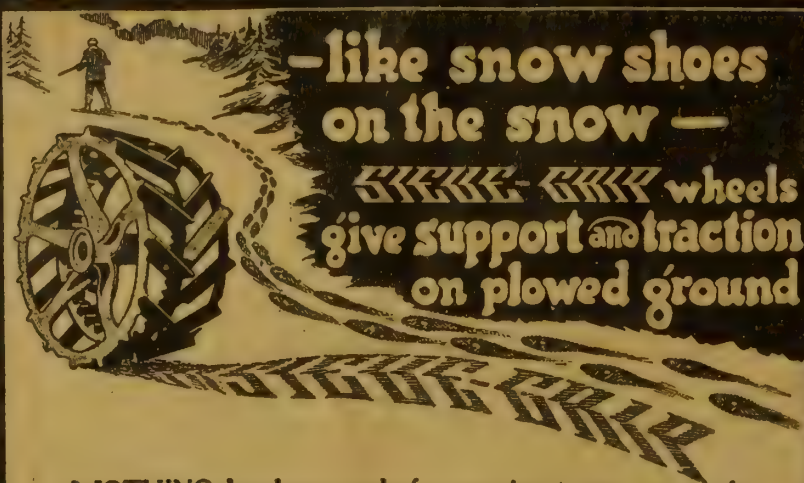
Lord, in Thy wideflung, bending sky  
Afar there broods,  
Where veiled and mist-swept oceans lie,  
Thy cloud-pent floods.

Send Thou from thence the singing rain,  
The laughing streams,  
On this dear land of hill and plain  
Thou mad'st of dreams.

This land of dreams Thou mad'st so fair,  
So fair and sweet,  
Set like a jeweled footstool, there  
To rest Thy feet.

The earth will blossom at Thy word—  
O, speak it, then;  
We ask it of Thy mercy, Lord  
In Thy dear name. Amen.





—like snow shoes  
on the snow—

**SIEVE-GRIP** wheels  
give support and traction  
on plowed ground

**NOTHING** has been made for carrying a man over soft snow better than the snow shoe. The light weight mesh and broad surface, enables a man to travel over snow--- the snow shoe gives traction and **SUPPORT**.

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ONE MAN DOES FOUR MEN'S WORK. ALL THE SPRAYING IS DONE FROM THE GROUND. HENCE NO LOST TIME, LOST LABOR, NO INCONVENIENCE FROM WORKING RODS AROUND AMONGST THE BRANCHES. AS A RESULT OF THE RAPIDITY AND EASE IN DOING THE WORK LESS MATERIAL WILL BE USED.

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## How Can We Improve the Quality of Our Dried Figs?

By Henry Markarian at Fig Institute at Fresno



ANY growers turn their attention to the greatest amount they can possibly produce from their fig orchards, and I want to emphasize that it is equally as profitable to get the best possible product from the orchard. Improvement in quality of dried figs depends entirely upon the grower. If the producer is not taking the proper care to develop his fruit, then curing, processing and other methods will help very little as to the quality, but will only help to give it an attractive appearance.

It has been commonly known that fig trees can be grown with the least care. It is true of course that a fig tree will stand more neglect and abuse than all other fruit trees, excepting the olive, if I am not mistaken. Nevertheless, if fig trees are not given the proper care, the quality, yield and the health of the tree will year by year decline. The reason for the neglect of fig trees was mainly that they were planted as vineyard borders, and whatever income they received from them was velvet. Orchards have been planted so extensively now that this method of border planting has almost ceased.

In order to improve the size and quality and increase the production of figs, the trees must be pruned more or less every year. The tips must be cut back every two or three years so as to give a new growth of laterals. In orchards where splitting and souring of figs are common, the soil must be treated with lime, which has proven a success. The amount of lime depends upon the extent the figs sour, from one to three tons per acre is sufficient. Hydrate of lime is recommended to be used for this purpose, and should not be spread at once, but 1000 to 3000 pounds a year for two years. A heavy application of hydrate of lime may burn the humus in the soil. After the soil is properly limed it must be followed by a soaking irrigation in the spring. This causes the lime water to sink down to the roots of the tree and will give a hard blow to the nematode worms if the roots are infested by this disease.

Irrigation twice a year is very essential for orchards in the San Joaquin Valley. The first soaking should be given about the first part of May when the figs, about the size of a pea or smaller, first appear on the trees. This will help the tree to retain all of the figs produced. The second irrigation should be followed after the capricification season, the season ranging from the twentieth of June to the tenth of July. A good soaking is necessary (the entire ground must be covered with water) in order to give full action to all the roots, which will tend to develop exceedingly large

sized figs and prevent them from falling.

If the trees become mossy, this will run down the quality of the fruit and is a detriment to the tree. The trees should be sprayed once every three years. Prepare a solution of lime and bluestone. The following formula has been used and good results have been obtained; in 50 gallons of water dissolve 30 to 40 pounds of slacked lime, with one pound of bluestone.

During the harvest season care must be taken in handling the fruit. The method I have practiced has been very satisfactory and successful. The figs should be picked from under the trees once a week, at least; if the figs are left too long under the trees the hot sun causes the fruit to discolor. When the figs have been picked they must be carried to the drying yards, spread on trays and left to dry in stacks for ten days. The figs should then be washed in a solution of water, lime and salt. The formula is 40 pounds of salt and eight pounds of live lime to 100 gallons of water. The very dry figs should remain in the bath for an hour, but less time is required for the soft ones. The salt in the solution keeps the figs in a pliable state for packing. The lime acts as a preservative, preventing fermentation and consequent souring. The lime water has a peculiar property of throwing all solid impurities out of the solution and thus enabling the bath to be used a greater number of times.

It is almost always necessary to bleach White Adriatic on account of the dark color after washing. The Smyrna figs need very little sulphur or none at all on account of the lightness in color. One quart of sulphur is required to each sulphur house containing 100 small trays of White Adriatic, and half the amount is necessary for Smyrnas.

The figs should then be spread on trays and transferred to the sulphur house over night to go through a sweating process besides the sulphuring. The figs can be removed in the morning but must be left to dry in the stacks, at least from one to three days, depending upon the condition they are in.

They are now ready for boxing and can be delivered to the packing house. This is my way of curing, and I have met with exceedingly good success. On reaching the packing house they are immediately graded into three different grades such as cooking figs (one or two crowns), choice and fancy's. The cooking figs are used mostly for fig bars and other confections, while the choice and fancy's are packed in fancy packages or layers. The figs again go through a sterilizing process (before they are packed) of hot water or steam when received by the packer.

### More Help



THE farm labor question is concerning nearly every section of the state, and in several sections the feeling prevails that appeal should be made to Washington. The following resolutions were passed by the committee appointed by State Commissioner Hecke as directed at the recent state 'fruit growers' convention:

Whereas, the only way in which a

realization of this object can be attained will be by an assurance on the part of the government authorities that the requisite amount of labor necessary to harvest this greatly increased production will be available; therefore be it

Resolved, that this committee use every endeavor to impress on our state council of defense, upon our state and national government, first,



he urgent necessity of largely increasing the available supply of agricultural laborers; and, second, Of raising the efficiency of all labor by abolishing the saloons for the period of the war. And furthermore, to it

Long Pruning

More long pruning is done in California vineyards than ever before, and every hint which will save a single movement or give more efficient service is of value. We note in the matter of tying vines to the trolley or upright, as the case may be, some Cali-



Fig. 1—Illustrating Bracing of End Post for Vineyard Trellis

ifornia vineyardists use fibre from palms, others raffia, others binder or cheap grade of twine. Here is a suggestion which is given, together with illustrations, from the Standard Cyclo-



Fig. 2—Tying with Wire; the First Movement

York, in which Figure One shows methods of bracing and tying end posts. Of course this trellis is not placed until the second or third year after planting. The book recommends Number Nine galvanized wire, the first to be about 30 inches from the ground, with about 30 inch intervals between wires. Many vineyardists use

Fruit Syrups

**A**N excellent suggestion is made by resolutions offered by Frank T. Swett of Contra Costa at a recent meeting of the farm bureau:

Resolved, That in view of the shortage of sugar due to war conditions the directors of the Contra Costa County farm bureau respectfully request Dean Hunt and the University of California to continue on an adequate scale experiments and demonstrations on the possibility of making grape syrup for use as table syrup and for use in the canning of other fruits.

Also be it resolved that the zymology laboratory under Professors Bi-jetti and Cruess be asked to investigate the possibility of making candy substitutes by the utilization of corn and fruit syrups and fresh or dried fruits.

Resolved, that if it is necessary a delegation be sent to Washington to present the urgent need of a largely increased labor supply for the California farmer.

only two wires. When putting the wire on the posts or tying the vines



Fig. 3—Second Movement

always keep on the windward side. Method of tying the vines is shown



Fig. 4—Third Bend; All Complete but Tying

so plainly in the engravings that further explanation is not necessary.



Fig. 5—Tie Completed

gloves are serviceable when greased or soaked with machine oil. Some men prefer miscible oils for dormant

spraying, as they are more pleasant to handle. Arsenate of lead and Bordeaux sprays in the summer are not so disagreeable.



He Wrote To His Brother "Get a JOHN DEERE Tractor Plow"

"You ask me what I think about your buying a tractor. Judging by my own experience, I'll say that you have done the right thing. But I want to give you some good advice that a neighbor gave me when I decided on tractor farming. 'Remember,' he said, 'that the tractor only pulls. It's the plow that makes the seed-bed.'"

"You ought to get the best plow you can buy to use with your tractor. That's just as important as buying the tractor itself.

"I bought a John Deere plow when I bought my tractor and I am mighty well pleased with the work it does. It is unusually strong and light running. It saves fuel, and fuel costs a good deal these days. It doesn't have any chains and sprockets to cause trouble. It is so easily operated and dependable that I can keep my attention on the tractor while plowing. And best of all, it leaves a perfect job of plowing behind it. The best advice I can give you in connection with your tractor is 'Get a John Deere Plow.'"

And that is the best advice anyone can give to a man who intends to buy, or already owns, a tractor—get a

JOHN DEERE TRACTOR PLOW

Successfully Used With Any Standard Tractor

Makes a Good Tractor Pay

A John Deere Tractor Plow repeats its first great value to you year after year. It continues to make better seed beds. Its use means repeated plow profits for you instead of repeated plow investments by you. Its seed bed-making service makes a good tractor pay.

Operating Economy

A John Deere Tractor Plow in your fields saves time, labor, fuel and plow up-keep. You operate it from the tractor seat. It requires little or no attention as you drive down the field. Its extra-quality bottoms scour perfectly. Its extra clearance prevents clogging. In turning at the end of the field, a slight pull on the trip rope causes the powerful power lift to raise the bottoms high and level.

Because of the location of the axles, the bottoms, when lowered, reach full depth instantly and stay in the ground. Perfect balance and superior bottom qualities make the plow extremely light draft—fuel-saving. There are no chains or sprockets to cause trouble. Every part is as strong as the best of material and workmanship can make it.

Use It With Any Standard Tractor

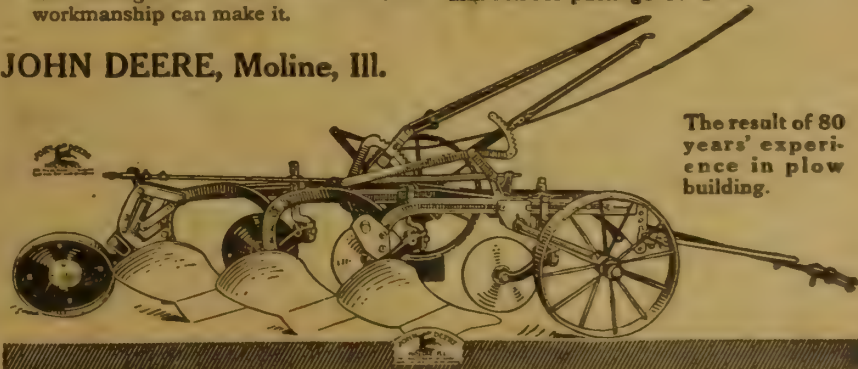
You can use a John Deere Tractor Plow successfully with any standard tractor. If your tractor is small, get the No. 5, carrying two to three bottoms. If your tractor is of the larger type, get the No. 6, carrying three or four bottoms. Insist on a No. 5 or No. 6—see them at your John Deere dealer's.

Get These Free Books

Write today for our free booklet describing both the No. 5 and No. 6 John Deere Tractor Plows. It has a message on tractor plow value that you will find profitable reading. Ask also for our big free book, "Better Farm Implements and How to Use Them." Its 156 pages describe a full line of labor-saving implements—tells how to adjust and operate many of them. It is full of practical information that will help you. Use it as a reference book. Worth dollars.

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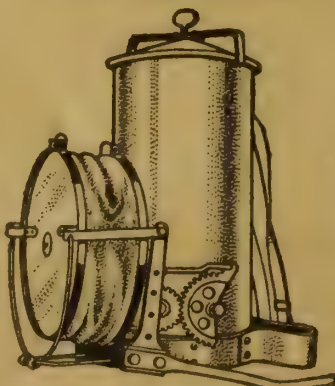
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you about all kinds of plants and trees and how to grow them.

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through, if there is a crop shortage  
this year. Anything edible that we  
can produce is, therefore, worth far  
more to the World than its mar-  
ket value would indicate. There  
may be plenty of Gold but we can-  
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Los Angeles, Cal.

Fresno County Horticultural Com-  
missioner Fred Roullard reports ex-  
pense of \$8309 for the past year.

## Draining the Swamps and Damp Lands

Written for California Cultivator by William M. Bristol



WHILE it is true that the  
county of San Bernardino  
with its 20,000 square miles,  
the largest county in Cali-  
fornia, is chiefly desert, it is  
also true that it contains several  
thousand acres of land so wet that it  
must be artificially drained before it  
can be profitably used.

In the San Bernardino valley—  
which, specifically, means the well-  
nigh mountain-girt basin, about ten  
miles square lying immediately east  
of the Rialto mesa—there are perhaps  
4,000 acres which would be improved  
by drainage.

It is interesting to analyze the condi-  
tions existing in this valley, a fertile  
body of soil overlying a subterranean  
reservoir, characterized by the late  
Dr. Hilgard as one of the most re-  
markable formations in the world. It  
is walled on the north and east by  
the San Bernardino mountains, a vast  
elevated region culminating in Mt.  
San Geronimo, with an altitude of  
nearly 12,000 feet, and having a heavy  
annual rainfall. On the south it is  
hemmed in by a range of lower moun-  
tains which apparently prevent the  
escape of any underground water in

surplus now escapes by way of the  
numerous artesian wells that have  
been drilled, thousands of inches of  
it being led away in canals to River-  
side County.

Unlike the Dakota artesian area,  
where the water is found under a  
stratum of limestone, the San Bernar-  
dino valley owes its artesian condi-  
tions to strata of clay. A portion of  
the water fails to get under the clay  
blankets and consequently flows down  
on top of them. It is this water  
which finds its way to the surface and  
converts large areas into swamps.

All the water flowing down from  
the mountains contains mineral salts  
which it has dissolved out of the rock  
through which it has seeped. When  
this water comes slowly to the surface  
and is evaporated it leaves its min-  
eral salts on or near that surface;  
and, although the salts carried by the  
water are infinitesimal in percentage,  
the continuation of the evaporation  
process for centuries results in such  
an accumulation of mineral salts that  
it is designated as a deposit of alkali  
or an alkali soil.

Alkali soils, so-called, are found  
only in arid regions—regions where



Let Gas Do It  
Machine digging of trench for tiling quicker and more economical.

that direction. Across the western  
end of the basin there is known to be  
an impervious underground dike; and  
thus nature has provided storage ca-  
pacity for more than enough water to  
irrigate the fertile plain overlying it.  
It has been proven in well drilling  
operations that this reservoir, meas-  
uring downward from the surface of  
the soil to bed rock, has a depth of  
more than 1,200 feet. The only out-  
let for the surface waters of the valley  
is via the channel of the Santa Ana  
River, which flows out at the south-  
west corner between Colton and  
Riverside. My own belief, based upon  
observations of portions yet visible  
above the plain, is that the great west  
end dike extends from the mouth of  
Lytle Creek in a southeasterly direc-  
tion to Smiley Heights—in short, that  
the Smiley Heights portion of the  
dike simply was lifted higher than  
the remainder. There are good reasons  
for believing that the channel cut by  
the Santa Ana River through this  
dike, perhaps a few hundred thousand  
years ago and since filled with sand  
and gravel, is the only subterranean  
outlet of any importance from the  
great reservoir.

When it is considered that several  
hundred square miles of mountainous  
territory pour their waters into this  
valley, sinking most of them in the  
gravelly moraines at the mouths of  
the canyons, it is plain that in years  
of normal rainfall there must be a  
surplus in the basin. Much of this

the rainfall is too scant to wash away  
the residue left on the surface by the  
evaporation process. Artificial sub-  
terranean drainage is not only the  
remedy for an excess of water at the  
surface, but is also essential in the  
elimination of alkali from soils where  
water has reached the surface by  
capillarity only. Roughly speaking,  
the districts needing drainage have  
about equal areas of these two classes  
of soil.

It is a time-worn maxim in South-  
ern California that "Water is king."  
Evidently the high value set upon  
water by those who own land at the  
foothills has caused land owners lower  
down to hesitate about letting a thing  
of such value escape from their prem-  
ises. There is a story of a California  
woman whose land was tile-drained  
who caused the drains to be plugged  
every fifth year in order that the peo-  
ple who used the outflow during the  
other four years might not acquire a  
title to it. There is also a story of a  
Yankee lad who declared his inten-  
tion to ride a certain horse even if he  
froze, because it was a borrowed  
horse!

It is dawning upon the people of  
the lower portions of the San Bernar-  
dino valley, however, that too much  
of a good thing is a bad thing. A  
noteworthy beginning in systematic  
tile drainage, installed by the machine  
method, is being made by I. R. Fogler  
on his 65 acre tract on Tippecanoe  
Avenue east of San Bernardino City.



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F. O. Popenoe, Mgr., Altadena, Calif.

This voracious excavator bites out a trench three to four feet deep at the rate of 200 lineal feet per hour; and one man easily lays the tile behind it. The six inch tile being laid costs six cents per foot; the trench costs two cents per foot, while covering and incidentals cost two cents more, a total of ten cents per foot. As Mr. Fogler is laying his lines 75 feet apart his total expenditure will be about \$50 per acre.

In seasons of scant rainfall Mr. Fogler's land has produced five tons of barley hay per acre. In seasons of normal rainfall it has produced about one-fifth as much. When drained it will yield the maximum every year and will produce other crops in like ratio. The lands which need drainage are, when drained, the richest and most productive in the region. If the man who makes two blades of grass grow where only one grew before is a public benefactor, what shall be said of him who trebles and quadruples the products of his soil in war time?

It is apparent, however, that the systematic, successful and economical drainage of the damp and alkaline lands of the San Bernardino valley can only be accomplished through the organization of a drainage district as provided by state law. A movement in this direction is now well under way and is being pushed by County Farm Adviser H. F. Bahmeier, who has recently returned from Australia where he had four years of experience in drainage work. No engineering difficulties confront the movement, and there is abundant fall throughout the district; but, as is the case in every extensive damp territory, a legally constituted district is necessary to secure rights of way for mains and to construct and maintain them.

## CITRUS EXPOSITION

The management of the National Orange Show are busy people these days, for February 20-28 are exposition dates. Assurance has been given by practically all the leading citrus communities that they are preparing for gorgeous scenes and designs which will make the exposition, as it has always been, a garden of California fruits and flowers. Entertainment features are being provided.

Fungous diseases are much more difficult to control in most cases than insects. One must fight something that he cannot see but feels sure will come later in the shape of diseases. There is little that can be done to destroy or control diseases after they have become visible to the naked eye. These diseases come from minute spores that float through the air in very large numbers and come to rest on the plants. When the proper time and conditions come, these spores grow and enter the tissue of the plant on which they feed. After the disease once enters the tissue of the plant there is no remedy. Nothing can be applied that will kill the disease and not harm the plant. It is the spores, then, that must be killed. With this explanation it is easily seen that the so-called fungicides are really "sporicides," and must be used before the spores grow.

## IT'S ALL IN THE POINT OF VIEW

Albert, aged three and a half, had failed to respond to verbal reprimand, and at last his mother said, "If you don't behave you will have to be spanked. You would not like that, would you?"

"I wouldn't like Daddy to spank me," was the quick response.

"Why not?"

"He doesn't know how. He hurts."

—Life.

# TEAGUE QUALITY CITRUS TREES

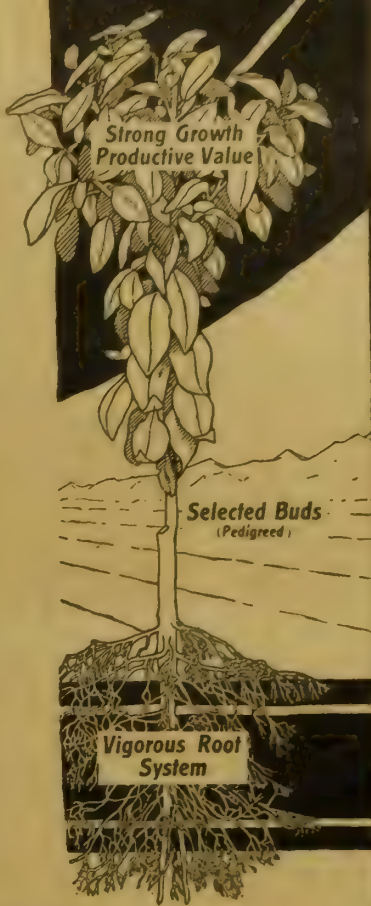
AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

# The R. M. Teague Citrus Nurseries

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# Ornamental and Fruit Trees

We have for sale this season a magnificent stock of Fruit and Ornamental Trees, Climbing Plants, Shrubs, Palms and Roses.

Write for prices on Cherry, Walnut, Citrus and Olive Trees, and Resistant Grape Vines.

Send for Illustrated Catalog and Price List.

California Nursery Co.  
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Write for Suggestions

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will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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12 " ..... 9.50 " " "	20 " ..... 15.00 " " "
14 " ..... 10.50 " " "	24 " ..... 17.50 " " "
16 " ..... 11.50 " " "	30 " ..... 20.00 " " "

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San Francisco

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FRENCH, IMPERIAL and SUGAR PRUNES on Myro, almond and apricot roots; CHERRIES, ALMONDS, BARTLETT PEARS and a full assortment of Fruit and Nut Trees, Plants and Vines.

Catalog and Price-Lists free upon request.



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Violet Garden

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Mail Address: R. F. D. 1, Box 666

San Gabriel, Cal.

When writing advertisers, mention The Cultivator.

## Turnips

Written for California Cultivator by D. F. Reichard



IN REPLY to the many recent inquiries about the planting of turnips we can say that there has been a heavy demand for this vegetable during the winter for shipping to Eastern and Canadian markets where the supply was short. Representatives have been contracting for and shipping large quantities of turnips and carrots. These contracts call for delivery before April first. This would necessitate sowing the turnip seed in our open cool valleys by the middle of November, while in the milder sections, with favorable conditions, as late as January first might be risked.

This is the first time that turnips have really come into prominence with the California growers. Although turnips are grown the year around they do not hold the utility place here that they do in the East and Northeast. Our climate is too mild. They do not store well. Besides it is not necessary to store them for they can be grown at any time except during the warm

summer months in warm valleys, to which the turnip does not take kindly. Conditions Required

Turnips must be grown in rich, loose, well worked soil that is naturally damp or which can be irrigated easily. These conditions are necessary for quick growth which means tender sweet roots. Poorly grown turnips are tough and hot and often bitter.

The variety used almost exclusively now is the Purple Top White Globe. This variety has proved to be the best shipper, and although not quite so quick to mature as the flat varieties, it is more reluctant to get pithy. The Early Purple Top Strap Leaf and Round White Six Weeks turnips are the best obtainable early varieties, very sweet and crisp, but should be used as soon as they attain their growth as they soon get pithy.

Rutabagas are planted to a very limited degree during the fall of the year. Our climate generally is not cold enough for them.

## Castor Beans

Written for California Cultivator



APPARENTLY some shrewd purchaser of castor beans has done some good advertising and started stories as to the value of castor oil as lubricant for airplanes. The number of inquiries which have come to the Cultivator are legion. We are unable to determine as to the source of the stories, and the most definite information to be secured from anyone is what is appearing in the papers. Safe advice has been to all to know as to your market before planting this new crop. Apparently castor beans can be grown to perfection in California. We do not know as to the value of the oil, but we know that years ago the beans were cultivated. One large plantation, at least 160 or more acres, near San Bernardino was planted and harvested. The greatest obstacle seemed to be the cost of harvesting and hulling and the indifferent price received at that time. Under present demand it is to be presumed that much more satisfactory market may be secured, but it is a class of product which should not be grown excepting under contract. There is no oil mill in California.

Oklahoma is the producing center of the industry. Alabama is at present producing large quantities. Presumably this is made possible by the cheap labor in those states. As to the plant and its culture, we quote from the Cyclopaedia of American Agriculture, by L. H. Bailey, published by the Macmillan Company of New York. The particular article quoted from, however, is written by E. Mead Wilcox, who was the first in the United States to undertake the systematic breeding of the plant for the express purpose of increasing its oil producing qualities. This work was started in Oklahoma, and is now continued there by others while Mr. Wilcox is in Alabama.

"The castor oil plant belongs to a family of over 4,000 species and is developed most highly in the tropics. It furnishes a great variety of useful products, among which may be named cassava or tapioca, caoutchouc and shellac. In the tropics the castor bean grows to a tree 30 to 40 feet high, but

in temperate regions it is a large annual.

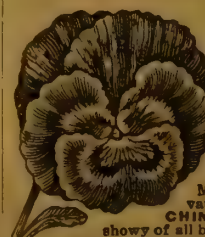
"The original home of the castor oil plant was in Africa or India, but it is now cultivated in all the warmer parts of the world, either for its oil or as an ornamental plant. The highest yield of oil is secured in the tropics, and it is grown only for ornamental purposes in the northern part of the corn belt where it would be a failure if grown for oil. It is said, however, that the oil secured from beans grown in the temperate climate of the United States is superior for medicinal purposes to that grown in the tropics.

"In the United States the plant is now cultivated commercially in Oklahoma, Illinois, Missouri and Kansas. Oklahoma producing probably over half the total product. The product of the beans in the United States has fallen off very much in recent years and we are becoming more and more dependent on the supply from India. Soil

"The plant prefers a rich well drained sandy or clay loam and will not do well on either a stiff clay or a light sand. In this respect it may be said to do well in soil suited to corn and wheat. If virgin soil is not employed, one must apply either manure or commercial fertilizers to keep up the supply of available nitrogen, potash and phosphoric acid.

### Planting

"The seeds are planted either in rows four or five feet apart each way, or else in rows about four feet apart and only 18 inches apart in the row. When the plants are about six to eight inches high they are thinned to a stand of one plant per hill. It may be found desirable to pour water



## American Mastodon Pansies

These possess the most robust vigor, largest sized flowers, superb rounded form, great substance, violet scent, and marvelous colors without limit. The quickest to bloom and most durable; the acme of perfection in Pansies. Seed, pkt. 10c. CHILD'S GIANT KOCHIA. Most decorative annual in cultivation, pkt. 20c.

CHINESE WOOL FLOWER. Most showy of all bedding annuals, pkt. 10c. ASTER AM. BEAUTY. Gigantic pink flowers on two foot stems. Finest Aster, pkt. 10c. SPECIAL OFFER—These four greatest floral novelties FOR 25c, with Booklet, "How to Grow Flowers," and Catalog. OUR BIG CATALOG of Flower and Veg. Seeds, Bulbs, Plants and new fruits FREE. We excel in quality and varieties. JOHN LEWIS CHILDS, Inc., Floral Park, N. Y.



nearly boiling hot, over the seeds and allow them to stand, without heating, for 24 hours. This treatment seems to insure a more uniform and prompt germination. The plants are cultivated level to keep down the weeds, as is corn, until they are about two feet high, from which time they should be able to take care of themselves. From four to six seeds are planted in a hill to allow for all accidents. At the greater distance (four by five feet) about one and one-half quarts of seed are required for an acre; at the lesser distance (four by one and one-half feet) about four quarts are required. Harvesting

"If the beans are planted from the middle of April to the first of May" (this, bear in mind, is presumably for Oklahoma conditions), "one may expect to see the first ripe fruits in July; and from this date to the first frost the pods will continue to ripen and the harvest must be continued. The pods are so constructed as to throw the seeds to a considerable distance when the wall of the pod breaks, and hence the necessity of collecting the entire fruit cluster as soon as it turns dark brown. These clusters are cut off with a sharp instrument and hauled away in a tight wagon-box. They are then spread on a tight floor in the barn and left to dry and crack open. When all the seeds are out of the pods they may be swept together and passed through a hand fanning mill and stored in some dry place until sold. Frosted beans should never be mixed with the good ones as they reduce the value of the whole lot. If gathered at the proper time and handled as indicated, the labor item may be reduced to a minimum.

"One of the points to be kept in mind in the breeding work is to develop a type in which the fruits in any one cluster will ripen at the same time to prevent loss. The work of gathering the crop is tedious and could be much reduced in this way.

#### Manufacture

"The manufacture of castor oil is largely concentrated at present in Jersey City and St. Louis. The former place presses much of the imported material; while the St. Louis mills handle largely the production of the Western states. The hydraulic press is the essential feature of these mills, as the common method is to crush by hydraulic pressure without any further treatment than the mere removal of foreign matter. The seeds are not decorticated, as is the practice with cotton seed in making cottonseed oil. In some cases the seeds are steamed before pressing, but though this permits of more rapid extraction it yields an oil of inferior quality for medicinal and other purposes. Most of the mills leave in the residue ten per cent or more of oil.

"The residue, called castor pomace, is a very good fertilizer material but is poisonous to stock and cannot be employed as cottonseed meal. In some places it is prized as a fertilizer for tobacco and other plants."

Later information from Washington indicates that the demand is not so extreme as at first anticipated. In any case it's an industry calling for special knowledge. If one wants to plant beans, plant beans—but with castor beans let's know "where we're at" first.

It is necessary for the spray materials to come in contact with the spores to kill them. If only half of the leaf surface is covered there will be plenty of spores left unharmed to ruin the entire crop.

#### Book Review

#### SOIL PHYSICS AND MANAGEMENT

"Soil Physics and Management," by J. G. Mosher, professor of soil physics, University of Illinois, and A. F. Gustafson of the same university, published by J. B. Lippincott, Philadelphia.

This is practically a combined text book for agricultural students, a reference book for every farmer's library, and again for general information of everyone interested in growing things in the soil.

"Soil physics is the application of physics to soils. It is so closely related to other sciences that it becomes necessary to trespass upon the ground

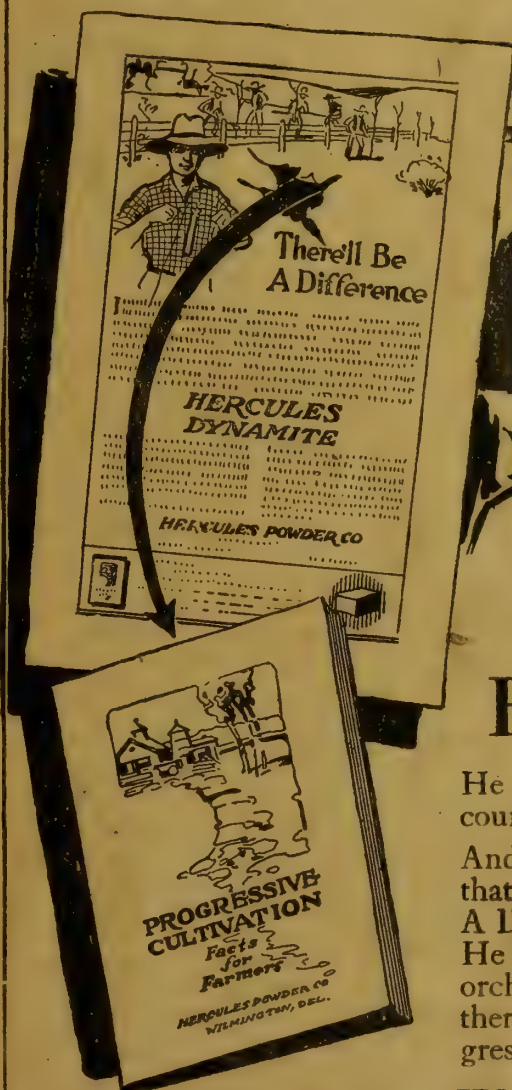
of some of them, notably botany, geology, chemistry and zoology, to present certain subjects clearly and completely. Soil physics dovetails in with the closely related phases of agronomy, as soil biology, soil fertility, crop production, and agricultural engineering, to such an extent that it is necessary to give material very closely related to all of these."

There are 442 pages with over 200 half tone engravings and line drawings scattered through the work. There are 28 chapters and a three chapter appendix. Some chapter headings are Soil Material and Its Origin; Weathering; Placing of Soil Material; Soil and Subsoil; Classifications;

Mineral Constituents; Maintaining and Increasing Organic Matter; Physical Properties of Soil; Control of Moisture Through Drainage, Tillage, Dry Land Agriculture, Irrigation, etc.; Alkali Lands and Their Reclamation; Temperature; Aeration; Soil Organisms; Tillage; Erosion; Rotation, etc.

Of the insecticides there are two kinds, the poisons that are used for chewing or biting insects, and the contact sprays that are used to fight sucking insects. The object of the contact sprays for insects is to stop their breathing pores and kill them, while the poison sprays are taken in to the body with the food.

## HERCULES DYNAMITE



### He Read the "Ad"

He was discouraged. An orchard that he had counted on for a good income was panning out badly. And then, one evening, he was reading the paper that you are reading now. The words, "There'll Be A Difference," at the top of an "ad" caught his eye. He read what was said about planting and cultivating orchards with Hercules Dynamite. At the bottom there was an invitation to write for a book, "Progressive Cultivation."

### He Wrote for the Book

It arrived promptly. After he had read it he had a new "slant" on the planting of trees and the cultivation of orchard land.

He gave Hercules Dynamite a trial. (Although he was a little skeptical at first.) Now you couldn't break his faith in Hercules with a crowbar. A fat balance in the bank is the reason why.

Perhaps you have an orchard that hasn't quite come up to scratch. Or perhaps you are about to plant a new one. In either case take a tip from the fellow above.

Write for a free copy of "Progressive Cultivation." You'll read with especial interest what is said about orchards on pages 17 to 21. Write today. The coupon below is convenient.

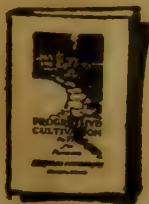
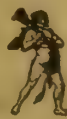


**HERCULES POWDER CO.**

690 Market St.

San Francisco

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Hercules Powder Company,

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Gentlemen:—Please send me a copy of "Progressive Cultivation." I am interested in dynamite for \_\_\_\_\_

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REX SPRAY materials are the result of 20 years of scientific investigation into orchard troubles and 20 years of continuous experience in perfecting products best suited for their control.

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## Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Supplies for Rabbitry

Where can I get orders filled for supplies for rabbitry?—Subscriber.

Any poultry supply house advertising in the Cultivator should be able to fill orders for medicines, conditioners, or general supplies for rabbitry.

### Hemp

Please give us some information regarding hemp; amount of cold young plants will stand, also temperature mature plants will stand; best method of culture. — Subscriber, Warner Springs.

Hemp is being grown quite extensively in Imperial Valley and we doubt not would grow under conditions existing in San Diego County. As to the degree of cold which it will stand, we have no information. As to cultural requirements, we hope to have some more explicit information. There is more interest in this crop since the introduction of a machine which strips the fibre cheaper than can be done by cheapest hand labor. In the valley it is sown much like the corn crops, the fibre maturing in about 100 days. Time of sowing seed there is during January and February, harvesting May and June. After harvesting the land is used to plant sorghum grains. The average crop is around five tons of dry hemp straw, the price promised around \$17.50.

### Brown Leghorn

Is the Brown Leghorn a good chicken for California conditions? Where may one secure Rose Comb Brown Leghorns?—Subscriber, Chowchilla.

As indicated by the showing in producing yards and at poultry shows, the Brown Leghorn is not a long favorite in this state. There are probably hundreds of the White Leghorns to one of the Brown. From this we judge the White to be the more profitable for commercial work. We are not informed as to breeders of Rose Comb Brown Leghorns.

### Eating Grape Fruit and Drinking Milk at Same Meal

Is there danger in feeding young child grape fruit or permitting it to drink the juice at same meal with oatmeal and milk or meal in which milk is part of the diet?—Subscriber.

This question was referred to M. E. Jaffa, professor of nutrition of the University of California. He writes:

"I regret we have no direct evidence of injurious effects, if any, of the use of grape fruit juice in the diet of a child of five to six years old. Sweet fruits are recommended for young children, and we might suggest several reasons for this. Too much acid may retard the gastric juice. Again, under normal conditions, starch digestion continues in the stomach for a certain length of time, say 30 to 40 minutes, until the gastric juice reaches its maximum acidity, when starch digestion will be inhibited, as far as the starch is concerned. The addition of any large amount of acid to the stomach contents might tend to prevent this action on the starch, which action, of course, is very desirable. If grape fruit juice is eaten just previous to mush and milk, then the action on starch just referred to would prob-

ably be stopped, due to the acidity of the grape fruit. Furthermore, grape fruit juice tends to curdle milk quickly, whereas this curdling would go on much more slowly in the stomach under normal conditions. Therefore we see what might be in some cases an added objection to the use of grape fruit juice with a starch meal where milk is included. The consumption of this juice between meals would be entirely different. In the case of adults, the same conditions would obtain, particularly in the case of those with weak digestion. There are many, however, who have absolutely no trouble whatever with the combination mentioned."

### Walnuts on Pecans

Additional information regarding grafting walnuts on pecans is received from Mr. Horton of Fancher Creek Nurseries. He writes:

"The results from grafting pecans on walnuts would in all probability be unsatisfactory as there is no affinity between the two kinds of wood. While in some instances the scions do grow, the trees seldom ever bear. In most instances where scions do adhere the growth is very poor and of an unsatisfactory nature. Therefore, we would not suggest the advisability of working trees in this way under any conditions."

### Not Gum Disease

A citrus grower at Covina recently submitted material gathered from roots of orange trees, wishing to know as to whether it was indication of gum disease. It was referred to Professor J. T. Barrett of the citrus experiment station at Riverside and he writes:

"The material which you sent in for examination, collected in Covina, appears to be nothing more or less than soil which has been permeated with a gummy exudation from the tree. When soaked in water and examined it has every characteristic of the gum in solution."

### Goat not Breeding

What is the matter with does? They will not breed. The fault is not with the male, for I have bought a new one of entirely different stock. Still no results. Does in good condition, not too fat, plenty of green feed, dry alfalfa, bean straw, and beet tops. No grain for nearly a year. Oldest three years old.—Subscriber, Anaheim.

This query was referred to M. W. Howland who answers: "From the meager data it is difficult to answer this query. Is the buck a tested animal? If you are positive he is then the fault is with the does. Have they kidded before? Some grain should be fed, say a pint each daily. It would seem they are not having a balanced ration on the feed mentioned. I would advise turning the does out to pasture if possible and the fault lies with them, then breed them next fall to a buck you are absolutely sure is fertile."

### White Diarrhea

My little chicks are dying. When opened they show a hard lump of egg yolk and their galls enlarged and black, burst in some cases. Some have bowel trouble; others just get lighter and lighter and die. They are three weeks old, what I have left, 17 out of 51. They have been dying ever since I got them. They were high-priced chicks, cost me 22 cents each, so I would like to save some at least. I have raised chicks for 17 years, and I seldom lose one. They have the best of care.—Subscriber



The symptoms are those of bacillary white diarrhea. One or two chicks in a brood like this might die with diarrhea caused by chill, but when the whole brood goes, unless there is gross carelessness in protecting them from chilling, the fault is almost certain to be in the breeding stock. The fact that you have had many years' experience and no doubt understand the care of chicks, leaves little doubt that there is some bacillary infection among the hens that laid the eggs, but in order to be absolutely sure you would have to send a little of the blood of these hens to the laboratory of Agricultural Experiment Station, Berkeley, for examination. If you or the owner of the hens cared to write Professor Dougherty at Berkeley he will tell you how the test is made. The chances are that by this time all the chicks that are infected are dead, and you will have no difficulty in raising the rest.—J. A. K.

#### Native Grasses

I am sending three native grasses, marked 1, 2 and 3. What are the names of each and their value for stock raising?—Subscriber, Crutts.

We referred these to a botanist who answers:

"No. 1 is Panicum urvilleanum, a well known and useful desert bunch grass; Nos. 2 and 3 have no fruit only the bare stalks, so it is impossible to name them."

In sending specimens of plants for naming, inquirers should always be sure and send not only the stalk and leaf, but flowers or fruits as well.

#### Land Value

Will I be required to pay income tax on land valued at \$4000 given to me by my father?—Subscriber, Cutler.

"The value of property acquired by gift, bequest, devise, or descent is not included in income of individuals or corporations, but the income from such property must be included." Bear in mind "income tax" is not in any sense a tax on land values. The gift, if a bona fide gift, may have been \$4000 or \$4,000,000; it would not be affected by the income tax law.

#### Wages of Partnership

A and B enter into equal partnership and buy a ranch. By contract A agrees to live on the ranch and operate the same, for which the firm pays him a stated salary. In the course of A's residence in the community, occasion arises for him, as a matter of policy, to do several days' work for neighbors, for which is paid the prevailing daily wage. To whom does that wage belong, to A personally or to the joint account? There is no agreement that all of A's time is to be given to the jointly owned ranch and he does not feel that the interests of ranch were lost sight of in the work performed for his neighbors. — Subscriber, Visalia.

As this is more a matter of fact than of law it is not referred to the legal department. However it appeals to us that it is simply a matter of wording of the agreement. It seems to us that the employee's time is entirely that of the partnership, and any remuneration received for work off the ranch would be due to both partners, otherwise there would be no limit excepting the desire of the employee to devote his time to earning extra money. In farming it is hardly thinkable that on a farm of any size there would be much occasion for leaving the farm as opportunities for energy and work on every farm seem unlimited so that it should offer fullest opportunity to both partners.

The Central California Bean Growers' Association now includes nearly 500,000 acres in its membership.

#### AFLAFLA GROWERS GROWING

California Alfalfa Growers' Association Permanently Organized. Most of Officers Southern Californians. It is Hoped Membership May Extend Over State.

Thirty-five alfalfa growers controlling 2500 acres met at Riverside last week and organized the California Alfalfa Growers' Association, with 35 signing the constitution. The directors and officers are: President, Dr. E. H. Wood; first vice president, H. R. Moses; second vice president, G. J. Lyttle; secretary and manager, J. L. Farrar; assistant secretary, H. Green. Directors: Hemet, J. B. Hollingsworth; Ethanac, J. T. Crimmins; Perris, H. R. Moses, G. J. Lyttle; Arlington, Dr. E. H. Wood, J. E. Cook; Wineville, H. Green; Chino, F. S. Kimball; Riverside, J. L. Farrar.

One of the members present asserted that under the most favorable conditions alfalfa cannot be produced for less than \$15 per ton, hence the handling of this product so as to secure fair returns will be the object of the next association. A membership fee of 50 cents is charged with an additional fee of 10 cents per acre.

#### NAPA BUREAU RESOLUTIONS

The situation as to feed for live-stock and poultry is certainly most strenuous, and members of the Napa County farm bureau in its regular session called attention in a series of resolutions to the fact that the live-stock and poultry industries of Napa County have been depleted to an alarming extent and as the nation appeals for greater production of meat and,

"Whereas, corn is selling at from three to four cents per pound, and hogs are bringing 14 to 15 cents per pound, live weight, and the farmer would be engaged in a losing business if he continued to produce meat under the existing conditions, and"

"Whereas, we find that this will result in a very serious depletion of live stock on the farms in Napa County."

"Therefore, be it resolved, that we request the state food commissioner to control the prices of grains and other feeds of live stock so that our

farmers may be able to produce meat on the farms and the threatened shortage of meat be avoided."

These resolutions are signed by Committeemen Bentley, Forbes and Martin, and attested by President Dr. Ben Stetson and Secretary Bertha O. Haines.

Berkshire Congress at Davis University Farm, February 21, 22.



## The "BEAN" for Results

A spraying outfit may have all the other virtues you might possibly think of—but if it doesn't drive the spray material onto the trees at heavy pressure, and if it doesn't keep up uniform work—it's a failure, and your time and money are largely wasted. The BEAN gets results. The sturdy Novo Engine and the Matchless Bean Pump drive the material out at tremendous pressure—so that it reaches every crack and crevice — and does the work thoroughly and completely. You should become familiar with the

### 10 Big Distinctive Features

that give the Bean its prominence. You should know about Bean Porcelain-lined Cylinders, the Bean Pressure Regulator, the Pump without a Stuffing Box, Bean Underneath Suction, the Bean Re-filler, Bean Eccentrics, the Bean Rocking Bolster, Bean Direct-connected Engine and Pump, Bean interchangeable Parts, and

#### Bean Threadless Ball Valves

—the valves that cut sprayer troubles in half. Simply ball metal balls revolving on reversible and interchangeable brass seats. No threads to rust, corrode, or stick tight. Can be opened entirely in less than two minutes without lowering the pressure, without stopping engine, without drawing the liquid from the pump.

Check the Coupon. Write Your Name and Address on the Margin and Mail for Our New Catalog.

Bean Spray Pump Co., 212 West Julian Street, San Jose, Cal.  
Send me your Complete Catalog of Hand and Power Sprayers. I have ..... acres of ..... trees.  
I am interested in Hand Pumps ..... Power Pumps

## BEAN SPRAY PUMP CO.

212 W. Julian S.

San Jose, Cal.

## PLANT TREES

Do your "bit" toward insuring a supply of food for the world's millions.

The best varieties of trees are selling out fast.

Shipping Plums, Prunes, Cherries, Pears, Olives, Almonds, Apricots, Peaches—all are equally profitable according to your location. No other investment their equal.

Our foothill trees are free from the root diseases common to other localities. Pedigreed parentage—roots fibrous and well branched—trees hardy and of toughened fibre—features that spell success in tree planting, and in your orcharding.

Submit me a list of your wants for special quotations. Do this now while our assortment is complete. Mail your list right now to Dept. J

Remember! We will take your Liberty Bonds in full or partial payment for trees.

J. E. Bergtholdt  
Sec. & Mgr.

**SILVA-BERGTHOLDT CO.**  
NEWCASTLE-CALIFORNIA



Foothill grown trees are immune to crown-gall and root-knot

Roots such as are grown only on our foothill soil and location THEY ARE TREE INSURANCE





## Economy never means neglect

**I**F your house, barns, cribs, implements and other farm equipment need painting, then painting is imperative. Delay means decay and decay means loss. The Sherwin-Williams Company have been making paints and varnishes for the farm for fifty years. Every farm surface has been studied and a special finish made for it. This "right finish for every surface" gives you a wearing quality that makes the first cost of the paint unimportant.

Do not get just a can of paint—get the specially made Sherwin-Williams finish for the particular surface to be painted. Your dealer will supply you.

## Save Your Crops with Sherwin-Williams Arsenate of Lead AND Dry Lime Sulfur in powdered form

These insecticides are deadly to pests but harmless to growing trees and plants. Being dry powder, they cannot freeze, leak or deteriorate when carried through the winter. In using, just add the powder to water.

It dissolves instantly and stays mixed, spreading easily over the foliage and sticking fast. Ask for Sherwin-Williams Dry Powdered Arsenate of Lead and Lime Sulfur at the store. Spraying booklets sent free on request.

# SHERWIN-WILLIAMS

## PAINTS & VARNISHES

INSECTICIDES, COLORS, WOOD PRESERVATIVES, DYES AND DISINFECTANTS

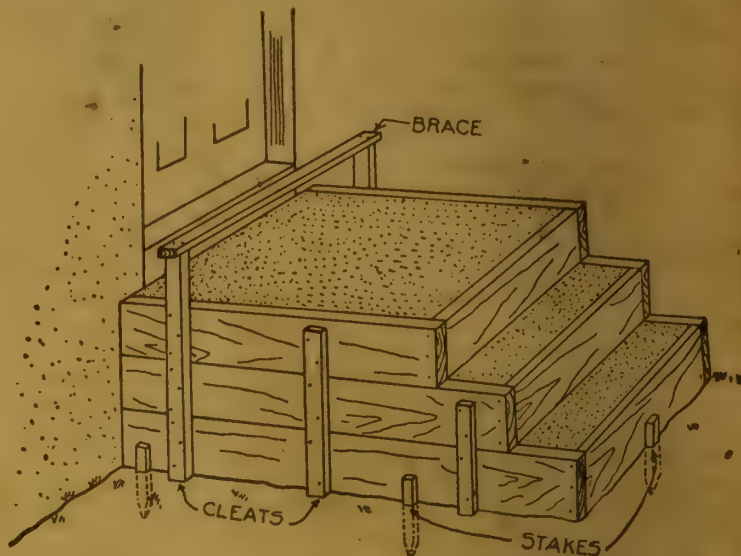
## Simple Concrete Step Construction

Steps are not only subject to hard usage, but when constructed of wood with the lower part in contact with the ground and subject to alternate wetting and drying, decay is very rapid, making them unsafe and dangerous. Steps at the rear or kitchen entrance of the house encounter especially hard usage, but it is a very easy matter to have them durable and safe by constructing them of concrete. A simple method of doing this is shown in the accompanying drawing. The three forms consist merely of that many boxes open at top and bottom and also at the end adjoining the door-sill.

A rise of eight inches and a tread of ten inches will be found convenient. For this reason the height of each box should be eight inches, since every box will form a step. All of the boxes should be of the same width, but each

ately, being careful that no dirt or other foreign matter falls or collects on the surface of the first batch of concrete, as this would prevent a good bond between the two layers. Finish this step or slab in exactly the same manner as described for the first step. The last or third step is constructed in exactly the same manner as those previously described.

The brace between the two back cleats is for the purpose of preventing the boards from spreading at the side next to the wall. The outer surface of the top step is carefully leveled off with a straight-edge and finished by troweling to a smooth surface. Excessive troweling, however, must be avoided. Not more than a half hour should elapse between placing the concrete for each step so that the concrete first deposited will not harden and set up before the next form is



Concrete Steps  
Simple method of placing planking forms for steps.

one is ten inches shorter than the one beneath it, thus forming the tread of the step. If the steps are few in number and not too wide, one inch boards will be stiff enough to hold the concrete without bulging, but if there is any doubt about this it is better to use two inch plank. The concrete for the steps should be mixed in the proportion of one bag of Portland cement to two and a half cubic feet of clean coarse sand to four cubic feet of crushed rock or pebbles. The earth beneath the steps should be excavated to a depth of six inches below the surface, the excavation being the exact size of the bottom of the steps. Make sure that the earth is level and compact at the bottom of the excavation. Place the largest box in position around the edge of the excavation, staking it in place at two or three points to prevent shifting. Level the first box carefully by means of a carpenter's spirit level. The concrete, mixed rather dry, should be deposited in the box and thoroughly tamped and compacted until moisture rises to the surface. Work or spade the concrete thoroughly along the sides of the forms so as to produce a smooth surface. At the front end of the box, where the concrete becomes the tread, the surface of the concrete is carefully leveled off and smoothed with a trowel for a distance of about 12 inches from the outer edge. Immediately after this is done the second and smaller box is placed on top of the first one, being fastened thereto by a few nails through the upright cleats shown in the drawing. The nails must not be so long as to project through the forms and into the concrete. Fill the second box with concrete immedi-

filled. After the steps are about one week old, the forms may be removed and the steps used. After the forms are removed any roughness or irregularities may be smoothed down and the surface of the entire steps finally finished by rubbing with an old piece of emery wheel and water or carborundum and water. Where the work includes many steps, a hollow space is generally left under the main body of the steps to effect a saving in materials. Where this is done the platform and steps are reinforced with steel rods or heavy wire mesh to prevent cracking.

### ANT POISON

Another formula we have repeated in our columns is that for ant poison, which has proven remarkably effective. There is one serious objection to it in that it is so simple of compounding that many think it will not prove effective. Try it.

Fifteen pounds sugar, seven and one-half pints water, one-fourth ounce tartaric acid. Boil 30 minutes and cool. Three-quarters ounce sodium arsenate. Dissolve in half pint hot water. Cool. Mix together and add one and one-half pounds honey.

Fifteen pounds of sugar looks alarming, but for purposes of this kind grocers will allow purchases larger than for household use.

Cut away all broken, bruised or diseased roots from the trees you are planting, and do it with a sharp knife, making a smooth cut. Cut back the top and little branches to balance the roots.

Riverside County's farm adviser has closed a busy two weeks' series of farm center meetings.



## Another Angle of the Farm Labor Situation

Written for California Cultivator by R. S. Vaile

There is apprehension of a serious farm labor shortage in California during the coming crop season. That this apprehension will have an effect on the total area planted to crops must be evident to anyone familiar with farming sentiment, unless some definite scheme to insure relief is adopted and made public at once. Not the least persistent suggestion for relief is the importation of Chinese laborers in large numbers with military-like organization, and under strong leadership and control. The feature of this suggestion which appeals to the writer is the argument that we permit bands of Chinese, amounting to several thousands in number, to come into our country for the few years of war emergency; that we keep them together in units of moderate size; that we teach them not only our methods of farming, but that we have definitely organized night schools at public expense to

teach them the rudiments of the English language, the ideals of our Western civilization and the broad principles of a Christian democracy. It is easily conceivable that these thousands of Chinese, taken from among the young men of China (possibly from the same range of ages as our draft army), returning to their homes at the close of the emergency, might serve as a stronger leaven in the development of a new era in China than all other outside influences combined.

The writer desires, however, to apply the same arguments to another case. There are certain farming concerns in Southern California that have built up a policy of human helpfulness to the Mexican laborers, merely as a private proposition and largely on commercial grounds. These attempts have been successful in practically eliminating labor troubles, and to the mind of the writer, they stand as a demonstration of the possibilities that

exist for wise, sympathetic state leadership. If 10,000 young Mexicans could be brought into this state as laborers, given good accommodations, taught certain rudiments of fair play, justice and loyalty, and then returned to Mexico, their influence would be incalculable.

### IT PAYS TO FERTILIZE

The University of Illinois has been doing some extensive investigating as to the effect of fertilizers on grain crops. Illinois is a great wheat state, so we refer to one particular experiment conducted on lands which were yielding about eight bushels of wheat per acre. Limited fertilization increased this to about 15 bushels, then 20½, 28, 32, and even on up above 44 bushels per acre. A card is sent to wheat growers, giving all particulars of the experiment in ten different fields, in every one of which there were checked places in which no fertilizer or other soil treatment was given other than crop rotation. Then a plot was treated with farm manure, another with farm manure and limestone, yet another with limestone, manure and phosphate rock, etc.

One field showed in its check plot a production of 11.8 bushels per acre. With farm manure applied it produced 12.2; with manure and limestone, 25.8; manure, limestone and phosphate rock, 32.8; crop residue, lime-

stone, and phosphate rock, 44.2 bushels. This was a larger return than most of the fields, the averages of which were in check plots, no treatment except rotation, 6.7 bushels; farm manure, 10.2; manure and limestone, 22.9; limestone, manure and phosphate rock, 27.4.

These experiment fields are operated by the University of Illinois. The farm manure is applied in proportion to previous crop yields. The crop residues include corn stalks, straw, clover chaff, and cover crops (as sweet clover seeded with small grain and plowed under the next fall or the following spring before planting corn). Yearly acre-rates of applications are 1000 pounds of limestone, 500 of raw rock phosphate, and 200 of kainit; or 4000, 2000, and 800 pounds, respectively, every four years. (The initial application of limestone is usually four tons per acre. After four or five crop rotations, the phosphate application may be reduced to 200 pounds a year).

The average increase of 5.2 bushels of wheat from 500 pounds of rock phosphate on these ten fields may be compared with 4.2 bushels from 200 pounds of bone meal on two of the fields, which are located on southern Illinois soils. An increase of 4.2 bushels was obtained in 60 tests involving duplicate trials which extended over a period of 15 years.

Riverside's banner car of Navels for this season sold in Winnipeg for \$1953.

## Poison for Squirrels

Here it is again!

We have given this formula several times, but in view of the present campaign against ground squirrels in practically every county of the state, it is of much value. This formula for poisoned grain is the one used by the biological survey and other federal departments and county and state organizations which have united in the campaign of squirrel eradication. This formula is taken from sheets being supplied by County Horticultural Commissioner Wood of Los Angeles County:

### Directions for Poisoning California "Digger" or Ground Squirrels

Barley (clean grain), 16 quarts; strychnine (powdered alkaloid), one ounce; bicarbonate of soda (baking soda), one ounce; thin starch paste, three-quarter pint; heavy corn syrup, one-quarter pint; glycerine, one tablespoon; saccharine, one-tenth ounce.

Mix thoroughly one ounce of powdered strychnine (alkaloid) and one ounce of common baking soda. Sift this into three-quarters pint of thin hot starch paste and stir to a creamy mass. This starch paste is made by dissolving one heaping tablespoon of dry gloss starch in a little cold water, which is then added to three-quarters pint of boiling water. Boil and stir constantly until a clear thin paste is formed. Add one-quarter pint of heavy corn syrup and one tablespoon glycerine and stir thoroughly. Add one-tenth ounce of saccharine and stir thoroughly. Pour this mixture over 16 quarts of clean barley and mix well so that the grain is coated.

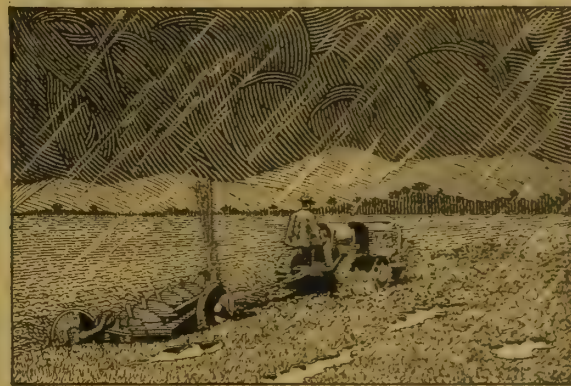
For mixing small quantities an ordinary galvanized washtub is convenient. For larger quantities a tight, smooth box may be used and the mixing be done with a spade.

Each quart of the poisoned grain is sufficient for 40 or 50 baits. This quantity scattered along squirrel trails or on clean hard places on the surface about the holes will not endanger stock.

**N. B.**—Strychnine in any form other than the powdered strychnine is not effective in the above formula.

**Caution:** All poison containers and all utensils used in the preparation of poisons should be kept plainly labeled

and out of reach of children and irresponsible persons and livestock.



## no limitations of weather

Wet or dry; hot or cold; the Yuba Ball Tread tractor glides over any ground.

The Yuba owner is first in the field in the Spring—and works as late as he desires.

He has no trouble starting the Yuba on a cold morning—it obeys orders like a soldier—instantly.

No matter what job on the farm comes up requiring a power plant—the Yuba is the efficient ma-

chine—sturdy, strong and requiring little repairing—it's the constant-working that commends it to practical farmers.

The YUBA will pull a plow any place a plow should go.

Yuba Manufacturing Company		Dept. B9
433 California St., San Francisco, California		
Gentlemen: Kindly send me catalog and prices on the Yuba Ball Tread Tractor.		
I am interested in Model 12-20		Model 20-35
Name _____		
Town _____		State _____
P. O. Box _____		Size of farm _____
_____ Fruit	_____ Rice	_____ Grain
_____ Grapes	_____ Hops	_____ Alfalfa

The Yuba Pump Catalogue and the Tracover Booklet will be sent on request.

## Yuba Manufacturing Company

Factories at Marysville and Benicia, California

433 California Street, San Francisco



Established 1877 Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

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Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916Published By  
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J. W. Mills	Louis B. Stanton
	Dr. Wm. Petrie

Live Stock: W. S. Guilford, C. L. Hughes, C. A. Briggs.


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**Saturday, Jan. 26, 1918****OUR ADVERTISERS RELIABLE**

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

State after state has enacted its sheep protection laws in which the dog has been named the culprit, and, unfortunately, some dogs do get out by their "wild, wild lones" and many sheep are found dead the next day. As there are folks and folks, so there are dogs and dogs, and while there are culprit dogs, there are more whose faithfulness has been proverbial. We believe our cover could show no truer friend of man than it shows this week, ready to serve at a minute's notice.

**CHEAPER FEED**

Reports of receipts at the stockyards of the United States in which there is comparison of the two years, 1917 and 1916, show that 1916 made far greater deliveries than 1917. We have report from the bureau of markets for only the first nine months of 1917, but in every one of the larger packing centers during that period the 1916 deliveries far exceeded those of the corresponding nine months of 1917.

Asked why, a hog feeder makes response that at present prices of hogs it is only the shrewdest feeder who can turn this high priced feed into pork and not be ruined in the process. We must produce more pork, and our hog producers and conservationists generally must aid in the problem. The first step is for the farmer to take, and that is to produce more of his own feed. Some are situated so that they can do this.

**GROW BEETS**

Beet growers are planting beets. The committee on its return from Washington gave assurance to the growers that the food administration will guarantee satisfactory prices. The

work of the committee on arriving at Washington was made much more effective by thorough cooperation of all western senators.

There are many details to be worked out between now and harvest time, but the first step to take is to plant beets, and we trust excellent returns will be secured from every one concerned in the industry.

The world is suffering for sugar and our little five pounds per purchase in this country is only a very limited indication of that suffering. Like many other things sugar is not appreciated until it is allowed to prove its worth by its absence. Sugar and fats are now realized to be far more important in the world's energy than was ever realized before.

**YOUR MONEY OR YOUR LIFE**

One of the Camp Kearny soldiers in addressing a bunch of business men suggested that the boys at the camp were prepared to match their lives against the dollars of the business people of the world in the campaign for extending liberty and maintaining the liberties we have. He referred to the spirit which prevails amongst the boys; they are willing to do and to dare anything at the command of the officers, and the intelligence of American boys will prove a factor in making the wonderful fighting army which is being whipped into shape. But he did appeal for the sake of the spirit of those boys and to give them knowledge that there was "a man behind the man behind the gun," that when liberty loan number three is offered, that the American people show their spirit by the manner in which they subscribe for that loan. It is not long before loan number three will be before us. Let us be ready for it. Meanwhile there are thrift savings stamps.

**TRACTOR SCHOOL**

Those who are within reach of the University Farm School at Davis, where practical tractor training under expert direction may be secured, are fortunate. This school will prepare many a man to serve his country in ways other than carrying a musket. Tractor experts are to be transferred from the university farm to Southern California for one week in February. That week will be used to advantage by many who are desirous of getting practical experience so far as they can within the limited time.

The announcement of this short school has brought to the Cultivator inquiry as to where one may have the advantage of expert advice without going to the northern end of the state. There are auto schools which have been conducted for years, which have proven most satisfactory in fitting people for driving and caring for their own machines. People who are far removed from the state university are appealing for these advantages in respect to tractors to come nearer. Sure it is, the university is so far from the boundaries of California that were we in the East we would have to cross several states to reach it.

**STOCKYARDS**

A report from the bureau of markets gives comparison of the first nine months of 1917 with the same period of 1916 as to number of head of stock received at various stockyards of the United States. There are reports from stockyards in nearly 50 states. The larger packing centers, Chicago, Fort Worth, Kansas City, Omaha, and a few others show im-

mense receipts. Some show receipts of millions of cattle; some millions of hogs within the nine months. But there are other points like El Paso, Evansville, Indiana, and even Logansport and Spokane, smaller than several of the cities of California, with their stockyards giving advantages to live stock producers, yet the name of no city in California appears in the long list. Why? Simply because there isn't a stockyard in the state, and the live stock industry which we are all endeavoring to push to its utmost in these times of need languishes instead of growing.

Last week's Imperial Valley papers gave account of cars of stock being shipped to Eastern packing centers. Close observers of market reports a few weeks later will perhaps see chronicled the fact that the bacon, lard and other products from that pork are being shipped back to California. Yet our railways are congested. There is abundant opportunity for efficiency in these United States. This opportunity should be made the most of.

**RING TRUE**

The farmer today is not exactly resting on flowery beds of ease. He has been accused of being a money maker, even of being a grafter and demanding high prices for his produce, which have been paid by the poor people only because they must. Other similar boquets have been tossed to him until he feels like asking to be shown some of the good things he is accused of grabbing.

It is true that there is hardly a farm product but commands today nearly double the price of a few years ago, but we must use horse sense in the consideration of the factors necessary to their production. It is a wise farmer who can look ahead and be sure of getting a profit from any particular crop. Last year beans were planted; wheat was planted; other staples which would aid in feeding the world were planted. Prices were fixed; there was the uncertainty which comes because of other possible price fixing, and now the grower is in anything but a comfortable frame of mind. Price fixing was resorted to a few days ago in the effort to bring stock feeds within reach of the live stock feeder, but after the price was set and the cost of sacks, overhead, and a few other factors computed, it was found that the prices fixed were practically the same as markets had been quoting.

The sugar beet grower did his best in an unfavorable year to produce sugar, and failed to make the cost of his crop; the manufacturers made millions. These latter admit it was a very satisfactory year but call attention to the fact that other years were not so satisfactory. This may be true, but as the situation stands the grower takes all the chances, and that over a period of many months, whereas the manufacturers can cold-bloodedly face only a few weeks' campaign with absolute certainty as to returns. So far the food administration has seemed unable to meet the situation and induce manufacturers to be entirely fair to the producers.

The great point is to win the war. Win or be Belgianized. The awful cruelties of the Prussians have ceased to be "English lies" and have become such realities that America shudders when the bringing of the war near home is suggested.

Hoover said: "If we discontinue food exports to the Allies we will move the German line to the Atlantic seaboard."

So, "Produce more — Save more," must be our slogan.

While a farmer cannot long produce a dollar's worth of pork with feed worth \$1.25 nor sugar with beets grown at a loss, yet he must produce food and help save the world. How? It's for him to decide and, incidentally, it's for the food administration to lend its powerful arm to the task.

It's doing it, but, Folks, we're facing some awful long questions these days. Let's all ring true.

**This Week's War News**

England has two meatless days each week.

Four deserters from Camp Kearny were arrested in Los Angeles on Tuesday.

Line in northern Italy has been pressed back still farther by the troops of the Italians and Allies.

Women of the British labor party of England in convention appealed for league of nations to maintain peace.

The Constituent Assembly met in Petrograd; opponents of the Bolsheviks secured control when the "Bolsheviks left the hall" and the assembly was dissolved.

Conditions in Palestine remain the same, excepting that the English troops have strengthened lines and advanced slightly to more advantageous positions.

Starving Germans in Berlin in riot throw busts of Hindenburg to the ground, and it is reported more than 21,000 deserters from the army have been imprisoned.

The rumor that Vladivostok is in possession of the Japanese continues to bob up, but it is denied by Japan. There are Japanese war vessels in the harbor prepared to protect Allied interests.

Reports from the International Institute of Agriculture indicate that the coming season's crops in Europe will spell famine and starvation for millions and that the greatest responsibility rests on the United States.

On the French and Belgian fronts there have been no actions of importance, though in sector occupied by American troops artillery dueling has been almost continuous with occasional casualties to American boys.

United States government has entered into contract with Holland for the use of a large number of her merchant marine which were lying idle in this country, contract specifying these particular vessels not to be used in the war zone.

"Patriotic criticism" is becoming more general in congress and on the outside ex-President Roosevelt and others have joined in the "contest." There is demand for a shake up in the war department. The president insists Baker will yet make good.

Engagements between British and Turkish cruisers in action in the Dardanelles resulted in the sinking of the Breslau and the beaching of the Goeben, two German war vessels which before the declaration of war by Turkey were "purchased" by her.

Police and federal authorities have raided many I. W. W. headquarters and places where spies congregate and many arrests have been made. Apparently there is a nation wide drive on spies and deserters. The editor of a German paper in South Dakota has been placed under arrest.

Apparently Austria and Hungary are facing a terrible crisis. Riots occur daily in Vienna, and the people are sending up one continual cry for peace. Count Czernin and his entire cabinet have resigned, and it is rumored that Emperor Charles is anxious to make a separate peace.

The coal famine in nearly all Eastern states has been lessened by Garfield's drastic order closing all factories not absolutely necessary for public service or for war purposes for a period of six days and each Monday to come. There is still much suffering and the coldest season in years prevails.

Russian conditions have gone from bad to worse. The Ukrainians of South Russia have set up a separate government with Kiev as capital, have made a separate peace with Austria. The Bolsheviks still control Petrograd, have caused the murder of many opponents, arrested and imprisoned the minister of Roumania, with protest from America and ambassadors of other nations, and a condition of chaos obtains in Petrograd, Moscow and all other sections.



# Agricultural News Notes of the Pacific Coast

## Northern California

Sutter County has over 2000 acres of bearing almonds.

Pear growers are spraying with sulphur to prevent scab.

A farm center has been organized at Thermalito, Butte County.

California Wool Growers will organize a cooperative marketing body.

Raisin growers of Sutter County are signing up the new contracts with the Associated.

The county clerk of Sonoma County recently paid bounty on eight coyote scalps in one day.

Glenn County farmers are appealing for sufficient water to cover 10,000 acres of rice land.

The Sacramento County farm bureau is canvassing the county for selected sorghum grain seed.

Orange growers of Butte County anticipate approximate average per box for Navels shipped around \$2.40.

Humboldt County dairymen recently met at Ferndale and enjoyed a banquet and a good time generally.

The tonnage of Cling peaches of Sutter County has increased from 9000 in 1915 to more than 17,000 last year.

The state and the federal government unite in the building of levees along the Feather River in Butte County.

Purchases of pure bred made at the International Live Stock Show at Chicago for the University Farm at Davis are arriving.

Vacaville Fruit Company at its recent annual elected officers and reported that one concern shipped 242 cars of fruit into 49 markets.

The Tehama County Cattle Growers' Association recently met in annual session. The president for the coming year is Theo. A. Spencer; secretary, D. B. Lyon.

A rice producer of Biggs, Butte County, realizing that every grain should be saved, put a force of men at gleaning after harvest and secured 380 sacks, or \$1200 worth.

Shasta County's new farm bureau held its first meeting at Anderson, December 29. Farm Adviser Talbot is planning a demonstration of preparation of raw land for irrigating.

Sacramento Valley experimenters claim they can grow a bale of cotton and \$100 worth of seed from a plot of land, which proves the Sacramento Valley fitted for cotton production.

The State Wool Growers met in convention at Davis last week. F. A. Ellenwood, for years secretary, was named president, and Prof. R. S. Miller, secretary; C. A. Kimble, vice president.

County Horticultural Commissioner Mills of Butte County has issued warning to fruit growers that stock will not be admitted to that county from sections infested with peach root borer.

The annual meeting of the Humboldt County Dairymen's Association was the occasion of a banquet and review of annual business. The president for the next year is H. F. Harbers; secretary, Robert Flowers.

The Ward Bulb Gardens in Humboldt County are attracting more attention than ever, and it is thought these gardens may aid in the production of bulbs which have heretofore been largely secured from Germany and Holland.

## Central California

One Stanislaus County cherry tree netted \$50.

Owners of cattle brands must register prior to February 1.

The creamery at Modesto is now manufacturing Edam cheese.

Turlock is agitating for the installation of a new storage reservoir.

A large tract of wheat land at Oakdale is to be changed into a dairy ranch.

Tulare County's citrus shipments total about 40 per cent of those of last year.

Irrigationists of the Terra Bella district find the cost per acre-foot to be \$6.80.

Tulare County expects to finish her 220 miles of county paved highway within the year 1918.

Tulare County will hold examination for candidate for horticultural commissioner, February 2.

A Modesto creamery man received the highest scoring at the recent state butter scoring contest.

The lack of rain is causing serious losses to stock men in all portions of the San Joaquin Valley.

Every fig grower of the state is desired to join the new association recently organized at Fresno.

Arizona cotton seed is being brought to Stanislaus County for extensive cotton growing tests.

The Oakdale, Stanislaus County, creamery has paid to its patrons over \$200,000 during the past year.

The recent rainfall was sufficient in some sections of the valley to permit shallow plowing for grain crops.

Stanislaus County's campaign on squirrels is in full force and will continue until the middle of February.

The Modesto Farmers' Union has elected J. H. Hardie, president and Mrs. Chas. T. Whitmore, secretary.

It is now reported that Germany expects immense quantities of wheat and other cereals from southern Russia.

Stock Inspector Griffith of Kings County reports stock of the county in good physical condition with no anthrax.

Bean growers of the San Joaquin Valley are holding a series of meetings and planning a marketing organization.

The sugar shortage has been materially relieved and it is now expected that the allotment will be materially increased.

The castor bean propaganda is now affecting Central California and farm advisers are endeavoring to secure cultural information.

The land settlement board is still discussing purchase of tract of 5000 acres or more, and it is thought an early decision will be made.

R. L. Adams of the University of California has been made farm labor specialist for California in the national campaign for more efficient labor.

"Education, legislation, cooperation" was the slogan of dairymen in attendance at the mass meeting of dairymen of Central California held at Modesto recently.

The Grange Patrons of Husbandry at Aromas recently met in annual session and installed officers for the coming year. The installation was done by Past Master F. H. Blohm.

## Southern California

The Covina citrus district received over \$2,000,000 from last year's citrus crop.

"Pima Cotton" clubs are being organized in the high schools of Imperial.

Hueneme, Ventura County, is planting tomatoes for the coming canning season.

Southern California alfalfa growers are taking the lead in organizing a state marketing association.

Brawley's output of produce for one week aggregated 132 cars; of milo, barley, hay, lettuce, cotton, etc.

The annual meeting of the Tri-Counties Reforestation Committee was held at Orange, January 10.

Walnut growers of Orange County recently made an auto trip through walnut groves of Ventura County.

The Central Lemon Association of Villa Park has elected W. E. Gurton, president, and E. B. Collier, secretary.

The ice plant at Coachella, Riverside County, is being enlarged. It will have a storage capacity of 2000 tons.

Forty employees are busy handling pickled olives and olive oil at the big Lakeland Ranch, Elsinore, Riverside County.

Calexico, Imperial County, is planning a new ice plant, calling for an investment of \$150,000. It will have 50 tons daily capacity.

San Bernardino County produced in 1917, according to annual crop report of County Horticultural Commissioner Coy, \$17,212,862.

San Luis Obispo County live stock men are discussing ways and means for securing feed for 150,000 cattle. Many have already died.

The California Lima Bean Growers' Association has materially increased its membership. Over 80 per cent of its 1917 output has been marketed.

Directors of the San Bernardino County farm bureau have endorsed a movement to establish a branch of the university farm school at Riverside.

The shortage of Navel oranges fits itself to the shortage in cars. The total output will be larger than anticipated because of immense size of most of the fruit.

Even the shells of cull English walnuts are utilized for war purposes after the nuts have been cracked and the meat extracted. They command about \$8.00 per ton.

Special trainloads of Imperial Valley live stock have been sent to Eastern packing houses. The prices are more satisfactory to producers than Coast packers are paying.

Earl L. Morris, formerly of Santa Clara County, has been appointed horticultural commissioner of Orange County in place of Roy K. Bishop who has held the position for eight years.

Specialists of the department of agriculture are endeavoring to determine what becomes of the ladybirds released every year in the Imperial Valley melon fields. The state insectary will unite with the federal specialists in this study.

The contention between sugar beet growers and factory people is still unsettled although Washington has agreed to take a hand in price fixing. The growers are asserting: "The government should forthwith assume control of the sugar refineries as a war measure."

## The Coast and General

Idaho dairy products for 1917 totaled nearly \$8,000,000.

A new cheese factory is to be installed at Gold Beach, Oregon.

Pacific Coast organizers for the third liberty loan are already in action.

California's total fresh deciduous fruit shipments aggregated 24,628 cars.

The output of bituminous coal mines has been increased by about 500 cars daily.

Lane County, Oregon, will increase its acreage of beans from 600 last year to 3300 this year.

One of the most abundant fruit trees along the coast of Hawaiian Islands is the mangrove.

Leo. L. Laythe is the new county agricultural agent for Pima and Pinal Counties in Arizona.

Assessors of Idaho have united on a valuation of \$8.00 per head and \$6.00 per hundred pounds on hogs.

The late December freeze in Florida did not destroy all the truck crops, and limited shipments are now being made.

There will be a session of the International Irrigation Congress held next year; the place not yet announced.

On account of lack of pasture sheep men of Oregon are planting more largely to grain and reducing the number of sheep.

Prune growers of Oregon are endeavoring to have the war department put Oregon prunes on an equal basis with California prunes.

With all rolling stock so far as possible used in transporting coal, a temporary shortage in cereals has been suffered by many of the Eastern states.

Entomologists connected with the department of agriculture at Honolulu are making a special study of fruit flies and parasites which may be introduced.

The United States circuit court of appeals has upheld the reclamation service and protected its appropriation of waters for the Yakima project in Washington.

The Arizona council of defense is endeavoring to save the grazing on state lands of that state for home herds and is asking the stopping of importation of animals for grazing on these lands.

Implement dealers in convention have ruled that hereafter there shall be no more left-handed plows built. There is only a small section of Indiana and Ohio where there is demand for left-handed plows.

The Oregon State Agricultural Society held a most interesting meeting at Salem the early part of December. Among other resolutions passed was one asking the Oregon agricultural college to make a survey of the state with a view to furnishing expert advice as to locations best adapted to various crops and to canning establishments to care for them.

The order of Fuel Administrator Garfield that nearly all factories east of the Mississippi, consuming large quantities of coal, should close for five days and on each Monday for a period of ten weeks is being responded to by nearly all manufacturers in a true patriotic spirit. This order was made to secure the distribution of coal already mined, which distribution was prevented by congestion of traffic.



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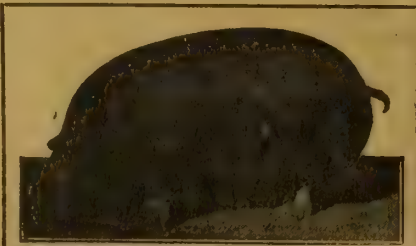
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## Who's Who

With the issue of August 11 the Cultivator started its series of "Who's Who" articles to bring before its readers some of the livestock producers of California who are responsible for the large development of the industry. Where did they come from and how long have they been engaged in California development, also how do they look, so pencil and camera are to be used, and some homely, everyday photographs and notes regarding them will bring us closer together. Bear in mind we say "homely photographs" and not photographs of homely people. The idea we wish to convey is that so far as possible we will secure photographs in everyday surroundings at the homes of the livestock producers.

Written for California Cultivator by C. A. Briggs

### FRED D. ROSS



MONG the younger breeders in the state none are more deservedly popular than Fred D. Ross of Hanford.

He is enthusiastic over the merits of his chosen breeds, Holstein cattle and Poland-China hogs, and is throwing all of his energy into their improvement.

Mr. Ross was born in the Keystone State (Pennsylvania) at Beaver Falls. He is 41 years of age. After leaving his native state he lived a number of years in Kansas, but has spent more than half his life in California in Kings County and in Hanford. His opinion of that section of the state, where alfalfa, tall Indian corn and mammoth pumpkins grow, is that no other part of the state can quite equal it as a stock country. And at that he's not far wrong. Previous to his taking up farming and stock breeding Mr. Ross had a business training that helps him in his chosen life work. At the time he gave up what we usually call business to engage in the most important business of all—farming—he was treasurer of the H. G. Lacy Company, who conduct the electric light and power company and operate flouring mills at Hanford.

He has a fine home, a good equipment of farm buildings and 140 acres of the rich land that goes to the making of "The Little Kingdom of Kings." Everybody likes him and everybody calls him "Fred."



Fred D. Ross

## Rice Straw

Regarding rice straw, there is a large opening for livestock people in the Sacramento Valley or any section where it is grown, but as to baling and shipping to far away sections it is probable that it is hardly rich enough in food values to justify. We wrote to Secretary Beard of the Sacramento Valley Development Association and he answers as follows:

"Replying first to the inquiry, I beg to state that it will be practically impossible to get any rice straw delivered at Los Angeles, first, because little of it has been baled; second, because of the difficulty in securing cars. The Dodge Rice Company at Chico has some baled straw. They quote the price \$12.50 per ton f. o. b. (S. P. or N. E. Ry.) Durham Station, but inform me that they think it will be practically impossible to secure any cars.

"At the time I wrote Mr. Nares about the use of rice straw for stock great quantities of straw still remained in the rice fields in stacks as left by the stationary threshers. Much of it has since been burned, and I do not know at this moment how much may still be available for use to those able to reach and secure it.

"Rice straw in the field can be had for a very nominal price. I have been buying it for my ranch near Marysville, paying \$1 per load in the field. In season any quantity of it could be had for this price or even less, and what the stockman should do next year is to get into the field when threshing is in progress, secure their straw and make all proper arrangements for connecting it up with their feed yards, which might involve moving the cattle to the straw.

"Rice straw makes a very good feed where some green feed is available to

go with it. The Dodge Rice Company feed it to their work stock with barley, and Mr. Jacobson, manager, told me a few days ago that some contracting firms in that vicinity are feeding it to work stock with success.

"There was planted to rice in this state last year approximately 81,000 acres, the greater part of it in the Sacramento Valley, and it is safe to say that the average production of straw is at least one ton to the acre.

"The rice growers are not usually stockmen, and as they have not yet developed any profitable market for it they have been burning it in order to get it off the land.

"The existence of this supply of feed, which will no doubt increase rapidly in quantity from year to year, should certainly be taken into account by the livestock growers of the state as it affords a new and, under proper conditions, cheap feed."

### ANGORAS MORE POPULAR

The Arizona Angora men, realizing the importance of the mohair industry to that state, have organized a state goat raisers' association of which T. L. Morris is president. There are in Arizona nearly 300 Angora breeders, and these men own somewhere around one and one-half million goats. It is asserted that the number of Angoras in the state has more than doubled in the past 18 months. With mohair around 65 and 70 cents and Angora mutton more appreciated, it is anticipated that still greater increase will be observed in the industry.

### MOHAIR GROWERS

The National Mohair Growers' Association recently held its annual convention at El Paso, transacted its annual business and elected U. S. Grant, president, and F. O. Landrum, secretary. Phoenix, Arizona was selected as the place of meeting for the 1918 convention to be held at the time of the state fair.



## Farm Curing of Meats

By W. V. Cruess



IN SPITE of the present high price and demand for meats there has been a pressing demand for information on the home and farm curing of pork and beef. To furnish this information the recipes given below have been assembled. They have been tested by the United States department of agriculture and were published by the department. The publication is, however, now out of print and cannot be found in either United States Department of Agriculture or University publications.

### Home Curing of Plain Salt Pork

(a) Prepare a clean hardwood barrel by thoroughly scrubbing the inside with hot water and washing soda or a little lye and rinsing thoroughly with water. Syrup barrels, alcohol or whisky barrels that are still sound and sweet may be used. A large stone-ware crock is also suitable.

(b) The meat must be properly and thoroughly cooled, because if salted before the animal heat is out the shrinkage of the muscles causes the retention of injurious gases giving off an offensive odor to the meat. It must not be frozen because the salt will then not penetrate. Ordinarily 24 to 36 hours cooling after slaughtering will be sufficient.

(c) Cut the carcass in pieces about six inches square. Rub each piece with fine salt and pack closely in a barrel. Let stand overnight.

(d) The next day weigh out ten pounds of salt and two ounces of saltpeter to each 100 pounds of meat and dissolve in four gallons of water. Allow this brine to cool thoroughly.

(e) Cover the pork completely with this cold brine and weigh it down with stones or other heavy weights to keep it completely immersed. The pork should be kept in the brine till used.

### Corned Beef

(a) Cool the carcass thoroughly but do not allow it to freeze. Cut in pieces about five or six inches square. The cheaper cuts such as plate, rump, cross-ribs, brisket, etc., are usually used. Fat beef gives better results than too lean meat.

(b) Weigh and cut meat carefully and allow eight pounds of salt to each 100 pounds of meat. Sprinkle a layer of salt one-fourth inch thick in the bottom of the barrel. Pack in as closely as possible the cuts of meat making a layer five or six inches thick. Then put on a layer of salt, following that with another layer of meat. Repeat until the meat and salt have all been packed into the barrel, care being used to reserve salt enough for a good layer over the top.

(c) After the package has stood over night add for every 100 pounds of meat four pounds of sugar, two ounces of baking soda, and four ounces of saltpeter dissolved in a gallon of tepid water. Three gallons should be enough of cold water to cover this quantity. In case more or less meat is to be corned make the brine in the proportion given.

(d) A loose board weighted down with a heavy stone or other weight should be put on the meat to hold it down under the brine.

(e) In warm weather the brine may become slimy or ropy. If this happens, make a new brine of eight pounds of salt, four pounds of sugar, two ounces of baking soda and four ounces of saltpeter to four gallons of

water. Pour off the old brine and wash the meat thoroughly. Add the new brine. If the meat is kept a long time the brine should be changed occasionally. The meat will usually be corned and ready for use in six weeks.

### 3—Sugar Curing Hams and Bacon for Smoking

(a) Cut bacons in proper sizes and trim hams and shoulders after meat has cooled. Weigh.

(b) Then pack it in a barrel with the hams and shoulders in the bottom, using strips of bacon to fill in between or to put on top.

(c) Weigh out for each 100 pounds of meat eight pounds of salt, two pounds of brown sugar and two ounces of saltpeter. Dissolve all in four gallons of water and cover the meat with the brine. For summer use it will be safer to boil the brine and allow it to cool before using. Place a few pieces of board on the meat with weights to keep the meat immersed in the brine.

(d) Bacon strips should remain in the brine four to six weeks and hams six to eight weeks before smoking. In case the brine becomes slimy or ropy, remove it, wash the meat and cover with a fresh brine made as above.

### 4—Dry Curing of Pork for Smoking

(a) Cut bacons to proper size and trim hams and shoulders. Weigh.

(b) For each 100 pounds of meat weigh out three pounds of salt, two pounds of granulated sugar and two ounces of saltpeter and mix them thoroughly.

(c) Rub the meat once every three days with a third of this mixture. While the meat is curing it is best to have it packed in a tight box or barrel. For sake of convenience it is advisable to have two barrels and to transfer the meat from one to the other each time it is rubbed.

After the last rubbing the meat should lie in the barrel a week or ten days, when it will be cured and ready to smoke.

It cures best in a cool moist place, and the preservatives will not penetrate satisfactorily in a dry warm place.

### Ham and Bacon

(a) Cure the ham in brine or salt as described in recipes three or four. Rinse off adhering salt and allow to drain. Hang in the smoke house.

(b) Smoke continuously for two or three days, or smoke three or four hours each day for about two weeks. Use hardwood or spent tan bark for smoke. (Spent tan bark may be obtained from tanneries. Do not use the fresh tan bark.)

(c) As soon as the meat is sufficiently smoked, open the doors and windows of the smoke house and allow meat to cool. When thoroughly cooled remove and wrap each piece closely in paper. Put the wrapped pieces in strong sacks and tie well at the top. The sacks should be hung where they are to remain until the meat is used. The sacks should be coated with a thick paste of lime, water, and enough glue to make the mixture stick. Do not stack in piles. Hang so pieces do not touch.

### A HOOVER ASSISTANT

Written for California Cultivator  
By C. A. Briggs

A Berkshire sow, Symbaleers' Belle 192393; sired by Symbaleer 5th; dam Tillie Robinhood 4th; bred by N. D. Browning of Jackson, Missouri; and now owned by H. L. and E. H. Murphy of Perkins is making a remarkable production record. She is four years old and a fine individual of the breed. Since coming into her present ownership she has had a litter of 15 pigs in October, 1916, raising 11. In May, 1917, she had a litter of 17 and raised nine. She is now in pig again to Wilsonia King Laurel 240674.

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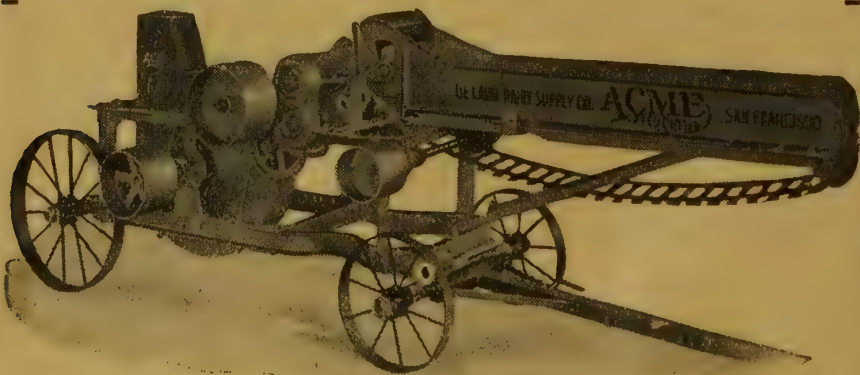
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## Field Notes from the Live Stock Men

N. H. Locke Company writes: "We recently sold King's Financier, first prize two year old, at California Land Show, shipped to Honolulu; Wild Rose's Valet of L., second prize, Land Show yearling to John Stewart, Napa; Laddies' Letty's Valet of L., first prize Land Show, calf to J. P. Kelly, Marysville.

Gibson's Goods, although he died after only a few years' service in Roselawn herd of registered Shorthorns, has left a marked impress of his great breeding qualities upon the herd. Bought as a calf at what was then a long price by the late T. B. Gibson, this bull developed into a very useful sire. His get have been conspicuous winners in both group and individual classes at California State Fair and at the Portland International, and more of them will yet be heard from.

W. M. Carruthers, San Francisco and Mayfield, has upwards of 150 head of registered Shorthorns in his herd at present. A crop of choice calves is coming on, many of the most promising ones being by the two times grand champion bull, Count Glory. This excellent sire is being given heavy service in the herd at present, and from some of the young things noted around the paddocks and in the

pastures at Carruthers Farms, the get of this sire will need to be reckoned with in the young group classes at the 1918 Western fairs. A part of Carruthers Farms was recently taken over by the government, the land being needed for operations at Camp Fremont.

H. M. Elberg, manager of Roselawn Stock Farm, Woodland, recently returned from the Middle West, bringing back a few head of especially good registered Shorthorns to add to the Roselawn herd. For a junior herd sire the yearling Crescent Dale was selected. He is a red of pleasing form, well covered, and with unusually good rear quarters. He is of distinguished breeding, being by Whitehall Rose Dale, by Avondale, and out of Cressie Belle. A prospect for a future herd sire was secured when Mr. Elberg purchased the good Scotch cow, Mischief E 3d, a daughter of Village Bridegroom, with a bull calf at foot. This youngster is a pure white by Eastlawn Champion, he by Champion of Scotland. He is a most promising calf and on pedigree and present promise should develop into a herd sire fully worthy a place at the head of the good Roselawn herd. Mr. Elberg was accompanied on the buying trip by the capable Roselawn herdsman, Carl Johnson.

## Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

### Stomatitis

Our cat has sores on her chin and by her whiskers. At first there were black specks on the chin and at the roots of the whiskers, but now they have broken out into sores. Have dressed it with peroxide but it is not improving. Please advise us what to do.—Subscriber, Eubanks.

Probably the main trouble is in the stomach. Give ten grains of phosphate of soda dissolved in a tablespoon of water every morning for a week. Also swab out the inside of the mouth and on the sores outside with a solution of alum and borax; half a dram of each in four ounces of water.

### Swelling on Jaw

Have a two year old mare that has a large flat swelling on the right jaw bone. The swelling is quite noticeable and has not changed much since we first saw it about two months ago. It is not sore and the mare began running at the nose about a week after we noticed the swelling. What would you advise doing with it?—Subscriber, Nestor.

The swelling may be due to an ulcerated tooth or it may be due to barley beads or foxtail working through the membranes lining the mouth. The discharge from the nose may be caused by the irritation from the jaw and will disappear when the jaw is cured. Better have a veterinarian examine her.

### Snuffles

Since my mare has recovered from the strangles she has begun to snuffle and is short of breath. Have smoked her with pine tar and have used turpentine and hot water but so far she does not improve. What would you advise?—Subscriber, Nestor.

The snuffling or difficult breathing is probably due to paralysis of the vocal cords as is sometimes seen following a case of strangles. The trouble is called roaring and is hard to cure. Only an operation on the throat seems to be successful and that can only be

done by a well qualified veterinarian. Sometimes when they are fed very scantily for a time and then have a run at grass they make a very good recovery. You might try that first.

### Fistulous Withers

I have a horse that has a swelling just at the top of the shoulder blade and over the withers. It seems to be puffy on both sides of the withers, the left side being the largest. We first saw it about a month ago. We have been rubbing it every day. It does not grow any larger. Can it be rubbed away?—Subscriber, Artesia.

It is nothing more nor less than an abscess caused by a bruise. The parts may be bruised when the horse is rolling if he rolls on a stone or any hard substance, or in passing under a low beam in the stable or the limb of a tree. There are many ways that the withers may be bruised. It is hard to cure because the parts are mostly bone with very little flesh between. Also very little blood goes to those parts and the abscess being on the top it does not drain well. It is full of pus which will not absorb. It will have to be opened and all the pus and bruised tissue removed then thoroughly cleansed out to the very bottom, once a day until filled with healthy tissue. You will have to get a veterinarian to open it for you and then he can give you the medicine and instructions how to care for it.

### Bitter Milk

I have a Jersey cow about ten years old. Two weeks ago her milk began tasting badly after standing from ten to 12 hours and next day the cream had a bad odor and tasted badly. Butter made from this cream also tasted and smelled badly. Last year about this time we had the same trouble with her milk and dried her up. She was dry about five months. She is giving over two gallons of milk a day and would like to keep her milking if the trouble can be remedied. She is fed alfalfa hay that is mixed with Bermuda grass and has plenty of clean water. What is the remedy?—Subscriber, Hynes.

The conditions you describe are not common but those who treat diseases of animals see a few such cases ev-



ery year, about this time. It is thought to be due to a germ that gets into the system through the drinking water or possibly through the feed. It does not seem to affect the general health of cows very much but shows up in the milk as you have observed. Look well to the source from which the drinking water comes and if there is any possible way for any drainage to get into it see that the conditions are changed. Give the cow two drams of the bisulphite of soda once a day for ten days. Also give her one dose of salts. One pound epsom salts, half a pound of common salt and a large tablespoon of ginger. Dissolve all in a quart of hot water and when cool give at one dose. Green feed is hard to get at this time but anything fresh and green in place of the hay will also help.

**Hog Cholera**  
Have been having some trouble with our hogs. Have lost five and have several more sick. Am at a loss to know just how to handle it. We have them in a warm dry place and have good feed for them. The sick ones are in a hospital pen and get a mixture of soaked corn, barley, middlings, tankage, condition powders, etc. We had some trouble several weeks ago and thinking it was cholera vaccinated them and several of the sick ones got well. Our veterinarian said he thought the improvement was due to the protein in the injection rather than to the serum itself. Have held post mortem on those that died and found some well marked cases of and discolorations of cholera so it pneumonia while others had lesions seems to be a conglomeration of troubles. Please give us your opinion on the subject.—Subscriber, Southern California.

From your description we would judge it to be hog cholera. It does not affect all alike. Some have pneumonia while all have more or less trouble with the digestive organs and the spleen of a cholera sick hog is said to be always enlarged. It is rather late now to expect the regular hog cholera serum to save the bunch. It is more of a preventive than a cure. Some claim now to have discovered a remedy that cures a large percentage of the sick ones and does it quickly. We hope this is true and we will have to try their remedies until the right one is found. There was a time when veterinarians dreaded to be called to treat a case of milk fever in cows knowing that a large per cent of them would die in spite of all he could do but now it is like play to treat a case of milk fever because we know we can save every one. The hog raisers will just have to keep on employing the veterinarians to treat their sick hogs hoping they have or soon will find a remedy that will cure quickly. The only hogs the veterinarian has to experiment on belong to the other fellow and he must have some pay for his time for he can not live on air and sunshine alone. This may be poor consolation for the present but in time he will pay back with interest compounded many times for all he is getting now. At the present prices of pork it would seem that the farmer could afford to spend a little to help the good work along.

In addition to high food value silage supplies succulence which makes it easily digestible. This tends to provide June conditions in the dairy in January and results in a full milk flow.

Be careful with your sires. Select them with the utmost care. From chickens to horses observe the same rule and observe it strictly.

Whether or not a man can make his dairy pay depends wholly upon the attention he pays to the cows.

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## The Coming Western Berkshire Congress

By F. R. Steel, President Western Berkshire Congress

When the first Western Berkshire Congress was held at the Panama-Pacific Exposition in 1915 consignments were made to the sale that was a chief feature of the event with many misgivings by the consignors. The success of that first Western Berkshire Congress sale is now a matter of history; and the happy result of the second sale at Sacramento and of the third at Davis is also well known. The reason for this continued success appears in the strict protection of the interests of the buyers at these sales. The management insists that only bred sows or bred gilts (the thing for which there is the greatest demand and which has proven the most satisfactory in public sales of swine) shall be consigned. It also allows nothing but really superior animals to be sold. A secret committee passes upon each sow or gilt before she is permitted to go through the sales ring, thus insuring the buyer that only worth while and valuable breeding foundation material will be sold at Western Berkshire Congress sales. Then again each sow and gilt has to be guaranteed safe in pig at the time of sale by the consignor; and this year practically all animals sold will also be far enough along in pig so that they will plainly show their own guarantee.

An innovation this year will be the publishing in the catalog of the weight of each animal consigned; and also the official weighing at Davis of each sow after her arrival there, which weight will be announced at the sale ring. This, together with the pedigree published in the catalog and the show record, if any, of the animal and

her immediate ancestors, will give buyers who can not attend the sale in person, but who wish to send in bids nevertheless, by far the best chance that has ever been given at any public sale to intelligently and profitably select bred sows or bred gilts to add to their herds or with which to start new herds. This matter of so arranging the coming Western Berkshire Congress sale at Davis February 21st and 22nd that a good many animals can be profitably bought by people not themselves present at the sale is being given special and careful attention by the management.

The questions of the year most important to Berkshire breeders of the West will be thoroughly discussed and action decided upon. Chief among the paramount questions to be decided at this time will be the way in which Berkshire breeders of the West and the Western Berkshire Congress as an organization can be of most substantial use to our government in winning the war. The matter of an Advanced Registry for Berkshires will be brought to a head, and definite recommendations concerning this important move formed. The general advertising campaign for Berkshires will be thoroughly discussed and the opinion of the West brought to bear upon the movement. The campaign recently started by the American Berkshire Association through the various state vice presidents of that association for the definite advancement of Berkshire interests in each state will be outlined and explained.

Come to Davis on February 21 and 22.

## The Dairyman's War Obligation and Opportunity

**O**F COURSE it is the regular stunt to urge greater production—and none the less our duty even if it is being peached into us from all sides. The department of agriculture is chief in pushing for this increased production, and California's response has been most gratifying. Here is a general statement issued by the assistant secretary which covers much of the same ground heretofore touched, but at the same time it is a statement of sufficient value to be given entire.

We believe dairymen are doing their best to make response, but if any dairyman in the world ever was confronted with one big problem it is the California dairyman at the beginning of 1918. The statement follows: All individuals and all industries have war problems to solve and war duties to perform. Perplexities that were unknown in the past are faced today by every person and every business—and opportunities for patriotic service are found that were never known before.

The dairy industry is not an exception. Its problems are difficult but its privilege is great, for by solving its problems it will do much to help win the war.

In order to measure up to the food requirements of the war we must bring about all possible increases of every staple food that we produce and conserve to the utmost these foodstuffs

after they are produced. Milk and dairy products are fundamental food requirements. We can not reduce consumption without inviting serious impairment of health and lowering of vitality. The war has greatly increased the foreign demand for our dairy products. In order to be able to meet these demands and at the same time maintain the domestic supply, the dairy cattle of our country must be conserved now and breeding programs so conducted that herd increases will be assured for the future.

The dairyman's war obligations are to maintain and increase herds, to utilize more effectively milk by-products that have been wasted or only partly used as human food, and to apply to the industry, if possible, improvements in methods of feeding and management whereby production may be economically increased.

One of the most important points to be remembered is that if a dairyman decides he must sell some of his profitable cattle he should make every effort to sell them to another dairyman who is so situated that his herd is not to be reduced, or to sell them to a farmer who can carry a few more milk cows. It is deplorable for a dairy cow of good qualities to be slaughtered at a time when the maintenance of the dairy industry will help win the war and will assist humanity in meeting its food problems after the war.

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have been slaughtered for meat during the last three years. The continental dairy countries imported much of their feed before the war. The war brought about a reduction of such shipments. There wasn't enough ocean tonnage to be spared for hay and concentrates because guns and powder and human food were the urgent military needs. At the same time the armies and civilian populations had to have more meat. So dairy cattle were killed to supply this demand and because there wasn't enough feed to keep them alive. As the war continues these conditions may be expected to become more acute and the slaughter of European dairy cattle to increase. Therefore the demand for American dairy products, which has grown by leaps and bounds during the last two years, will be larger and larger as the war lasts. And when the war ends we must continue to supply these nations until they can rebuild their herds, and we will be called upon for the breeding cattle from which these devastated dairy herds will be replenished. If we are to be prepared to respond to these demands, we must begin now to increase our own dairy herds.

Before the war we imported much larger quantities of dairy products than we exported. The trade balances have shifted until the situation is now exactly the reverse—we export much more than we import. For the fiscal year of 1914 we imported \$15,000,000 worth of dairy products and exported \$2,966,000 worth. For the fiscal year of 1917 our dairy imports decreased to \$8,000,000 and our dairy exports climbed to \$49,000,000.

During 1914 we imported 64,000,000 pounds of cheese and exported 2,500,000 pounds. For the fiscal year of 1917 we have imported only 15,000,000 pounds but have exported 66,000,000 pounds of cheese. Our 1914 exportations of condensed milk were 16,200,000 pounds, while the 1917 exportations were 259,100,000 pounds.

It is apparent that if this ratio continues we must have a substantial increase in our dairy herds in order to meet both domestic and foreign consumption.

#### How Milk Is Used

According to experts of the dairy division of the United States department of agriculture, the 1917 milk production of our country is 89,547,500,000 pounds of milk, from 22,768,000 cows. We use that milk this way: 39,600,000,000 pounds for butter making (yielding 1,650,000,000 pounds of butter); 36,500,000,000 pounds for drinking; 4,200,000,000 pounds for cheese (making 420,000,000 pounds of cheese); 3,150,000,000 pounds for ice cream (making 210,000,000 gallons); and 2,437,500,000 pounds for condensed milk (making 975,000,000 pounds of condensed milk).

This shows that slightly more than 44 per cent of our total milk production is used to make butter. However, in butter making only four per cent of the milk actually goes into the butter and 96 per cent remains as a by-product, in the form of skim milk or buttermilk.

On this basis we have had, as a by-product of butter making this year, 32,679,360,000 pounds of skim milk. That amount of skim milk could be made into 4,901,904,000 pounds of cottage cheese. And that much cottage cheese would contain 1,024,497,936 pounds of protein—more protein than is contained in all the beef eaten in the United States in a year. (In 1915 the total protein in the beef eaten in

this country was 953,580,000 pounds.)

This will suggest the enormous opportunity for food conservation in the utilization of skim milk, in the form of cottage cheese, for human food instead of feeding it to live stock or throwing it away.

Of course, when skim milk is fed to young stock its food value is not entirely lost—but it is not fully utilized. For skim milk is worth much more as a human food than as an animal food. There is an urgent war need of producing more meat, but the point is that by feeding less skim milk to stock and eating more cottage cheese ourselves we derive the maximum food value of skim milk—and this can be done without decreasing meat production, for, generally speaking, pigs and calves are fed more skim milk than they convert into meat. Obviously it is not economical to use, unnecessarily, for stock feed, a food that can readily be used for human beings—more especially when other feeds that can not be used directly by humans can replace in whole or in part the skim milk ration for animals.

Fed to a pig, 100 pounds of skim milk, combined most advantageously with other feeds, will produce 4.8 pounds of dressed pork. The same amount of skim milk, made into cottage cheese, has the protein value of 22.5 pounds of pork. Furthermore, from 100 pounds of skim milk made into cottage cheese there remains about 80 pounds of whey, which has a feeding value of about half that of skim milk. Properly combined with other feeds the 80 pounds of whey should produce 1.9 pounds of pork. Accordingly, by making cottage cheese and feeding the whey to pigs, 100 pounds of skim milk has a protein value of 24.4 pounds of meat, as compared with only 4.8 pounds if it is all fed to pigs.

By a more efficient utilization of skim milk and other by-products, by conserving stock, breeding for herd

increases, applying the most advantageous feeding and management methods, the dairyman will be performing a patriotic service—and, of course, as he adds to the efficiency of his industry and reduces dairy product waste he will make the business more profitable.

#### CREAM REQUIRED TO MAKE BUTTER

If cream contains 15 per cent of butterfat it requires 5.71 pounds of cream to make a pound of butter. If cream contains 20 per cent of butterfat, 4.28 pounds of cream will be needed; if 25 per cent butterfat, 3.42 pounds; 30 per cent butterfat, 2.85 pounds; 40 per cent butterfat, 2.14 pounds.

There is little excuse today for a farmer not having pure bred hogs, or at least high grades of the same breed which will breed true to size and color. They cost very little more to start with than cross-breeds or scrubs and cost no more and oftentimes less to keep. The uniformity and beauty of a herd creates a greater interest in care and feeding, which always means money in the pocket of the owner.

Why do not farmers raise more sheep? They are the easiest to handle of any livestock on the farm. They can be fenced much cheaper than can horses or cattle or hogs. A fence two feet high will often turn them. Sheep are great weed exterminators. In this way one would be utilizing the weeds to some profit, where now they are going to waste.

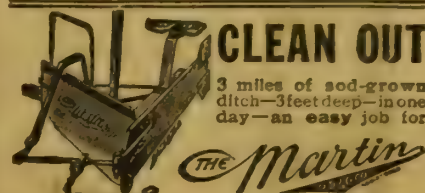
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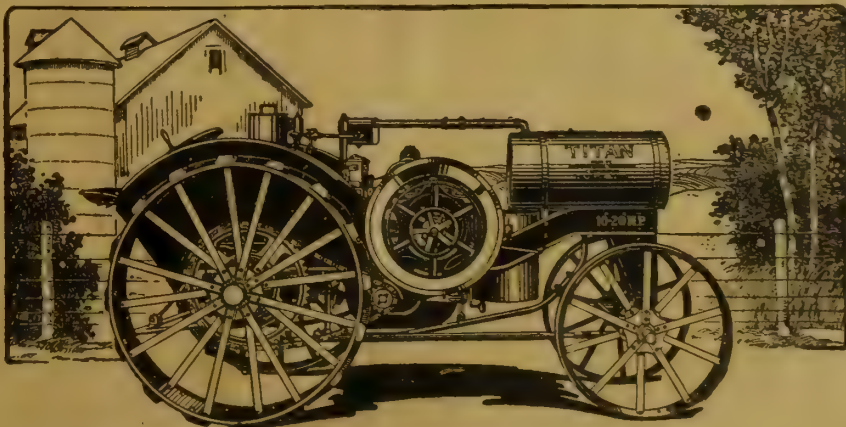
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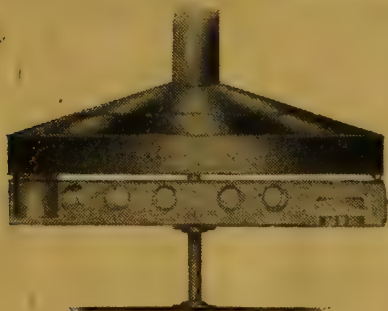
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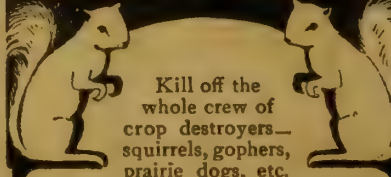
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The University of California says: "From November until the end of February (the rainy season in California) the best way to attack the ground squirrels is to fill their burrows with gas from Carbon Bisulphide."

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A squirrel killed before March is worth a dozen killed later. Because—most young squirrels are born late in March or early in April. So gas the old squirrels now. Write today for prices and interesting folder telling how Carbon Bisulphide—the profit-saver—works.

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## The Baby Chick and Its Mother

Written for California Cultivator By Jean A. Koethen

**E**ACH spring when the lengthening January days begin to turn the fancy to thoughts of hatching, I sit down and with closed eyes try to visualize the needs of the beginner who is going to raise chicks this year for the first time and doesn't know how to do it. There is nothing new to be said. The baby chick is a very weak, simple little creature and its wants are equally simple. But sometimes new experiences turn the thoughts in a new direction and stray bits of knowledge are picked up where one would have thought nothing was to be found. A letter received the past week from a Cultivator subscriber reminds me of one phase of chick raising which I had almost forgotten. She says: "My chicks are dying, and when I open them I find they are all alike, each one containing a hard lump of the yolk of the egg. Some have bowel trouble, others just get lighter and lighter till they die."

That hard, undigested yolk, and the fact that 33 chicks out of 50 have gone the same way before they were three weeks old is sufficient evidence to my mind that these chicks are dying of bacillary white diarrhea. This kind of diarrhea is different from the ordinary kind, produced by chilling, in which the chick pastes up behind but frequently recovers when given sufficient warmth. The chick with bacillary white diarrhea never recovers, and it is better that it does not, for it would only serve as a carrier for disease germs. Bacillary white diarrhea is not caused by errors in the care of the chick. It is an infection from the hen that laid the egg and was in the egg—before it was hatched. The best of care would not prevent its development. Happily such cases are rare. Most of the chicks that die in our back yard flocks die from easily preventable causes, and the cause that is at the bottom of probably 90 per cent of the deaths that occur the first two weeks of the chick's life is lack of mothering.

There are three kinds of mothers; the artificial kind that cares for a thousand or more chicks at once, and does it very efficiently everything considered; the hen mother, a temperamental creature of whom there is no better description than that of Longfellow's little girl,

When she was good she was very, very good,  
And when she was bad she was horrid.

and the human intelligence, be it that of man or woman, that has to run either of the other two. Myself, I would rather run a good brooder than a bad hen.

Here is a case in point, another page out of the past year's experience. Last spring the hatching was not a success with me. In the first place I was hatching "boughten" eggs, expensive, blue-ribbon eggs that I was so anxious to make the most of that my own nervousness may have increased that of the hen. In the second place I was hatching with young hens, and the young hen, going through her first experience of maternity, is an uncertain creature at the best. At the worst she is an unmitigated failure. Not one of these hens, and there were four or five of them, failed to smash at least one of these blue-ribbon eggs before hatching time came, or to kill at least one chick before it was safely out of the shell, and one killed half

her hatch. Their mothering was a greater failure than their hatching, and nearly half those chicks died the first week in spite of all my efforts to keep them warm, with stuck-up eyes and rattling throats.

In striking contrast to these Buff Orpingtons was a little Rhode Island Red that last September hatched 16 chicks from 17 eggs and raised every one. She was a little thing, too tiny to cover a dozen eggs, you would have said, but of that quiet, gentle disposition that rejoices in motherhood and thinks of nothing but the comfort of the family.

Is any lesson to be learned from these two incidents? I learned one, and that is, select your hen mothers as you would a brooder. If the hen you have put your eggs under proves restless and uneasy, put another in her place as soon as possible. If there is no other and the restless hen must do the hatching, don't let her mother the chicks. A jug of hot water is a better mother and more easily managed.

The first need of the baby chick is warmth. No matter how carefully you feed, if the chick is not kept perfectly warm the first four days there will be trouble. It may be diarrhea, with the pasting up behind that is such an alarming symptom to beginners. It may be closed or sticky eyes or rattling in the throat. The chick may die at once or it may be stunted so that it never grows as it should. The chick that is warm lies and sleep the first 48 hours, and this is the best test of temperature. When your hen mother sits quietly on the straw in the corner of the coop with the chicks all covered by her wings or with a little head peeping out here and there, the chicks are warm. When you find her scratching and the chicks huddled in a corner be sure they are not warm. When you look into your brooder at night, and see the chicks all spread out, sound asleep with their heads poked out under the edge of the curtain, you may know they are warm. If they are standing or crowding together, do not be surprised if next morning you find dead chicks on the brooder floor. Don't let any one tell you the chicks died because they were crushed under the others. They died because they were cold and for no other reason. Some may have been crushed in their effort to get warm, but it was cold that was at the bottom of it.

When a brooder must be used, see that it is just large enough to hold the chicks you have comfortably. It is more difficult for chicks to keep warm when they are surrounded by air space than when they have something to cuddle against. The chick that is mothered in the natural way has from the first moment something warm close up against it. One has only to watch a little motherless brood on a chilly day crowding around a jar of hot water to realize how vital is this need not only of heat, but of something warm that it can feel. When chicks are raised on a large scale the temperature of the brooder house must be kept very high to make up for the lack of this soft motherly touch.

The use of the Philo fireless brooder is not as general as it was a few years ago, and yet the fireless brooder has some good points. The principle on which it is constructed is that of keeping the chicks warm by the heat of their own bodies. In order to do this, they must be warmly covered and have plenty of straw under them. It

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is necessary that the brooder box be of just the right size, about a foot square for 25 chicks, and that there be not less than 25 chicks, for a smaller number than this cannot keep each other warm. I would rather keep chicks in a box like this in a warm room at night (the incubator cellar is not a bad place) than trust them to an

indifferent hen, but when any plan of artificial brooding is followed the caretaker is the real mother and must give incessant attention till the chicks are "brooder-broke," that is, till they have learned where to go when they are cold. Once they have learned this, they will keep themselves warm if only there is a warm place for them.

## When is a Contract a Contract?

Cooperation Is Strengthened by Court Decision in Matter of Suit of Poultry Association of Southern California to Enforce Contract

Something over a year ago poultrymen of Southern California, driven to some step to save the industry, organized a cooperative marketing organization. Prior to that Central California had organized along same lines, both asking aid of State Market Commissioner Weinstock.

Naturally cooperation necessitates sacrifice of individuality and means greater efficiency. After contracts were made and a year's expense planned, individuality on the part of a few members of the Southern California organization began to assert it-

self, and, regardless of contract provisions, some producers withheld eggs and marketed under private contracts. Result: chaos and disorganization—at least in sight — unless the contract could be enforced. Hence suit in the Superior Court of Los Angeles County.

After several days the trial ended with award of \$230 to the Association and a verdict that the contract is valid.

This will strengthen the hands of cooperators and be a long step in advance in the problem of marketing agricultural products.

## My Friend the Canary

**T**HE canary, the cheeriest of household pets, deserves a place in every home, says Loretta R. Moore in Rural New Yorker. She gives directions for their care. They are such lively, happy little creatures, perfectly contented all day long and will sing no matter where you put them. The cage should be at least ten inches long, seven inches high and wide, and preferably of brass, which is easier kept clean; should hang from four to six feet from the floor.

Birds require a temperature of from 68 to 80 degrees Fahrenheit. If the room is cooler than this at night the bird should be covered. Do not hang your bird right in front of the window. When hung from the ceiling a little at one side he will get all the light and not feel the cold that comes through the glass. Be very careful about drafts at all times, as birds are as susceptible to colds as concert singers, and not as easily cured.

### General Care

Birds love a sunbath, but never place them in the mid-summer sun without some shade, and keep out the summer sun at noon. It is best not to hang your bird out of doors in the summer as he is so apt to catch cold. Possibly on a sultry day when the wind does not blow he might be put out of doors for a couple of hours in the middle of the day.

So many people say to me, "My bird does not sing." I ask them, did he hang out doors last summer or in front of the window last winter. "Yes, he hung out all summer, and I do put him in the window." It is best to keep your bird well and you will not have to doctor him.

### Feeding

When purchasing a bird go to some reliable person and pick out a healthy bird, and there will be less danger of its getting sick. Young birds have pink feet. The two kinds usually found in bird stores are the Hartz Mountains birds, or natural singers that have received but very little training, and the St. Andreasburg Rollers, which have had the best of training from the first. Canaries are said to be the greatest gluttons in the animal kingdom, so beware and do not overfeed. Feed one-third rape and two-thirds canary seed. Give fresh water and gravel daily; in summer fresh water twice a day. Keep cuttle bone always in cage. Every few days give a bit of green food, lettuce, chickweed, apple if it is ripe and not too sour. Do not feed hemp seed. Once or twice a week and all through the moulting time feed the egg mixture (described later), and if he should be

ailing he relishes soft food more than seed.

### Insect Parasites

One of the greatest enemies the birds have is lice or mites, but if proper precaution is taken you will have little trouble. Place damp white cloth on cage for an hour in the evening, or allow to remain all night. You will see tiny red mites on it when removed. Scald cage occasionally and paint end of perches and where swing hangs with coal oil. Wash cage with soap and water once a week, and either wash and dry or scrape perches often. Dust bird with mite exterminator. Allow bird to bathe every other day, twice a week in cold weather.

### Other Care

Manicure bird occasionally; catch and hold to the light; cut the nails just beyond the red vein in the foot or toe. If feet are sore or scaly, soak in warm water for several evenings, dry and apply a little vaseline. Moulting season with canaries is in July, August and September. They are weaker during these months, and should have the best of care. Keep out of draft, feed cracker and egg mixture often, with a little song food and some green relish. The German remedy for all bird ailments is a small piece of salt fat pork, rubbed over with cayenne pepper. The egg mixture consists of the yolk of an egg boiled twenty minutes and three or four oyster crackers, pulverized, and a generous pinch of cayenne pepper. This can be slightly salted. Mash fine and mix well. Great care should be taken in selecting seed, as inferior seeds are substituted and are injurious to the birds. The small round brown seed is rape, and tastes sweet, and if your seed should be bitter do not feed it, as it is mustard or some inferior seed. The light seed is Sicilian canary, and should be bright and shiny. Some bird seed mixtures have millet, which will not hurt the bird, but he does not require it.

Birds kept by these directions will be healthy, happy, and very little trouble. It is necessary to know your birds and love them if you would be successful. Try to gain their confidence, move slowly when working by the cage, avoid all quick motions which might scare them. Give your bird a name and talk to it, and you will soon find that it will become well acquainted with you. If it is necessary to catch the bird, put the hand in slowly and do not attempt to catch him until you are sure the opportunity is right for it. Hold him carefully with his wings closed so he cannot flutter or ruffle his plumage. It is a good plan to let the bird out occasionally and fly around the room. Exercise is very beneficial and it makes them happy.

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New formula of U. S. Government Poisoned Barley is effective in dry weather. Kilmol and U. S. Government Poisoned Barley are used and endorsed by the biggest and most successful ranch owners.

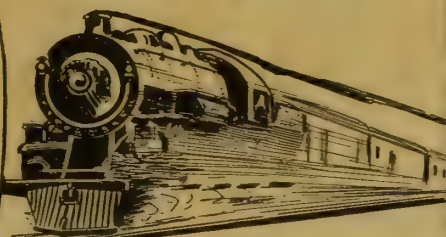
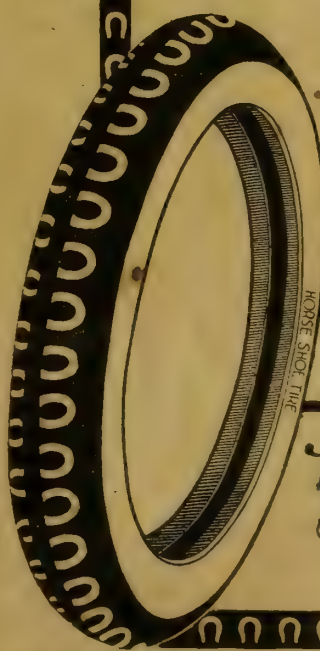
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No matter what your tillage requirements may be there is a Moline Harrow just suited for your work. For orchard or field, with horses or with tractors, Moline Harrows do thorough work, give long, lasting service, are easily operated and light in draft.



## Moline Spring Tooth Harrow

Built for hard usage. Two-inch channel bars, heavy tubular steel tooth bars and teeth of finest spring steel, hardened in oil, give exceptionally strong construction. Furnished either with runners or wheels in 1, 2 or 3 sections.



## Moline Reversible Low Down Disc Harrow

Just the harrow for orchard work. Wide or narrow frame extensions can be provided for harrowing under overhanging branches. Disc gangs can be easily reversed or tilted. Can be equipped with guards to prevent injury to overhanging branches. Well constructed with dust proof bearings.



## Moline Three-Lever Disc Harrow

An extremely flexible, deep penetrating, light draft disc harrow. Frames so constructed that the gangs do not bump or ride. Pressure of the disc gangs is regulated by a lever. Difference in pressure between gangs is perfectly equalized. A tandem attachment can be furnished to make a double cut harrow. A great variety of sizes with round or cut-out discs can be provided.



## Moline Engine Disc Harrow

A heavy, powerful disc harrow built especially for use with heavy tractors. Pull is direct from three large, dust proof bearings on each gang—the only correct method. Heavy springs take up end thrust of the gangs. Extreme flexibility between disc gangs.

You cannot go wrong in selecting from the Moline Line of tillage tools; they are correctly designed and built in the best possible manner.

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Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

## Honey Marketing Agreement



SINCE the Los Angeles convention of California bee keepers, in which it was endeavored to evolve some marketing scheme, committees have been at work on a form of marketing agreement. The one which has been most generally accepted is given in the form below. There may be some changes before signing up, and some producers are protesting against centering so much power in the hands of one committee, but unless the members can find an impartial and business like committee which will handle the affairs of the association we believe it is better not to form such an association. If people are to cooperate, they must cooperate, and that means they must secure someone capable of handling the business and trusting absolutely to them. The Cultivator believes that when a contract is entered into it should be so iron clad that association plans may be made for a year without any change, that the members will stand behind any plans for that year or for the term of the contract. The form of agreement is:

### Marketing Agreement

This agreement, between the ..... Beekeepers' Association, a non-profit association without capital stock, with its principal office at ..... California, hereinafter called the association, first party, and the undersigned beekeeper in said state, hereinafter called the producer, second party. Witnesseth:

In consideration of the mutual obligations herein, and of a prior agreement executed by the producer and of membership in the association and in compliance with the by-laws thereof, and in pursuance of the express aims of the association, for cooperative marketing, and of similar obligations undertaken by other beekeepers:

1. The producer hereby agrees to consign and deliver immediately after the crop is ready for market, under the conditions hereinafter set forth, to the association as his agent, or at the order of the association, as his agent, and not otherwise, all of the products of his bee colonies during the years 1918-19-20, except such portion of the crop as he may retain for personal use or may sell for local consumption only, or may reserve for feeding.

2. The producer hereby appoints the association his agent, coupling said agency with a direct financial interest as the common agent of producers hereunder, for consigning or marketing or storing or selling any and all such products; and for purchasing necessary materials for the use and account of the producers hereunder; and the producer authorizes the said association to pay on his account all actual costs of freight, cartage, loading, warehousing, insurance, selling and any other proper charges not here specified, and in addition, authorizes the said association to deduct and retain an association charge, in the discretion of the association, not in excess of 2½ per cent of total sales f. o. b. local shipping point, California, from the moneys due or payable to the producer out of the sale or marketing of any and all of his said products.

3. The association charge shall be used for meeting the expenses of the association.

If, at the end of a year's operations, any surplus remains out of the said charge, the association may use the

same for any purpose of common advantage or profit to the producers, or may refund the surplus, or any portion thereof, to them, in proportion to their shipments to or through the association.

4. The producer further appoints the association his agent and attorney in fact, subject to the terms hereof, and authorizes the association to settle in his name any claims for damages which may occur to such products in transit; to fix a reasonable price at which his products may be sold; to act for the producer as his agent in negotiating loans on his crops, at his express request; to store any and all of his products, and to sell the same on his account and to pay him the net proceeds, less all costs and the deductions herein provided; and to deliver or cause to be delivered any or all of his products to any dealer or distributor with which the association may have theretofore contracted; to take possession of any and all products ready for delivery or shipped by the producer other than as directed by the association.

5. The producer agrees to prepare his products for shipment, and to deliver them at the nearest convenient common shipping point to the association for marketing for his account, or to ship and deliver them as and when directed by the association and on such terms as the association shall be able to secure; and the producer shall receive his warehouse or other receipt therefor.

6. (a) The association may make rules and regulations and provide inspectors to standardize the quality, method and manner of handling, packing and shipping of products for direct sale or for any particular purpose; and the producer agrees to observe and perform any such rules and regulations prescribed by the association.

(b) All products delivered to or at the order of the association hereunder shall be of the standard and conform to the regulations as to quality and otherwise that may be prescribed by the state authorities or by the association.

7. The association further agrees to sell and market the said products at the reasonable and fair prices obtainable by the association in the open markets or elsewhere, subject always to the conditions of supply and demand, competitive offers and governmental rules and authority. The producer agrees to ship directly to any person under contract with the association such percentage of his shipments as the association may direct, packed as the association may instruct.

8. The association and the producer further agree that the local association may make an agreement or contract with the California State Beekeepers' Association, whereby the said state association may market and control the sale of all the products of the members of this local association and in any such event the producer agrees to be bound by any such contract; and any such agreement with the said state association shall for all purposes be deemed by the producer as a part of the selling or marketing arrangements provided for in this agreement and the producer shall be fully obligated thereunder.

9. This association or the state association shall market and sell the bee products of the producer, mingled

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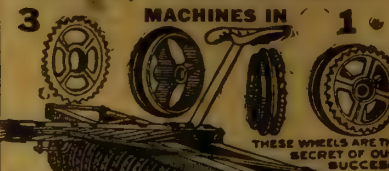
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for preparing your seed bed, will increase your crop 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizes and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants. MADE IN 12 SIZES, FOR HORSES OR TRACTOR USE, IN 1 AND 3 SECTIONS. 1918 crop will bring war prices; make it a record breaker in size by using the Western. Send for our free illustrated catalog, giving full description of the machine and its work, also dealer's name and much other valuable information. Western Land Roller Co., Box 323, Hastings, Neb.

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with the products of like variety and grade delivered by other producers named in contracts similar to this, at the reasonable and fair value thereof; and the producer agrees that his products shall be so handled and mingled and that the returns therefrom, less brokerage and all other costs and charges and advances and the association charge, shall be credited and paid to him on a proportional basis out of the amounts received by the local association during the season from the sale, direct or otherwise, of all such bee products of each variety and grade.

10. The association may advance to the individual producer whatever it may be able to borrow on the warehouse certificates or receipts of the individual producers, or on the bee products delivered by the individual producer, less any amounts theretofore advanced to the said producer by the association, on crop mortgage or otherwise.

The association, in the discretion of its board of directors, may advance to the individual producers sufficient to cover the cost of cans, cases or other necessary materials, in an amount, however, not in excess of fifty (50) cents per colony for each individual producer, said advance, and all other advances, to be deducted from the proceeds due or payable to any such producer immediately upon the receipt thereof by the said association.

11. This agreement shall be binding upon the producer during the period above mentioned, as long as he has the legal right to exercise ownership or control of any bee products during the term hereof.

12. This agreement is one of a series, identical in terms, composing, with all such agreements signed by individual producers, one single contract between the association and the said producers, mutually and individually obligated under all of the terms thereof.

13. The producer agrees that, in

the event of the breach by him of any material provision hereof, particularly as to delivery and marketing of any bee products other than or to or through the association, the association shall, at its option and upon proper action instituted by it, be entitled to a decree for specific performance hereof, according to the terms of this agreement; and the association and the producer expressly agree that this agreement is not a contract for personal services and that this agreement depends reciprocally upon every similar agreement for its full force and effect and will be the proper subject for the remedy of specific performance in the event of a breach.

14. If the association brings any action to enforce any provisions hereof or to secure specific performance hereof or to collect damages of any kind for any breach hereof, the producer agrees to pay to the association any reasonable attorney's fee expended or incurred by it in any such proceedings.

15. Inasmuch as it is now and ever will be impracticable and extremely difficult to determine the actual damage resulting to the association should the producer fail to so consign and deliver his bee products, the producer hereby agrees to pay to the association \_\_\_\_\_ cents (\$\_\_\_\_\_) for each \_\_\_\_\_ of bee products sold, consigned or marketed by or for him other than in accordance with the terms hereof, as liquidated damages for the breach of this contract, all parties agreeing that this contract is one of a series dependent for its value upon the adherence of each and all of the contracting parties to each and all of the said contracts.

Read, considered and signed this \_\_\_\_\_ day of \_\_\_\_\_, 191\_\_\_\_  
\_\_\_\_\_ Beekeepers' Associations.  
By \_\_\_\_\_  
\_\_\_\_\_  
No. of Colonies \_\_\_\_\_  
Producer \_\_\_\_\_  
Address \_\_\_\_\_

Bee Diseases

Written for California Cultivator By E. Ralph de Ong

HERE are a number of diseases attacking bees which have caused serious loss in the past, but those causing the greatest trouble are known as "foul brood," of which there are three types: the American, European and sacbrood, or pickled brood. These diseases attack bees in the larval condition and before coming to the mature stage. The first two are bacterial, and all of them are infectious. The bacteria may remain alive in honey for a long time or be found in drawn comb or parts of a hive containing diseased bees. It is commonly spread from hive to hive by robbing, introducing diseased colonies or honey from diseased apiaries, or allowing the bees access to honey containing the bacteria.

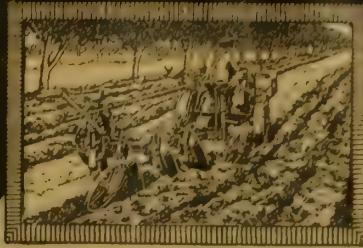
Examine a colony closely before purchasing it and note any sign of dead larvae in the cells; dried black scales still attached to the cell wall, sunken caps over the cells, often with a tiny hole as if pricked by a pin. In advanced stages a very marked odor will be noticed, whence the name is derived. A hive that shows dead or discolored larvae in the cells should be looked upon with suspicion, the normal color being a pearly white. A positive determination of the nature of the disease can be made only by a

bacterial examination. This is done free by the Department of Agriculture, Washington, D. C., from which place also literature may be secured on the control of such outbreaks.

Fortunately the European type of the disease is more common than the American foul brood, the latter being a very dangerous disease. Our beekeepers are now learning to handle European foul brood; and especially if the apiary has been Italianized it is not considered a serious menace, although no one cares to introduce it into his apiary. These diseases are not so easily discovered in late fall or winter but are more active in spring and early summer, and only at this time can a determination be made readily of the condition of a hive or apiary. This point should not be neglected in beginning or increasing an apiary. Our more prominent honey producing counties have regularly appointed bee inspectors to assist in holding these diseases in check. These men may be consulted at any time and should be of considerable assistance to beginners in giving assistance as to local conditions.

VIRTUES OF THE MULE

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THE Bean TrackPULL Tractor—6 h.p. at drawbar—cultivates from ten to fifteen acres or plows from four to seven acres in ten hours, without getting tired like a team. It plows and harrows as close up in the corners and as close to vines and trees as a team.

In orchards it passes under branches only four feet off the ground. It pulls instead of pushes itself along. It "gees" and "haws" out of holes and soft places just as a team will do. Then it turns clear around in a ten-foot circle (5-foot radius) and pulls with its full power on the turns.

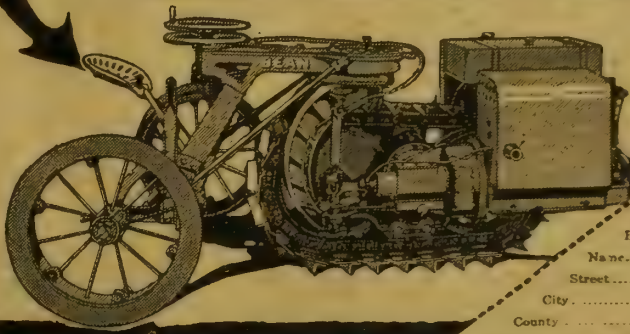
When it isn't at work in the field it runs stationary machinery up to 10 horse power.

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Why Europe Makes Bigger Crops  
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Average Production of European Crops is as Follows:

Wheat ..... 33 bushels per acre  
Oats ..... 45 " "  
Potatoes ..... 199.84 " "  
Cotton in Egypt, 400 pounds " "

Average Production of American Crops is as Follows:

Wheat ..... 14 bushels per acre  
Oats ..... 40 " "  
Potatoes ..... 97.15 " "  
Cotton ..... 185 pounds " "

Europe uses a Home-Mixed Nitrate Fertilizer containing 8 per cent of Phosphoric Acid and 4½ per cent of Nitrate Nitrogen.

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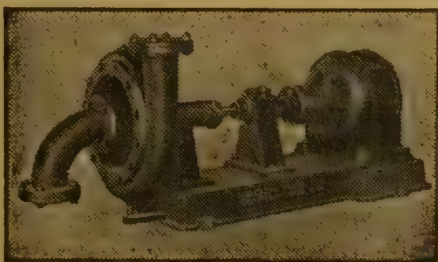
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**For Sale**—Extra fine Valencia trees, 5% to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone. Anaheim Pacific 403-J.

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**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons: Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

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**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References. R. R. Morris, East Whittier, Cal.

**Placencia Perfection Walnut Trees** on black root. Still have a limited supply of first class stock. Scions used in grafting taken from trees showing a high record for crop and quality after seven years of careful selection. Hugh T. Thomson, Orange, Cal. Phone 502R1.

**Walnut and Almond Trees**—Mayette, Franquette, Concord, and Willson Wonder on Northern California Black root. Texas prolific and Drake seedling almonds on almond root. Stock is first class, cannot be better. Write for prices. Ekstein Nurseries, Modesto, Cal.

**For Sale**—5000 Royal Hybrid and Black Walnut trees, two and three years old, ½ to 1½ inch caliper, 3 to 8 ft. Also Grafted Eureka and Eureka grafting wood. John Miller, R. F. D. 4, Box 278, Lodi, Cal.

**Pear Trees**—Offer several thousand Bartlett, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton, Ore.

**By Far the Lowest Priced means** of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 85 cents.

**Valencia, Orange and Eureka Lemon** trees one year past ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet, choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**For Sale**—1000 each Mission and Manzanillo olives ½ to 1½ in. caliper, strong vigorous, clean trees, 20c each, in nursery. Roy R. Mathews, Buena Park, Cal.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574. Phone-Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**My Olive Trees** are selected for bearing qualities, also avocados, feijoas, citrus and deciduous trees. Bishop's Nursery, Highland.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwabacher, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**For Sale**—3500 Valencia, 2500 Eureka Lemons. Young trees. Select fruit buds. Reasonable prices. H. Clements, Glendora.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, Cal.

**Walnut Trees**—Placencia Perfection, selected grafts guaranteed stock. Wm. Pollard, South Pasadena, Cal.

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**Apricots, Olives, English Morello Cherries** and Arizona Ash. First class trees. C. E. Mover, Hemet, Cal.

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**Apricot Trees For Sale**—A choice lot. Carsten Truelsen, Nurseryman, Hemet, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

**For Sale**—Eureka Walnut grafting wood. R. M. Fay, R. D. 4, Anaheim, Cal.

**Seed Bed Stock**—Sour orange, choice. W. H. Hilyard, Orange, Cal.

### TREES

**For Sale or Exchange**—5000 Eureka lemon trees selected buds inspected stock now located Riverside County. Submit best cash offer or advise fully what you have have for exchange. Chas. S. Brown, 1318 Santa Fe Ave., Los Angeles, Telephone A-9260, Main 7164.

### HOGS

**The Billiken Brand of Chester Whites**—There is right now a big shortage of swine in California. The output of 1918 will show even a greater shortage unless the farmers of this state get busy and raise more hogs. Good breeding stock is scarce and hard to get. THE BILLIKEN BRAND represents the best obtainable; they are of that mellow type that mature early and are such satisfactory easy feeders. Get started with this strain and help out the Food Administration and your own pocket as well. Write me your wants—do it today. I can still furnish first class animals at reasonable prices. C. B. Cunningham, Mills, Cal.

**Grape Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more boars left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 37th, and a few bred gilts. Our herd won the Premier Breeders' Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massive Orange. Watch for the sensational offering of sows bred to this great trio which will sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal., W. Bernsteins, Proprietor.

**Large Type Poland-Chinas**—The hog for the farmer if he wants to make money. I have the best lot of weanlings that I have ever seen and they are sired by my boar, Long Smooth Jumbo and if he keeps on growing the way he is, his name will soon be too small. H. Christiansen, R. D. 4, Riverside, Cal.

**Superba, World's Grand Champion** Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Duroc-Jerseys**—Sold out of bred gilts. Two service boars. One of them an outstanding individual for sale. Also Fall Figs, both sexes. Twenty-three ribbons on 11 entries, including 6 championships, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**PLW Durocs**—Eastern selections made by R. K. Walker in January. Peters, Lamson & Walker, Devore, San Bernardino County.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Should Like to Dispose of 1000 hogs**, or hog feeders, weigh 75 to 150 lbs. Address E. F. Sanguinetti, Yuma, Arizona.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Shasta County, Cal.

**Berkshires**—Sired by Star Leader, the \$1500 boar, ready for service. Kounias Registered Stock Farms, Modesto.

**Durocs**—P. & L's Defender by Defender heads herd. Joseph Prendergast, Route 2 Box 37A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera Immune. Derrifield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

### MISCELLANEOUS

**Famous Hairy Peruvian Alfalfa Seed**—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**For Sale**—Bungalow, five rooms, two screen porches, pleasantly situated. Pomona City. Home for retired farmer. Address M. Everham, 725 Laurel Ave., Pomona, Cal.

**Twelve beautiful volumes of Americana Encyclopedias**—First \$15 takes them brand new. Also one motorcycle tandem \$10. Motorcycle luggage carrier \$2.50. M. Martin, Kerman, Cal.

**Quality Trees**, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

### WANTED

**Wanted**—Place as foreman. Advertiser is thorough in all lines of farming, irrigation, fruit growing and the care of livestock. Experienced in working all kinds of labor both tenant and wage system. Address Box P., Cultivator.

**Wanted**—Pure bred Toggenburg does, bred to pure bred Toggenburg buck. Must be registered with A. M. G. R. A. of Dayton, Ohio. J. C. Chadbourne, Suisun, Cal.

**Wanted to Buy cattle**, 70 head two year old steers preferred but will take good grade of stock cattle Durham. P. Herlick, P. O. Judson, Cal.

**Wanted Work on Farm** for experience in western crop raising. Plowing, irrigating. H. DeCou, Gen'l. Del'y., Los Angeles.

**Sow Wanted**—Bred Duroc-Jersey, pure blooded. State very lowest price. Address Pig, Route 1, Box 218, San Diego, Cal.

**Wanted 300 feet 6 inch surface irrigating** pipe for alfalfa. Answer stating price asked. Box 10, Care Cultivator.

**Wanted**—Nine hundred Nonparel and three hundred Peerless Almond trees. O. J. Backus, Rosamond.

### LIVE STOCK

**For Sale**—One Nubian Buck, one Toggenburg Buck, eight milk does. Part thoroughbred and balance grades. All good milkers. Three to four quart milkers. Are changing our business. Write for particulars to Richart & Williamson, Riverside, Cal.

**Registered Percheron Stallion 7 years old**, black, heavy bone, sound, gentle, broken to work anywhere. Price \$350. W. N. Bradbury, Escondido, Cal.

**For Sale**—Large Black Registered Jacks and Jennets, good as can be found in California. Address A. L. Allen, Perris, Cal.

**Registered Shires**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

### TURKEYS

**Our Geese and Turkeys Win Again**—Grand Champion Sweepstake Special, for best pair of birds in show. For size, vigor and quick maturity, our stock are best. East or West. Stock and eggs in season, also Collie pups. Correspondence solicited. John G. Mee, St. Helena, Cal.

**For Sale**—Bourbon Red Turkeys. A few young toms of extra fine stock. Eggs in season. John S. Adams, R. R. No. 2, Box 20, Pomona, Cal.

**Grand Bronze Turkeys and Eggs**—Choice breeding stock. M. M. Reiman, Planada, Cal.

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**Lumber—Sash—Doors—Plumbing—Supplies**—Building materials of all kinds. New and second hand. "A" R. W. shingles 55 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

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**Cary's Champion Cornish** win wherever shown. At Fresno District Fair, 1st on cockerel, hen, pullet, pen; at Modesto, 1st on cock, cockerel, hen, pullet, pen. At State Midwinter Show, Coalinga, 1st on cock, cockerel, hen, pullet, pen. Gold sweepstakes, best display in English class. Gold special, champion cock, cockerel, hen, pullet, and pen. Five pens mated for 1918. L. B. Cary, Reedley, Cal.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 15. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Poultry Wanted**—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co. 607 E. Third St., Los Angeles, Cal.

**Huddleston Blue Andalusians**, great winning and laying strain, Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**Petaluma Hatchery**—Can ship day old chicks to points reached in three days. Why not have the best. We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

**Buff Orpingtons, Buff Leghorns, Bourbon Red Turkeys**—First prize winners at the best shows for the past four seasons. The Ferris Ranch, S. Reservoir, Pomona, Cal.

**Carneaux Squabs**—Be independent and have your own squab dinners. Help Uncle Sam by producing more food. Raise big fat juicy squabs. Full information from Riverside Squabry, Riverside, Cal.

**Am Booking Orders for chicks from Barred Rocks, R. I. Red and White Leghorn stock** for spring delivery. Send for circular. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain). Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campbells and breeding cockerels. Enoch Crews, Seabright, Cal.

**Baby Chicks** (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery Schellville, Cal.

**Baby Chicks from Forney's famous heavy** laying strain of Single Comb White Leghorns, \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorcas, and Buff Orpington chicks** with the Stevenson Hatchery, Watsonville, Cal.

**Baby Chicks**—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

**White Wyandotte Eggs** for hatching, \$1.50 per 15; \$6.00 per 100. Flora Cox, Buena Park, Cal.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reyner, Lathrop.

### POULTRY

**Order Now**, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh cut bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

**Big Profit Now Raising Our 200-290 Egg** Leghorns, Minorcas, Anconas, Rocks, Reds, Wyandottes, Orpingtons, Brahmas, Ducks, Thousands chicks, eggs, weekly. Reduced February. Laying pullets, hens. MALES HALF PRICE. Many repeat orders. Hundreds customers making money. One cleared \$305 on 48 hens, another \$617 on 110 last year. C. Beeson, Pasadena, Cal.

**Baby Chicks and Eggs**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**White Leghorn Baby Chicks**—We have cut our profit on chicks until there is very little left in order to do our part toward increasing the food supply. There are no better Leghorn chicks than ours at any price. We guarantee satisfaction. Food will win. If you would like to do your share to help lick the Kaiser, raise some chickens. Order from us. We will please you. Lyon Hatchery, Gardena, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Hatching Eggs Wanted** for spot cash. Barred Rocks, Buff Orpingtons, White Wyandottes, White Minorcas, Brown Leghorns, Anconas, Bronze Turkeys, Pekin Ducks, will accept all suitable eggs of above varieties each week. Advise how many you can supply and details of your stock in first letter. F. Lehman, 813 S. Los Angeles St., Los Angeles, Cal.

**For Sale**—Wyckoff & Son White Leghorn cockerels for sale, \$3.00 and up. 3 Ancona cockerels \$3.00 and up. A few Wyckoff pullets \$2.00 and \$3.00. Eggs for setting from the following strain, Scranton R. I. Reds, Wyckoff & Son, Ancona strain Sheppard, 1 Buff Orpington cock won at local fair first. R. Keyland, East Bakersfield, Cal., Box 47, 431 Quincy St.

**Model Poultry Farm, White Leghorn** Specialists, established 1908. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Baby Chicks**—All good strong youngsters. Hatches every week. White, Brown and Buff Leghorns, Rhode Island Red, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Baby "Chicks" and Eggs for Hatching** from pure-bred McFarland strain S. C. White Leghorns. Carefully culled and Hoganized for heavy egg production, not simply "CHICKS" but stock as well. Sonoma Valley Hatchery & Poultry Yards, Sonoma, Sonoma Co., Cal., R. D. 2, Box 43, F. J. Hansen, Prop.

**Spring Chicks**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

**For sale**—We have a limited number of choice Single Comb Rhode Island Red cocks and cockerels for sale. Rich dark red surface color and red under color free from smut. Prices very reasonable. Rainescourt Poultry Ranch, Zelzah, Cal.

**Barred Rock Chicks** \$15 per 100; Rhode Island Reds, \$14 per 100; hatching every week. Can supply most any number. Send for free 66 page catalogue. Pioneer Hatchery, 815 S. Los Angeles Street, Los Angeles.

**For Sale**—Buff Orpington and Buff Leghorn cockerels and cock birds. Two fine matings of Buff Orpingtons. Eggs for hatching from excellent matings. Limited number of Buff Leghorn baby chicks. W. L. Bartholomew, Chino, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

**Hatching Eggs**—S. C. White Leghorns. Bred-to-lay hoganized birds from Pine Tree Strain. Fertility guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns**. Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns**, "Quackless" White Muscovy dux, White Embden goslings, stock, eggs and babies. Stamp for prices. White Star Hatchery, Kerman, Cal.

**For Sale**—200 Egg Breeding Cockerels, vigorous White Leghorns of the high egg producing type, \$3.50 or 3 for \$10. Only a few left. R. C. Gibson, Newhall, Cal.

**10,000 R. I. Red Baby Chicks Per Month**, first class stock, \$12.50 per 100, 500 for \$60. We do not ship less than 100. Order early. Can ship every Monday. A. G. Rowe, Inglewood, Cal.

**"Eastman's-Bred-To-Lay"** Hoganized, Trapnested, Barred Plymouth Rocks, Spring Chicks, Eggs: Fairmead Poultry Farm, Fairmead, Cal.

**Trapnested White Leghorns**—Ours were the only California 200 egg layers in 1917. All Northwest Egg Laying Contest. Hudson Poultry Farm, Escondido, Cal.

**For Sale**—Pea-fowl and fancy pheasants. Box Y, Watsonville, Cal.

**For Sale**—A few choice White Orpington cockerels. N. H. Vogt, Vacaville, Cal.



SEEDS AND PLANTS

**Alfalfa Planters. Read This Pamphlet.** "Important Facts About Alfalfa Seed." Write for it before purchasing your seed. There are many kinds of alfalfa seed. For best results you should plant the one best suited to your conditions. Write today, describing your soil and moisture conditions and receive free pamphlet, samples and prices. Desk B, Bomberger Seed Co., Modesto, Cal.

**ORDER YOUR SEEDS NOW** If you are going to need any seed for next season now is the time to render your order. It may be impossible for you to buy what you need later. V. A. Peterson Alfalfa Seed Co., Arbuckle, Cal.

**ALFALFA SEED OUR SPECIALTY** For Sale—Fancy White Rose seed potatoes in lots of 25 to 500 sacks. These potatoes were planted July 20 to 25, therefore ripe before frost. Price \$2.50 per cwt. f. o. b. Duarte. H. Vosburgh, Box 46, Duarte, Cal. Phone Blue 235 (Monrovia).

**Alfalfa Seed—Common variety, hairy and smooth Peruvian.** Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

**Strawberry Plants—Thoroughbred Strawberry plants.** Early Ozarks, Gold Dollars, Wm. Belts, Goodells, Improved New Orleans, \$2.50 per thousand. J. Christiansen, Route 2, Canby, Oregon.

**Rhubarb Plants—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00, Wagner's Giant Crimson Winter \$3.00, 50 cents per dozen. Currier Bulb Co., Seabright, Cal.**

**Seed Potatoes—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc.** Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**For Sale—Four to six quarts fresh, selected citrus trifoliata seeds,** prompt delivery at \$1.25 per quart. Address Trifoliata Seeds, care Cultivator.

**Rhubarb—\$1127.00 from one acre.** A crop every month of the year. Write to me and I will tell you how you can do as well. J. M. Stone, Lodi, Cal., Route 4.

**5000 Yellow Calla Bulbs—Elliotiana, 5000 Asparagus roots.** William Richard, Santa Cruz, Cal.

**Mr. Alfalfa Grower—If you want good seed at the lowest price, write me for samples and prices.** Smooth Peruvian a specialty. O. C. Nordahl, Bard, Cal.

**Sour Orange Seed—2 1/2 bushel dried,** will pass California rulings. \$25 per bu. T. A. Tice, Osteen, Florida.

**Roses—50 cents per dozen.** Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

**New Crop Alfalfa Seed now ready.** Not the lowest in price, but high in quality. Leo Turner, Yuma, Arizona.

**Strawberry Plants—Everbearing Northern grown, strongly rooted.** Price list free. F. I. Moffett, Ellensburg, Wash.

FARM LANDS FOR SALE

**For Sale—40 acre date and alfalfa ranch** in Coachella Valley near Indio. Owner drafted and must sell at once. Good pumping plant and 12 inch pipe line. 3000 date palms, figs, grapes and ten acres alfalfa. Tools, team, cows, turkeys and chickens, \$5000 cash or terms. Would consider trade for unimproved California land. R. H. McDill, Indio, Cal.

**For Sale—450 acres of the choicest land** in the San Joaquin Valley situated one mile from Lemon Cove on the electric line; plenty of water. This property is without doubt the finest piece of land in the valley and beautifully situated. Will dispose of this property at a sacrifice. Inquire Owner, 224 Byrne Building, Los Angeles.

**Big Cut in Price of Farm Land in the** best agricultural part of Snohomish County. \$25 to \$35 per acre; 10 yearly payments; railways, mills, factories, plenty of labor. The best proposition on the market for the man who wants a farm. Send for illustrated literature. Brownell Land Co., 904 Third Ave., Seattle, Wash.

**For Sale, 5, 10, 20 acres with water,** San Fernando. I have 600 acres of the finest land in the San Fernando Valley at vastly reduced prices and on very easy terms. Henry Haack, owner, 224 Byrne Building, Los Angeles.

**For Sale—160 acres \$3500.** Make excellent hog, dairy, alfalfa, fruit, nut ranch. 60 acres level bottom, abundance water. \$2000 down, no traders. Fine climate, plenty rain. Owner Carl Dewlaney, Santa Margarita, San Luis Obispo Co.

**Arizona—A few sections of Arizona** school lands for sale on long time and easy terms. Cheaper than homesteading. Water conditions good. Particulars T. C. Davison, Box 101, Ontario, Cal.

**Oregon, California Government Lands—**Booklet Free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

**Free List of Monterey County bargains** Bohannon Realty Co., King City, Cal.

AGRICULTURAL IMPLEMENTS

**IMPLEMENTS AND RANCH SUPPLIES.** Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC., The Yellow Front. Established 1892 112-118 S. Los Angeles St. Los Angeles

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ENGINES

**Several New and Slightly Used Engines.** ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

CATTLE

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and** Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. F. Dwyer and W. S. Guilford, Owners.

**For Sale—Registered Guernsey bull** calves out of high producing cows and sired by splendid bull. Reasonable prices and terms. Use a Guernsey bull on your grade cows and secure heifers that will produce butterfat at real profit. Elmdale Guernsey Farm, P. J. Weisel, Santa Fe Springs, Cal.

**Guernseys—We will sell stock from our** prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., Cal.

**Pedigreed Bull Calves, Registered \$50.00,** unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

**Registered Holsteins out of A.R.O. Dams.** Grandsons of King Korndyke Hengerveld Ormsby who has 20 A.R.O. daughters with records of over 23 pounds. Look up this sire. Geo. Kounias, Modesto Farms, Modesto, Cal.

**D. O. Lively Stock Farm, Inc., 215 Hobart** Bldg., San Francisco. Breeders of Hereford cattle. A few choice heifers for sale. We buy and sell live stock on commission. Farm at Mayfield.

**For Sale—Four young registered Hol-**stein-Friesian bulls ranging from two to 12 months old. Write Geo. C. Roeding Co., Fresno, Cal., for particulars.

**Venadera Jerseys, the herd with official** yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Veramont Stock Farm—Pure Bred Here-**fords. Only 2 pure bred and 2 grade bulls left. One 11 month Hampshire ram. Prices right. H. M. Barngrover, San Jose.

**Registered Holstein Bulls from high pro-**ducing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, Cal.

**For Sale—Fine Grade Holstein calves** from registered bulls, \$16.00 crated, also registered bull calves. P. L. Blaine, 4314 Moneta Ave., Los Angeles, Cal.

**Ayrshires (registered)—A few young** bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Ariz.

**Young Holstein Bulls, bred right, grown** right, priced right. Creamcup Herd. M. Holdridge, Modesto, Cal.

**Sunshine Farm Jerseys—Bulls from of-**ficially tested dams for sale. E. E. Greenough, Merced.

**Registered Holstein Bulls of various ages** for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys—Both sexes for sale.** J. R. Carhart, Fullerton, Cal.

MACHINERY

**WHY BUY NEW? SAVE HALF** Material guaranteed. It's second-hand after used few times; but not worn out. USED AND NEW GALV. AND REDWOOD TANKS—2000, 3000, 4000, 5000, 6000, 10,000, 25,000-gal. redwood, about half-price; new 1000-gal. galv., \$35; 2000, \$48; used 5000 galv., \$75; 17,000 galv., \$250; 25,000-gal. redwood, \$95; many others guaranteed.

**PUMPS, CENTRIFUGAL, rotary, single,** double-acting deep well pumps. Brass cylinder, all sizes; old-style pump head, 18-inch stroke, \$38; large size Bulldozer, 20-inch stroke, \$78; 24-inch Stearns pump, \$75; 2, 3, 4, 5 hor. centrifugals. No. 5 two-stage horizontal B. & J. good as new, cost \$400, our price, \$150; 25 others. Engine snaps: 2 1/2 h., \$39; 8 Foss, \$115; 18 Fairbanks, \$275; 20 h. Lambert, \$275. Many others.

**WINDMILLS, SPECIALLY PRICED** 8, 10, 12, 16-ft. sizes. Pump as much water as new ones, at half price; costs nothing for fuel. 900-GAL. WAGON TANK AND WAGON. \$90; 700-gal. galv. wagon tank, \$48; slip. \$5; lawn mower, \$6; low down tank pump, \$6; diaphragm pump, \$16; broadcast seeder, \$13.50; 60 ft. 8-in. riveted pipe, \$25; 4 gang Stockton plow, \$28; 8-ft. orchard disc, \$37.50; 14-in. sidehill plow, \$14; weeder, \$14; power sickle grinder, \$9; 4 gang 10-in. mouldboard, \$25; 4 gang and 5 gang Flying Dutchman disc plows; 10-ft. Hoosier grain drill, \$95; 6-ft. beet drills, \$50; double disc cultivator, \$45; 2 gang disc plows, \$45; 4 row beet planter, \$55; 4 row beet or bean cultivator, \$38. disc plows, \$45.

**RANCH MACHINERY** Walking plows, \$4 to \$14; mowers, \$35 to \$45; 10-ft. rake, \$22; 5-ft. Fresno, \$14; two-wheel scrapers, bone grinders, 150 new discs for plows, half price. Harrows, cultivators, 2-in. cable, 6c; belting, sundries. DEMMITT CO., downtown office, upstairs, 120 N. Main. Yards, 816 Yale, Los Angeles.

**REMANUFACTURED PIPE** All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. WEISSBAUM PIPE WORKS, 169 Eleventh St., San Francisco.

**For Sale—My new 20-40 C. L. Best** Tracklayer, No. 464D. Built December, 1917. For particulars address H. P. Mohr, Amador Valley, Alameda County, Cal. Pleasanton P. O.

**Gasoline Engines, the largest stock of** used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale—Gas Pull 15-30 Rumley Tractor** plow, 5 ton tractor wagon, cook house, all good as new, cost \$2800, want \$1500. Chas. F. Thompson, Route B, Box 44, Bakersfield, Cal.

GEESE

**Toulouse Geese—Trio and Gander Want-**ed. State very lowest price. "Geese," Post Box 324, San Diego, Cal.

AUTOMOBILE STORAGE BATTERIES

**Titan Batteries for Service, get our** prices before buying or having an old battery repaired. Call or write. Olive Street Electrical Co., 910 South Olive St., Los Angeles, Cal.

FOR EXCHANGE

**For Exchange—1600 acres, most of it well** timbered with expensive woods. Republic of Panama, four miles from Atlantic Coast, for farm or stock ranch in Central or Northern California. E. B. Goodrich, 337 S. Hill St., Los Angeles.

Household Department

TO THE SIERRA NEVADA

Written for California Cultivator  
By Mrs. Guy Halley

O, thou mountains of unvarying splendor,  
Whether it be morning's sun-kissed glory  
Or sunset's shadowy veiling mists  
Showing me the wonder of Nature's story,  
I love thee still.

Or mayhap thy crowns by light swirling  
clouds  
Are made fanciful to behold,  
Or anon the dark clouds, low 'round thy  
sides,  
Are cleft with the lightning's flame of  
gold,  
I love thee still.

Perhaps all on a hot summer day,  
Amongst the dry herbage on thy sides,  
Volumes on volumes of dense smoke  
arise,  
And between the insidious fire fiend  
glides,  
I love thee still.

To me in this fertile valley,  
O mountains! you are a constant de-  
light;  
Ever changing yet ever the same,  
You seem to speak of God's wonder and  
might.  
And O, I love thee still.

THE CAKE THAT WAS NEVER CUT

**T**HE chores were all done, the kindling was drying by the stove for morning, a pan of corn for the chickens was drying in the oven, and Cyrus, seated by the kitchen fire, was shelling beans while Molly washed the supper dishes. Whenever they had talked with each other during the day it had not been about their real thoughts and feelings; for their thoughts and feelings found expression in a sympathetic understanding rather than in words.

It had been a bright and warm October day. The smoky haze, settling low over the marsh and corn fields, gave the distant hills a blue cast and made the sun look like a big ball of fire. The white strings of cobweb, drifting here and there, had gathered on the fences, corn shocks and the remaining stalks of weeds. But the cold air of the evening gave promise of a heavy frost.

After finishing the supper work, she sat by the kitchen fire to knit; and Cyrus, having shelled his usual stint of beans, went out to the barn to see that everything was all right before he went to bed.

"Roxy, you are lonesome since your master went to war," said Cyrus, giving his son Ned's driving horse a little extra feed.

Roxy whinnied plaintively.

Molly had been up in the attic after dinner that same day to see the wooden cradle Cyrus made in which she had rocked Ned to sleep so many, many times; and it seemed to her that his cooling call and sweet smile lingered in it still. She was living over again the good days of early family life—the days of golden curls, bare feet, Christmas stockings, and boyish experiences sad and pleasant that are recorded only in a mother's love. Now, in war time, everything was so foreign to her plans and unrelated to her faith that she could not think it through, although her thoughts followed her son across the dangerous sea to somewhere in France. That word "somewhere" was so indefinite! The uncertainty of it all became more distracting as she quietly went up to Ned's room where she had so many times kissed him good-night. Down deep in her heart she was proud of her brave soldier boy; and she would not have it otherwise; but she was learning the cost and joy of sacrifice.

She opened Ned's Bible they had given him one Christmas and read a verse that he had marked: "For God so loved the world, that He gave His Son—" and then, resting her head on her folded arms across his Bible, there came to her a helpful assurance that Old Glory was waving over him and that he could not go beyond his Father's love.

"Come," Molly," Cyrus softly said. "let's light the candles."

"It was 28 years ago today," she replied, "that Ned was born."

"Yes; I have been thinking about it all day."

They stood by the dining table, close to Ned's portrait, and watched 28 candles burn away on a birthday cake that was never cut.

Next day the rural carrier brought Cyrus a letter with a foreign postmark, and in it was this statement: "Your son has been decorated with the French Cross of War for valor. He is in the hospital, slightly wounded, but will soon be out again, as well as ever. He sends his love to you and says: 'Kiss mother for me and tell her I'm coming home on a furlough next month.'"

Cyrus read the letter in two winks, delivered it and the kiss to Molly in two jumps, and then, to hide his feelings, he rushed to the barn, hugged Roxy, and gave her an extra measure of oats from "somewhere in France." —LeRoy C. Patch in Farm Journal.

EAT POTATOES

The United States food administration is planning a consistent campaign to increase the use of Irish potatoes. Grocers will be urged to inaugurate a "potato day" each week, selecting whatever day is slack in deliveries and making a special price for potatoes delivered on that day. Housewives will be asked to buy potatoes, a week's supply, on potato day. The administration wishes to place the Irish potato, every day in the year, on every table in America.

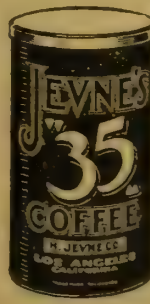
VANITY FAIR

Across the Hall: "Say, Bill, can I borrow your dress suit?"

Back Again: "Sure. Why the formality?"

The Other One: "Well, I couldn't find it."—Chaparral.

Have you told your Grocer yet? "Send Me Jevne's '35, Coffee"



All good housewives now use Jevne's "35," Economical

- Perfectly Blended
- Full Flavored
- Taste is Excellent

A pound of Jevne's Coffee goes further than any other coffee we know of.

Your grocer will supply you

**H. JEVNE CO.**  
LOS ANGELES



## It takes the fuss out of breakfast

**T**HANKS to Ghirardelli's—breakfast-making is not the job it used to be. There's no fuss—no muss—no time lost.

If a chocolate pot does not happen to be handy—you use an ordinary stew-pan. It takes but a minute or two. And then—you have the most delicious of all food-beverages steaming hot, ready to serve.

An ideal blend of ideal foods—cocoa and pure sugar—Ghirardelli's supplies the maximum nutriment at minimum cost. Always keep a can on hand.

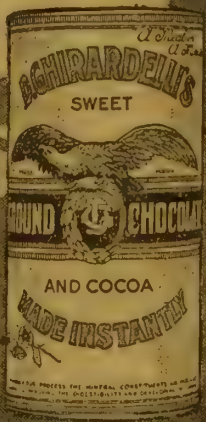
In  $\frac{1}{2}$  lb., 1 lb. and 3 lb. cans; a  
tablespoonful—one cent's worth—  
makes a cup.

D. GHIRARDELLI CO.

Since 1852

San Francisco

# Ghirardelli's Ground Chocolate



## Get the Light and Power You Need

from your own generating plant

The UNI-ELECTRIC lighting system will put electric light in every room in your house, will run your sewing machine, electric iron, vacuum cleaner, churn, washing machine, etc.

It is Economical and Efficient—Always Ready

Operates with a silent gasoline engine of high speed, generator and automatic governor. Uses standard globes and fixtures. Is easy to install. Can be used for one or more houses, barns, sheds, workshop and any place where you need light and power.

Write today for illustrated catalogue to

**Karl A. Hedberg**

104-106 Clay Street

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**THE ORIGINAL CHEMICAL**  
**Indoor Closet**  
30,000 SOLD—FIFTH YEAR  
**More Comfortable,  
Healthful, Convenient**  
Eliminates the out-house, open vault and cess pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

**ABSOLUTELY ODORLESS**  
Put It Anywhere In The House  
The germs are killed by a chemical process in water in the container. Empty once a month. No more trouble to empty than ashes. Closet absolutely guaranteed. Guarantee on file in the office of this publication. Ask for catalogue and price.

**ROWE SANITARY MFG. CO., 1701 3rd ST., DETROIT, MICH.**  
Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

**PRICES PAID BY  
US FOR RAW  
FURS ARE  
EXTREME-  
LY HIGH**

Write for Price List

**E. R. SKINNER & CO.**  
1121 FRONT STREET SACRAMENTO, CAL.

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Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices

Per 1000

10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

**Yucca Manufacturing Co.**

1380 Willow Street, Los Angeles, Cal.

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OF EVERY DESCRIPTION

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## MY IDEAL FARMER'S HOME

By Mrs. A. C. Pickett



RS. PICKETT wrote: "Use this in any way you choose. I read it at our Horticultural Club meeting at Riverside 15 or 20 years ago. This club, by the way, was the first club of the kind in Southern California. It was organized by my father, J. H. Reed. I copied the paper and changed it some. I wish the subject might be written on by others; also 'Working Clothes,' 'How to Interest Children in the Real Farm or Orchard Work,' 'The Literature a Farmer Should Have.' These and many more points as practical would be helpful to many. Yours with appreciation."

Only too well do I realize how much easier it is to write about such a home than to maintain one. But if we never aim at our mark we surely will never hit it! Our Ideal Farmer is not ambitious for wealth in money or lands. He is not forever longing for more land on which to raise more crops to buy more land, ad infinitum. He has a desire to own his home free from debt, to save some for the possible "rainy day," also to help educate his children. He is wise enough to know if they also help, the education will be of more value to them. His boys and girls will receive an education that will equip them for the life of an intelligent farmer, or any other work they desire. They will not leave the farm because it is an unattractive life.

What other occupation gives a man more time to become actually acquainted with his own family? This is denied the wealthy business man of the city, living in a splendid suburban home.

The Ideal Farmer will give himself as well as his earnings to promote the happiness of his family.

The house will be pleasant and as hospitably large as means will allow.

In California verandas are almost a necessity; very plain ones by the help of vines and roses can be made bowers of beauty.

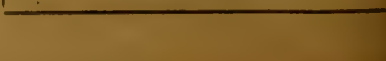
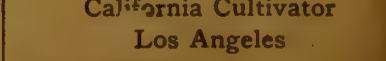
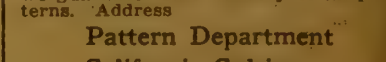
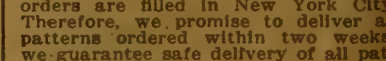
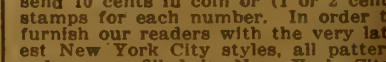
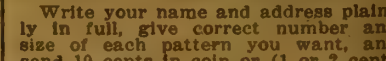
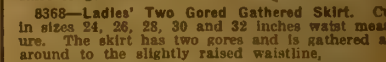
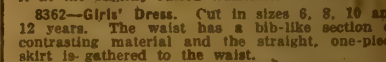
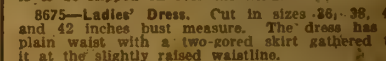
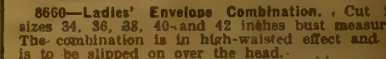
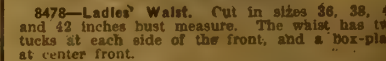
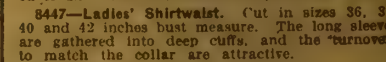
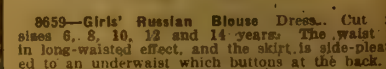
We are benefactors to our community, even, if we do nothing more than make the exteriors of our homes attractive and hospitable in appearance.

This does not require wealth; often the humble cottage with its bright and tidy dooryard, rose covered porch, pretty curtains impresses the passerby more pleasantly than does the stately mansion with its extensive grounds. Nothing adds to the beauty of the dooryard in California as does a plot of grass; even a neatly kept lawn of the despised "devil grass" is better than none. If I could only have one, I would choose grass rather than flowers, but no such choice is necessary; there are many nooks and corners for our flowers.

Inside our Ideal Home, pure air and sunshine will abound. There will be no furnishings so grand and fadeable that they must be kept from the sunshine, which, without money and without price, adds more cheer and beauty to our winter living rooms than anything we can purchase. Still it is in the country that we more often find the "best room" dark and dreary with a funereal air and unused appearance.

In one large city statistics show one divorce to every six marriages. One writer claims that "keeping warm on climate" is one reason for such a condition. The husband comes home from work and, after the meal is over, finds the living room too cool for comfort and not cold enough to bother with a fire, so he goes down town to

## The Cultivator Patterns



8659—Girls' Russian Blouse Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The waist is in long-waisted effect, and the skirt is side-plaited to an underwaist which buttons at the back.

8447—Ladies' Shirtwaist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The long sleeves are gathered into deep cuffs, and the turnovers to match the collar are attractive.

8478—Ladies' Waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The waist has two tucks at each side of the front, and a box-plait at center front.

8660—Ladies' Envelope Combination. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The combination is in high-waisted effect and it is to be slipped on over the head.

8675—Ladies' Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The dress has a plain waist with a two-gored skirt gathered at it at the slightly raised waistline.

8362—Girls' Dress. Cut in sizes 6, 8, 10 and 12 years. The waist has a bib-like section of contrasting material and the straight, one-piece skirt is gathered to the waist.

8368—Ladies' Two Gored Gathered Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The skirt has two gores and is gathered all around to the slightly raised waistline.

**PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.**

**HOW TO ORDER PATTERNS**

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City.

Therefore we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

**Pattern Department  
California Cultivator**

**Los Angeles**



"see a man." The wife is comfortable while about her housework, but when she sits down to rest or read is also too cool, so she runs in to chat with her neighbor or goes shopping.

The home thus becomes a mere lodging house and restaurant and arrangement follows.

Be that as it may, our Ideal Home will have some comfortable spot where the family may gather at all seasons. A "smelly oil stove" is better than no heat, a stove better than that, and an open fire best of all.

In summer the veranda comfortably furnished with hammocks, easy chairs, pillows, etc., makes a delightful place for the family and their friends; if screened it is still more pleasant.

There will be games, music, pictures (good ones) and books in our Ideal Home.

Public libraries are splendid and of great use to the farmer's family, but even when accessible they do not take the place of the home library, where the books look down, from their places on the shelves, like old friends. They are where they can be frequently referred to, where we can read according to our mood. Some books that we have read and re-read and read again, marked sometimes by hands long since still, become more precious with time, even the worn and faded bindings we would not exchange for new.

There will be magazines and papers to suit the taste of all. If our farmer can afford city dailies let them be as clean as can be procured—better be a few days behind the times than smirch our children's minds with the vile stuff printed under the head of news!

The Ideal Farmer can not get along without his farm paper—"California Cultivator," of course, giving market reports, up-to-date methods, etc.

He procures and carefully files government reports and bulletins, having them convenient to consult. The mother enjoys the household department. She also has her own magazines, and what is better for boys and girls than "The Youth's Companion"? Generally the whole family read it.

Our Ideal Family will not be dressed in the proverbial "blue jeans" or denim nor the "lank calico dress" and slat sunbonnet. They will dress neatly and becomingly and never be taken for scarecrows in their own gardens!

If it is necessary for the women and girls to help with outdoor work, I advocate a gymnasium suit; then light outdoor work becomes a healthful pleasure. Where the wife is cook, seamstress, nurse and maid-of-all-work, it becomes necessary to choose between an immaculate house and a cheerful atmosphere—the latter rules in the Ideal Home.

Flowers are so abundant in California that the busy housewife often considers it a waste of time to have cut flowers in the house, but they make more beautiful decorations than flowers worked on cloth. The time spent gathering and arranging them is far better for health, eyes and spirits than the same time spent bending over fancywork. However, fancywork does make the home dainty, makes lovely gifts, and often rests mind and fingers.

There should be in every home well-cooked food. Too often it is not appetizing in the farmer's home, where it could be the very best. Variety at each meal is not necessary, but monotony is not necessary either. Clean linen, pretty dishes, fresh flowers exert an unconscious refining influence. In our Ideal Home there

will be welcome guests, and if they are worthy they will share the real everyday life of the family, not an artificial one donned for the occasion. There will be no attempt to ape city ways for city guests; what they love, for a change, is genuine country life.

In this home the week's work will be finished by sunset on Saturday night. Tools will be in their places and everything clean and in order, both indoors and out, so the Sabbath may truthfully be a day of rest.

"To Adam, Paradise was a home; to the good, among his descendants, home is a Paradise!"

#### IDEAS WANTED

Be Sure to Read This!

Look over the letter at the beginning of Mrs. Pickett's article. She has suggested there a number of subjects for discussion which are of personal interest to all of us. Let us hear your views on one or all of them.

For some months we have discontinued our monthly contest feature, making only the offer of three months' extension of subscription for hints furnished. That will be continued as a regular feature, but in addition we will have a February contest of short

articles on any one of the subjects suggested by Mrs. Pickett.

#### Prize Offers

For best article, \$2.00 cash; for second best, \$1.00 cash; for all published, extension of subscription to California Cultivator for from three months to one year, according to article.

Articles will appear in the issue of February 23 and should be mailed to the Household Department, California Cultivator, Los Angeles, before Tuesday, February 12.

Please write on one side of paper only and with your article send name and address of one to whom you wish extension of subscription credited.

#### MORE IDEAS WANTED

A subscriber has requested a variety of recipes for making sandwiches. Here are two, but we want more.

For recipes sent to this office, Household Department, California Cultivator, Los Angeles, will be given three months' extension of subscription for all published. With recipe send name and address of one to whom you wish extension credited.

Please do not send more than two recipes; pick out two that you like

yourself and tell us how to make them.

#### Two Good Sandwiches

This one is made with war bread. Cut thin slices of the bread. Prepare crisp lettuce leaves. Stir in to peanut butter enough water to make a thick cream. Add a little salt to taste. Spread on both sides generously. Place lettuce leaf between and press flat with palm of hand. Cut in two with sharp knife.

Another: Use white bread for this, toasted on one side. Mix a little anchovy paste in thick sour cream. No seasoning is required. Spread on untoasted sides of bread and place together. These are delicious for lunch or supper. Serve immediately, of course, while toast is hot.

Anchovy paste by the way is a good thing to keep on hand. It comes in a tube like vaseline and is pressed out in the same way. It is highly concentrated and will keep months, almost indefinitely in a cool place. It adds delicious flavor to salads and relishes. A large tube costs 25 cents.

#### CLOSE FRIENDS

"It is indeed hard," said the melancholy gentleman, "to lose one's relatives."

"Hard!" snorted the gentleman of wealth. "Hard! It is impossible."—Town Topics.



He Does Better Work  
With Lalley-Light

## Three Moving Parts Instead of Sixteen

On thousands of farms, Lalley-Light is known especially for its constant reliability, its economy, and its long life. Because of the engine's extreme simplicity it has gained this national reputation.

Where the ordinary electric-light-plant engine has sixteen moving parts—often more—our engine has only three. In fact, there is no other light plant that we know of which compares with the Lalley on that score.

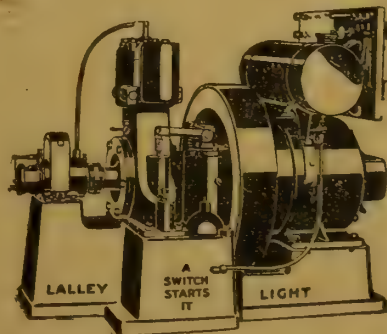
Think what such simplicity adds to the life of Lalley-Light—what it saves in wear and tear, adjustment and repairs.

Lalley-Light engine was designed especially to run a direct-connected electric generator.

It has big ball bearings at every point where split babbitt or roller bearings are commonly used. It has sure-fire magneto ignition. It is water-cooled.

It runs with steam-engine steadiness. That is why light direct from the generator is as unflickering as from the battery.

There seems to be no wear-out to this engine. Lalley-Light plants installed more than seven years ago are giving today the same good service they gave in their first year. This record shows Lalley-Light reliability as nothing else can show it. Lalley-Light brings electricity to the farm—unlimited light and power in their safest, surest and simplest form.



Generating plant is 27 inches long, 14 inches wide, 21 inches high. Storage battery is included in complete outfit.

It gives you clean, bright light whenever and wherever you want it. Its power will run the pump, separator, churn, grindstone and other small machinery at a cost of a few cents a day.

Lalley-Light furnishes electric current from two independent sources—generator and storage battery—actually giving the service of two plants for the cost of one.

It saves labor and improves living conditions. It increases the value of your property; it reduces fire risk and insurance rates.

This is the time to figure on installing Lalley-Light.

Write us for the illustrated booklet describing completely, Lalley-Light for your home.

If you desire, we will also advise the name of our nearest branch sales office who can show you this efficient plant in operation.

Lalley-Electro-Lighting Corporation  
1858 Mt. Elliott Ave., Detroit, Mich.

# LALLEY-LIGHT

THE BALL-BEARING ELECTRIC LIGHT PLANT



## Los Angeles Market

Los Angeles, Jan. 23, 1918.

## BUTTER

Produce Exch. Quotations.  
Prices to trade 1½ to 3 c higher.  
California extra creamery ..... 52  
Dairy Exch. prices past week:  
Jan. 16 17 18 19 21 22  
'18 ... 52 52 52 52 52 52  
Rcts. wk. ending Jan. 22, 309,600 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. .... 26  
Eastern Daisies ..... 28½  
Tillamook Trip ..... 27  
Domestic Swiss ..... 42

## EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extra ..... 58  
Pullet ..... 54  
Case Count ..... 54  
Dairy Exch. prices past week:  
Jan. 16 17 18 19 21 22  
'18 ... 58 58 58 58 58 58  
Rcts. wk. ending Jan. 22, 1425 cases.

## POULTRY

We quote to producers:  
Broilers ..... 34@36  
Fryers ..... 28  
Hens—Leghorns ..... 25@28  
Roasters, 3 lbs. and up ..... 26  
Ducks, lb. .... 20@25  
Roosters, old ..... 15  
Turkeys ..... 25@28  
Geese, lb. .... 20

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning January 23, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000 to 1100 lbs. 8.50@9.00  
Heifers, good ..... 6.00@6.50  
Cows, good ..... 5.50@6.00  
Canners ..... 4.50@5.00

Hogs—  
Av. 125 lbs. .... 14.50  
Av. 150 lbs. .... 15.00  
Av. 175-200 lbs. .... 15.75  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers ..... 9.50@10.00  
Ewes ..... 9.00@9.50  
Lambs ..... 14.00@14.50  
Yearlings ..... 10.50@11.00

## POTATOES

Wholesale selling price:  
Northern Burbank, cwt. .... 2.00@2.05  
Russets ..... 2.10  
Sweet, sk. .... 4.00@4.25

## ONIONS

Wholesale selling price:  
Brown ..... 2.50  
White ..... 2.75  
Garlic ..... 7

## VEGETABLES

Wholesale prices:  
Artichokes, doz. .... 1.25@1.35  
Beans—Wax ..... 17  
Limas, lb. .... 17  
Ky. Wonder ..... 16@17  
Beets, sk. .... 1.50  
Brussels Sprouts, lb. .... 12@14  
Cabbage, lb., 2½; sk. .... 1.50  
Red, lb. .... 4½  
Carrots, doz. .... 30  
Cauliflower, doz. .... 85  
Celery, cr. .... 3.50@3.75  
Cucumbers—Hothouse, doz. .... 1.50@1.75  
Egg Plant, lb. .... 12  
Horseradish, lb. .... 15  
Lettuce, doz. .... 30  
Leeks ..... 30  
Onions, green, doz. .... 25  
Peas, lb., Telephone ..... 10@12  
Peppers, Chili, lb. .... 12  
Parsnips, doz. .... 40  
Parsley, doz. .... 20  
Pumpkins, lb. .... 20  
Radish, doz. .... 25  
Rhubarb—Strawberry ..... 1.25@1.35  
Romaine, doz. .... 40  
Spinach, doz. .... 25  
Squash—Crockneck ..... 70@75  
Hubbard, lb. .... 2  
Tomatoes, cr. .... 1.25  
Turnips, doz. .... 35

## FRUITS

Wholesale prices:  
Apples—Bellflowers ..... 1.50@1.75  
Greenings ..... 1.85  
Jonathan ..... 1.80@2.25  
King David ..... 1.75@2.00  
W. W. Pearmain ..... 1.85@1.50  
Spitzenburg ..... 2.25@2.75  
Y. Newton ..... 1.35@1.60  
Avocados, doz. .... 6.00@9.00  
Bananas, lb. .... 5  
Pears, Winter Nellis ..... 2.00@2.75  
Persimmons, lb. .... 7@10  
Pomegranates, ½ bx ..... 1.80@2.00

## CITRUS

Lemons, 4.25@5.25; juice ..... 3.00  
Grapefruit ..... 3.00  
Limes, basket ..... 1.00  
Oranges—Navelis, bx. .... 4.50@5.00

## DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers. (25-lb. bx., faced, 50s, ½ c less.)  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 18; extra ch., 18½; fy., 19; pears, 12½; peaches, ch., 12; fy., 12½; peeled, 15; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 16½; 30-

40s, 12½; 40-50s, 11; 50-60s, 10; 60-70s, 9½; 70-80s, 9; 90-100s, 8.  
Figs—Bulk, 25 lb. bx., blk. \$2.75, wh. \$2.75; Calimyrna, 10 lb. bx., \$2.25.

## NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. .... 24  
N. P. U. .... 23  
Hickory Nuts, lb. .... 10  
Peanuts, raw ..... 16  
Pecans, lb. .... 19  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. .... 20  
No. 2 Soft Shell, lb. .... 18  
Budded, Diamond Brand ..... 24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) ..... 21  
Prices delivered in East 1½ c higher.

## HONEY

Prices of wholesaler to retailer:  
Extr. White, lb. .... 12@14  
W. W. lb. .... 13@15  
Comb. case, W. .... 4.00@4.50  
W. W. case ..... 4.80@5.00

## RICE

Wholesale quotations:  
Cal. .... 7.50  
Broken ..... 5.60@6.00

## BEANS

These are prices made by wholesaler to retailer.  
Lady Washington ..... 13.0p  
Limas ..... 13.00  
Pinks ..... 8.75  
Manchurian Reds ..... 9.25  
Baby Mex. .... 9.00  
Garbanzos ..... 10.00  
Small Whites ..... 13.00  
Blackeyes ..... 10.00  
Tepary ..... 9.00@10.00  
Lentils ..... 25.00

## HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oats ..... 28.00@30.00  
Volunteer Oat ..... 18.00@20.00  
Wheat ..... 25.00@28.00  
Barley ..... 27.00@30.00  
Alfalfa ..... 25.00@29.00  
The Alfalfa Growers Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

## GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal ..... 2.10  
Alfalfa Molasses ..... 2.20  
Barley, Rolled ..... 3.35  
Barley, Recleaned Whole ..... 3.40  
Barley Hulled ..... 4.00  
Beet Pulp ..... 2.05  
Brant (Light) 65 lb. sk. .... 1.95  
Cocunut Meal ..... 2.60  
Cottonseed Meal ..... 3.50  
Corn, Yellow ..... 4.45  
Corn, White ..... 4.55  
Corn, Cracked ..... 4.50  
Corn, Egyptian ..... 3.85  
Corn Feed Meal ..... 4.55  
Mixed Feed (80 lb. sacks) ..... 2.12½  
Milo Maize, Field Run ..... 3.40  
Oat Chop ..... 1.90  
Oats, White ..... 3.60  
Oats, Rolled White ..... 3.65  
Oats Hulled ..... 4.75  
Oats Rolled Chicken Groats ..... 4.85  
Oats Eastern Red ..... 3.60  
Oatcake Meal ..... 3.75  
Red Dog ..... 2.65  
Rye ..... 4.10  
Blood Meal ..... 5.00@5.10  
Bone, Green ..... 2.75@2.85  
Bone, Dry ..... 2.95@3.05  
Buckwheat ..... 5.00@5.10  
Canada Peas ..... 6.40@6.50  
Charcoal, 50 lb. sk. .... 3.40@3.50  
Clam Shell ..... 70@95  
Grit Granite ..... 75@85  
Hemp ..... 5.50@5.60  
Oyster Shell ..... 1.35@1.45  
Red Millet ..... 4.65@4.75  
Sunflower Seed ..... 5.15@5.25  
Soya Bean Meal ..... 3.50@3.60  
Scratch Feed ..... 3.90@4.00  
Scratch Gritless ..... 4.10@4.20  
Vetch ..... 5.10@5.20  
Rice Bran, ton ..... 40.00  
Middlings, ton ..... 45.00  
Rice Polish, ton ..... 49.00

## San Francisco Markets

San Francisco, Jan 22, 1918.

## BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:  
Two-pound squares, parchment wrapped, ½ c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½ c to 2½ c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Fresh extras ..... 54½  
Prime firsts ..... 51  
Dairy Exch. quotations past week and year ago:  
Jan. 15 16 17 18 19 21  
'18 ... 53½ 54 53 53 53 54½  
'17 ... 36½ 36 36½ 36½ 37  
Rcts. wk. ending Jan. 21, 423,900 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25½. Y. Am. .... 26½@27½  
Ore. Young Am. .... 26½  
Jack cheese, full cream ..... 26@27  
Half skim ..... 14@17

## EGGS

Extra ..... 66  
Selected Pullets ..... 60½  
Dairy Exch. quotations past week and year ago:  
Jan. 15 16 17 18 19 21  
'18 ... 66 68½ 65 65 64 66  
'17 ... 43 42 41½ 41½ 40  
Rcts. wk. ending Jan. 21, 14,229 cases.

## POULTRY

We quote from producers, lb.:  
Hens, large, 29@31; Leghorns ..... 29@31  
Small Colored ..... 29@31  
Broilers, 1-1½ lbs., 45@48; 1½-1½, 40; 1½-2, 32@36; 2-3, 30@33.  
Roosters ..... 29@30  
Squabs, doz. .... 4.00@5.00  
Ducks ..... 17@24  
Geese ..... 19@22  
Belgian Hares, live, lb. .... 20@22  
Turkeys, dr. .... 32@35

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ¼ to ½ c more.  
Steers, lb. 8½@10; undesirable, 6@8; cows and heifers, 7@8½; undesirable, 4@6; calves 7@9½.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 14½@14½; 140 to 175 lbs., 15@15½; 175 to 300 lbs., 15½@15½; 300 to 400 lbs., 15½@15½.  
Sheep—Wethers, 11@11½; lambs, 12½@15.

## POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbank ..... 1.40@1.75  
River ..... 1.25@1.65  
Sweets ..... 4.00@4.25

## ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown ..... 1.75@2.00  
Bermudas ..... 2.75@3.00  
Garlic, lb., new ..... 4@5

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 40@75  
Asparagus, lb. .... 17½@20  
Beets, sk. .... 1.50@1.60  
Beans, string, lb. .... 10@15  
Limas ..... 11@14  
Brussel Sprouts, lb. .... 5@6  
Carrots, sk. .... 75@1.00  
Celery, cr. .... 2.00@2.50  
Cucumbers, Hothouse, sm. lug ..... 2.25@2.75  
Egg Plant, lb. .... 8@10  
Lettuce, cr. .... 1.25@1.35  
Parsnips, sk. .... 1.00@1.25  
Peppers, Bell, lb., 10@15; Chili ..... 7@9  
Pumpkins, sk. .... 85@1.00  
Rhubarb, bx. .... 1.25@1.50  
Squash—Marrowfat, sk. .... 85@1.00  
Cream, lug ..... 1.00@1.15  
Hubbard, sk. .... 1.00@1.75  
Tomatoes, cr., 75@1.25; Mex. .... 1.75@2.50  
Turnips, sk. .... 75@1.00

## FRESH FRUITS

Apples—Spitzenburg, 1.25@2.65; Red 1.10@1.50; Newton Pippins, 1.00@1.50; Jonathan, 1.60@1.90.  
Pears—Winter Nellis bx., 2.00@2.50; winter pears, 1.00@1.50.  
Strawberries, ch. .... 6.00@10.00  
Avocado, doz. .... 1.00@3.50  
Citrus Fruits—Lemons, bx. fy. 4.50@6.50; ch. 3.50@5.00; lemonettes, 1.25@2.50; grapefruit, 2.50@3.00; ch., 2.00@2.50. Tular seedless limes, half orange bx., 1.00@1.50. Oranges: Bx., Navelis, ch. to fy., 3.00@5.00; culls, 2.25@2.75; mandarin oranges, half orange bx., 2.00@3.00; tangerines, half bx., 2.00@3.00.

## DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, lb. standard, 9½; choice, 9½; extra choice, 10; fancy, 11. Figs—in 50-pound boxes, per pound. White Adriatic, standard, 8½; choice, 9½; extra choice, 10½; fancy, 11½; Calimyrna, fancy, 15½; extra fancy, 16½. Apricots—Bulk basis: Standard, 13½; ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorparka, 17½; extra fy., 18½. Prunes—60s to 90s, 6½ basis; 50s to 60s, ½ c premium; 40s to 50s, 1½ premium.  
Apples—in 50-pound boxes, lb.: Fancy 15½; ex. ch., 14½; ch., 14½.  
Pears—Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Steady. Loose muscatels, 9@9½; ch. to fy. seeded, 9½@10½; seedless, 9@10½; London layers, 1.80.

## NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. X. L., 19½; Ne Plus, 18½; Drakes, 16; hard shell, 11½.  
Chestnuts, Cal. lb. .... 10@20  
Peanuts ..... 11@12½  
Pecans, lb. .... 19@20  
Pine Nuts ..... 19@20

## HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15@18.

## BEANS

Jobbers' prices, cwt., recleaned:  
Limas ..... 12.60@12.75  
Bayous ..... 8.50@8.75  
Small Whites ..... 12.00@12.25  
Mexican Reds ..... 8.50@8.75  
Large Whites ..... 11.25@11.50  
Blackeyes ..... 8.00@8.25  
Pinks ..... 7.70@7.80  
Red Kidney ..... 13.00  
Cranberry ..... 11.75@12.00

## RICE

California rice, new crop, cleaned, 100 pound head rice, 6.45@6.65; brewers, 5.10; screenings, 5.37½.

Rough rice, 100 lbs., 3.50@3.60 to growers at shipping points.

## HAY

Under date of January 19, Scott, Magner & Miller says:  
Receipts past week, 1465 tons. This is

about the average receipts for several weeks past. As a large portion of this has been brought in upon government requisitions and as nearly all of these orders have been filled it is quite natural that the receipts should drop off from now on unless the car situation is easier and more cars are obtainable in the country districts for local use. Trade in the interior districts has been very good, considerable hay moving to sections that are bare of grass to feed cattle in order to keep them from starving.

A few slight showers during the week have been of great benefit to the grass as well as crops in the sections that were favored. This applies mostly to points north of San Francisco. In the southern sections and on the ranges in the same districts the feed situation is a problem.

Fancy Wheat Hay (light 5 wire bale) ..... 29.00@30.00  
No. 1 Wheat or Wheat and Oat Hay ..... 26.00@28.00  
No. 2 Wheat or Wheat and Oat Hay ..... 23.00@25.00  
Choice Tame Oat Hay ..... 27.00@27.50  
Other Tame Oat Hay ..... 23.00@25.00  
Wild Oat Hay ..... 23.00@25.00  
Barley Hay ..... 24.00@26.00  
Alfalfa ..... 24.00@27.00  
Stock Hay ..... 20.00@22.00  
No. 1 Barley Straw ..... 60@90

## GRAIN

Grain Exchange prices, ctl.  
Corn, Cal. Yellow, cwt. .... 3.25@3.50  
W. Egyptian ..... 3.25@3.35  
Brown Egyptian ..... 3.12@3.17½  
Barley, Feed & Brewing, cwt. .... 2.85@2.90  
Milo ..... 3.15@3.22½  
Oats, Red Seed ..... 3.00@3.10  
Feed ..... 2.80@2.90  
New Black ..... 3.00@3.40  
Rye, Utah ..... 4.25  
Wheat—Government prices: Common white hard, base price is \$3.50 per cental, or \$2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft wheat, base price 3 cents per bushel less, or \$2.08 per bushel; white club (including Sonora), \$2.06 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, 3 cents per bushel reduction; if 56 to 58 pounds, 6 cents per bushel less; if less than 56 pounds, grain becomes sample grade and sells on its merits up to within 1 cent per bushel of 56-lb. wheat. Sacked wheat 4 cents per bushel more, less tare for weight of sacks.

## FEEDSTUFFS

These prices applicable to San Francisco, with \$1.00 less at Sacramento and Stockton, are for cash at the mill in carload lots, and include sackage, with an additional rate of 50 cents per ton in less than carload lots.  
Wholesale prices per ton. Prices fixed by food administration as San Francisco price; Sacramento and Stockton \$1.00 less on carlots at mill door:  
Bran ..... 34.00@35.00  
Middlings ..... 41.50@42.50  
Mixed Feed ..... 37.00@38.00  
Shorts ..... 35.00@36.00

## SEEDS

Prices in round lots, lb.:  
Millet, recleaned ..... 4½@5  
Alfalfa ..... 20@21  
Flax ..... 6@6½  
Rape ..... 2½@3

## Citrus Fruit Market

Los Angeles January 23, 1918.

Extreme weather has prevented satisfactory handling of any fruit. Prices are indifferent and some freezing in transit is noted. Lemons especially have suffered.

## Shipments

Total shipments of citrus fruits since November 1, 1917 from Southern California: Oranges, 2793; lemons, 654; total, 3447. Same date last season: Oranges, 4223; lemons, 1065; total, 5288. Central California this season: Oranges, 1838; lemons, 89; total, 1927. Same date last season: Oranges, 3590; lemons, 130; total, 4020. Northern California, this season: Oranges, 202; last season, 841.

## AT THE AUCTIONS

January 16  
New York: 2 Nav. \$2.30-\$4.20.  
Boston: 3 cars. Nav. \$2.10-\$3.80, Lem. \$1.40-\$1.60.  
Pittsburg: 4 cars. Nav. \$3.95, Val. \$3.80-\$4.20, Lem. \$6.00-\$6.65.  
Cincinnati: 1 Lem. \$1.70-\$2.75.  
St. Louis: 2 Val. 1 Lem. Val. \$2.80-\$3.45, Lem. \$3.80-\$4.75.  
Philadelphia: 1 Lem. \$2.35-\$4.25.  
January 17  
New York: 3 cars. Nav. \$3.65-\$5.50, Lem. \$3.40-\$5.00.  
Boston: 3 cars. Nav. \$4.35, Lem. \$1.15-\$5.50.  
Philadelphia: 1 Lem. \$2.50-\$4.50.  
January 18  
New York: 2 cars. Nav. \$2.05-\$5.60.  
Cleveland: 4 cars. Nav. \$2.40-\$4.80, Tang. halves \$3.15, Lem. \$4.70-\$5.30.  
St. Louis: 4 cars. Nav. \$2.80-\$4.10, Val. \$2.95-\$3.05, Lem. \$2.90-\$3.35.  
Boston: 2 cars. Nav. \$4.65-\$5.10, Tang. halves, \$1.70.  
Philadelphia: 1 car. Lem. \$1.60-\$2.65.  
Pittsburg: 2 cars. Val. \$4.25, Lem. \$5.45-\$6.55.  
January 21  
New York: 1 car. Nav. \$4.25.  
Cleveland: 4 cars. Nav. \$2.40-\$4.45, Val. \$2.60.  
Pittsburg: 3 cars. Nav. \$3.55-\$4.85, Lem. \$4.90-\$6.00.  
St. Louis: 2 Val. 1 Lem. Val. \$2.25-\$2.80, Lem. \$2.00-\$4.15.  
At Boston, Cincinnati, no same account extreme cold.  
January 22  
New York: No sale.  
Philadelphia: No sale.  
Boston: 2 Nav. 1 Val. 1 Lem. Nav. \$2.45-\$4.25, Val. \$3.45-\$3.80, Lem. \$2.79-\$3.40.



## Baby Chicks! Baby Chicks!

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Los Angeles, Cal.





Hoover says: Food is Ammunition -Don't waste it!"

### "Double the Use of Vegetables."

Help your country by raising vegetables for your own home and for market. But—to make your garden patch yield its utmost you can't afford to gamble with poor seeds. Play safe—

### Plant Morse's Seeds

soil-tested and pedigreed, large yielding and sure. Morse's Seeds for fields and gardens have been producing profitable crops for farmers for forty years.

Our 1918 Garden Guide is just off the press. It tells you all about our new varieties of vegetables and flowers—as well as the old standbys. Send for your copy today—it's free.

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### Old Style Grafting

Ruins Trees. Destroys Crops. Grafts often broken by wind. Limbs split and decay.



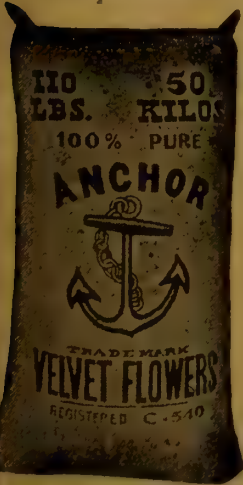
### Our Method of Side Grafting



Remedies all this. Saves wax. Saves labor. Grafts grow better and mature sooner than by any other method. It will work over your Grapes and Citrus Fruits, with practically perfect results.

Full information sent free. W. S. TUTTLE & CO. 2406 F Street Sacramento, Cal.

### SULPHUR



Fleur de Soufre Anchor Brand, Velvet Flowers of Sulphur and Eagle Brand.

Packed in barrels and double sacks are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

SAN FRANCISCO SULPHUR CO. 624 California St., San Francisco, Cal.

Two days' shipments of hogs from Sanford, Kings County, aggregated 30,000.

### MARKET NOTES

The bureau of markets is extending its service and issues a monthly report on stockyard receipts and information on shipments of stockers and feeders. In every one of the larger markets of the country there is material decline in receipts of hogs, for instance, during the first nine months of 1917, Chicago received 5,233,495 hogs. During the same period of 1916 the receipts were 6,216,943. Sheep show very much the same decline. Cattle on the other hand show slight increase. Kansas City receipts in 1917: Hogs, 1,697,290; while in 1916 there were 2,131,246. Feed is going up and hogs are growing less.

The president of Cuba has contracted with the government of the United States to send 2,500,000 tons of sugar to this country for distribution among the Allied nations. The price of the sugar delivered at the port of New York would be \$4.98½, while telegraphic reports say that for Southern Europe the price fixed is \$4.55 and for Northern Europe \$4.60.

The bean situation has been thoroughly discussed at Washington. Bean growers have been justly concerned as to the manner in which their beans are commandeered with price to be fixed at some later date. This not so much because of fear of unjust treatment as the fact that it has entirely unsettled the market and the beans which the government is not taking are unsaleable. The ruling preventing large buying has been an honest endeavor on the part of the government to prevent speculation and undue boosting of price, but a strong hand must be taken soon or great injury will be done to bean producers.

Canned goods which advanced strongly during the last few days of 1917 now show a more quiet situation.

Evaporated apples are selling more rapidly. Apricots are one-quarter cent higher, peaches are firm, and prunes, especially in larger sizes, have stronger values. The government is now placing long orders on 50s and 60s, and these sizes are extremely scarce.

Beet sugar has come to its own, and for the first time since its production in a large commercial way is selling at 10 cents per hundred in advance of cane. It is learned that the sugar situation along the Atlantic seaboard is not clearing up as rapidly as anticipated. It has been announced that most careful buying must be undertaken at least until March 1, which is the date set for relief.

Fresh apples in Los Angeles and San Francisco markets have not been plentiful, and price has shown indication of increase. In fact a 10 cent per box advance is noted. Potatoes are easier and a long supply is in sight. The shortage of refrigerator cars, with partial crop failure in many Eastern districts, is affecting apple situation.

The California Peach Growers on or about February 1 will make a second payment to growers of \$40 per ton on peaches of the 1917 crop delivered to this company. This payment of two cents per pound will apply on deliveries of both No. 1 and No. 2 stock; there will be no payment at this time on either Slab, Cling or Strawberry peaches, further payment on these grades being deferred to time of final settlement. This payment is not to be construed as final settlement, but merely a second payment on fruit delivered. Later in the year a statement will be rendered to each grower and full settlement made according to grades. Over \$1,000,000 will be distributed to the growers in making this payment. We feel it is an opportunity time to make this distribution, as the seasonal expenses incident to pruning, spraying, etc., are upon the growers.

Post card reports to the Los Angeles office of the bureau of markets of the United States department of agriculture, show shipments from California during the week ending January 21, approximately as follows: Apples, 4 cars; cabbage, 27; carrots, 1; cauliflower, 100; celery, 69; chili peppers, 1; dried fruits, 130; lettuce, 41; mixed fruits, 5; mixed vegetables, 56; onions, 12; potatoes, 94; raisins, 98; squash, 1; sweet potatoes, 6; turnips, 2.

### MORE FARM ADVISERS

A full quota of farm advisers will soon be appointed if the present rate of appointing continues. Both Dr. Coit in Los Angeles County and Professor Essig in Ventura County are fully installed, and now we have word of the appointment of Albert A. Jungerman for Stanislaus County, who will take the place of Farm Adviser C. M. Connor who has resigned to take up the same work in Tulare County.

Professor Essig's headquarters are at the Court House at Ventura. Professor Essig was for many years county horticultural commissioner of Ventura County and understands fully the producing conditions of the county.

Dr. Coit's assistants, or rather specialists, of which there are ultimately to be five, have not yet been appointed, although it is definitely settled that Mr. Hodgkin has been appointed and will take up the service within a short time. Meantime Dr. Coit is being assisted by Assistant Director W. D. Norton, a specialist who has been first or temporary adviser to many of the other advisers. The adviser's office will be room 357 Court House Building, Los Angeles.

The board of directors of the farm bureau met in Los Angeles last week and elected the following officers: P.

F. Cogswell, El Monte, president; Volney Craig, San Fernando, first vice president; C. A. Griffith, Azusa, second vice president; W. S. Rosecrans, Gardena, secretary; Ralph McNeils, Whittier, treasurer.

The committees appointed are: On publication of monthly bulletin, A. W. Frye, E. F. Underhill, Robert Neely; project, W. B. McQueen, J. W. Deupree, C. F. Richardson; re-districting, H. A. Miller, T. N. Barker, O. W. Mansly; grain sorghums, Donald Graham, Volney Craig, Frank Kepper; labor situation, Ralph McNeils, P. F. Gogswell, Floyd Pomeroy, C. A. Griffith.

### GRAPE STANDARDIZATION MEETING

A meeting of representatives of the shipping grape industry of Fresno and Tulare Counties was held in Fresno on January 11 for the purpose of reaching an agreement on uniform inspection between the two counties. The commissioners of Fresno, Kings, Tulare, Madera, Merced, Stanislaus and San Joaquin were present, also E. M. Sheehan, secretary of the state viticultural commission.

During the meeting it developed that the methods of inspection of table grapes in the two counties, to determine the sugar content, differed considerably. The inspection in Tulare County was considered by Tulare County packers to be more exacting than that of Fresno. All agreed that it was none too severe but asked for as strict an inspection in Fresno County.

Upon the suggestion of Mr. Hecke it was decided that a chief inspector be employed jointly by both counties, the expense being pro-rated according to the time spent in each county. This method was considered to be the most satisfactory solution of the difficulty because of the absolute necessity under the existing conditions of the adoption of uniform methods.

### YOUR OPPORTUNITY

The price catalogue of California fruits issued by Silva Bergholdt Company Newcastle, is headed "Your Opportunity for Pure Food Conservation." Of course the major part of the catalogue has to do with illustrations of profit making fruit trees which are grown by this great concern. The catalogue is illustrated with photos of fruits and of trees, and with it is given a fund of planting and cultural information.

### WEATHER CONDITIONS

San Francisco, Cal., January 19, 1918.

	Rainfall			Temp.	
	Wk.	Season.	Norm.	Max.	Min.
Eureka	.50	10.64	21.52	60	36
Red Bluff	.41	3.78	12.42	60	34
Sacramento	.20	2.15	9.15	60	42
San Francisco	.51	2.36	10.70	64	46
San Jose	.23	1.79	7.77	64	34
Fresno	.46	.96	4.80	64	38
San Luis Obispo	.04	1.19	8.80	72	40
Los Angeles	.16	.59	6.76	74	48
San Diego	.40	.65	4.47	68	48

## Fertilizer

Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

Rogers Brown & Co.

1307 Baker-Detwiler Building  
Los Angeles, Cal.

# STUART PRUNE

Originated by J. F. Stuart, Ripon, Cal.

Twenty-Seven Dried Prunes to the Pound

This Prune is a cross of the French prune and the Tragedy prune, into the Silver prune. The Silver prune being the mother prune. Market price of this prune is 12½ cents per pound dried. University test, 53.5 per cent sugar.

We are exclusive owners. Five thousand budded trees in stock, for sale this season. Can furnish wood for grafting. Write for prices.

We have an exceptionally nice lot of almond trees of all varieties on peach and almond root. A fine lot of Stuart prune on peach, almond, and myrobolan root; a fine lot of Blenheim cot trees, (large ones for replanting also). For prices write or call on us and see the stock. Prices are right.

## Ripon Nursery and Improvement Co.

J. F. STUART,  
President and Manager,  
Ripon, California.

# Seed Wanted

We are Large Buyers of

SUDAN GRASS

ALFALFA

WHITE BLOSSOM

SWEET CLOVER

SORGHUM SEED

WILD MUSTARD, Etc.

When Writing Send Samples and State Quantity

Aurora Seed Mill

48 North Aurora St.  
STOCKTON

Better service is assured by the advertiser if when writing you mention the California Cultivator.

## Plant Fruit Trees

Increase the value of your land. Every horticulturist on the Pacific Coast should have a copy of our new catalogue.

Write for Our Catalogue

It contains information about all varieties of fruit bearing trees.

SENT FREE ON REQUEST

FRESNO NURSERY COMPANY

Address Dept. A Fresno, California



## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

BRENTWOOD IRRIGATED FARMS, In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address

BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco





## WHEN PRICES ARE HIGH and LABOR IS SHORT

the farmer **MUST** save time and effort, not only in producing, but in hauling. The larger the load and the faster the trip to market, the greater the profit.

Good roads have always helped the farmer. Now they are indispensable. Farm labor is scarce. Wages are high. Every hour wasted on the highway cuts down output and eats a hole in profits.

What the farmer needs is not a patch of hard road here and there, but a connected system of hard roads putting him in easy reach of his markets. And to get the best prices he needs roads that stay good 365 days a year.

There is no reason why farming communities should not have perfect systems of permanent highways. It is entirely up to them. The roads can be built in two or three seasons. When the cost is spread over fifteen or twenty years the annual tax for both interest and principal is only a few cents per acre. In Vermilion County, Illinois, for example, a magnificent concrete system is being built and the annual tax is only about 8c per acre per year, for 20 years, which covers the interest and gradually pays off the debt.

The farmer should act now in getting road plans under way to further his own interests. Systems of permanent highways benefit everyone, but to the farmer they are *indispensable*.

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Offices at  
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PITTSBURGH  
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It is absolutely guaranteed—hundreds in daily use.

Write for our booklet "How Dan Ross Cuts 40 Cords a Day".

Delivered anywhere in the U. S. A. only

\$165



Wade's

Gasoline Wood Saw

4 H. P. Engine (Portable)

This wonderful invention does **TEN TIMES** the work of **TWO MEN** in the woods.

With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a 40 inch log in five minutes. Write us today.

**REWADE & CO.**  
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910 N. Howard St., Spokane, Wa.

## -MANURE-

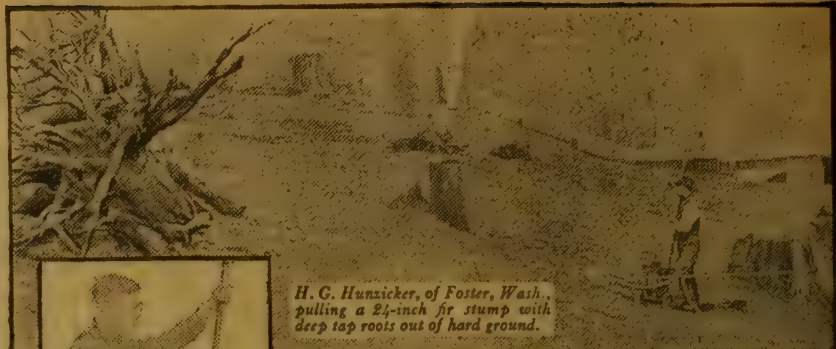
Sheep Manure, Horse Manure,  
Cow Manure and Rotted Manure

CALL OR WRITE

Pacific Manure & Fertilizer Co.

429 Davis St.

San Francisco



H. C. Hunzicker, of Foster, Wash., pulling a 24-inch fir stump with deep tap roots out of hard ground.

## This man made \$35 Land Worth \$200 an acre Pulling Big stumps by hand

**C**LEAR your stump land cheaply—no digging, no expense for teams or powder. Your own right arm on the lever of the "K" Stump Puller can rip out any stump that can be pulled with the best inch steel cable. I guarantee it. I refer you to U. S. Government officials. I give highest banking references.

### HAND POWER K Stump Puller

One man with a "K" can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of best steel—guaranteed against breakage. Has two speeds—60 ft. per minute for hauling in cable or for small stumps—slow speed for heavy pulls. Works equally well on hillsides or marshes where horses cannot go.

Write me today for special offer and free booklet on Land Clearing.

**Walter J. Fitzpatrick**  
Box 312  
182 Fifth St.  
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Showing easy lever operation



Weight, without cable, 171 pounds



**160 ACRE  
FARMS IN  
WESTERN  
CANADA  
FREE**

## Scenes of Prosperity

are common in Western Canada. The thousands of U. S. farmers who have accepted Canada's generous offer to settle on homesteads or buy farm land in her provinces have been well repaid by bountiful crops of wheat and other grains.

Where you can buy good farm land at \$15. to \$30. per acre—get \$2. a bushel for wheat and raise 20 to 45 bushels to the acre you are bound to make money—that's what you can do in Western Canada.

In the provinces of Manitoba, Saskatchewan or Alberta you can get a

**Homestead of 160 Acres Free**  
and other land at very low prices.

During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of Oats, Barley and Flax. Mixed Farming is as profitable an industry as grain raising. Good schools, churches, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

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Pulverized Limestone.....\$3.35 per ton  
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Most California Soils. Write for Booklet  
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640 Title Insurance Bldg., Los Angeles, Cal.



# CALIFORNIA CULTIVATOR

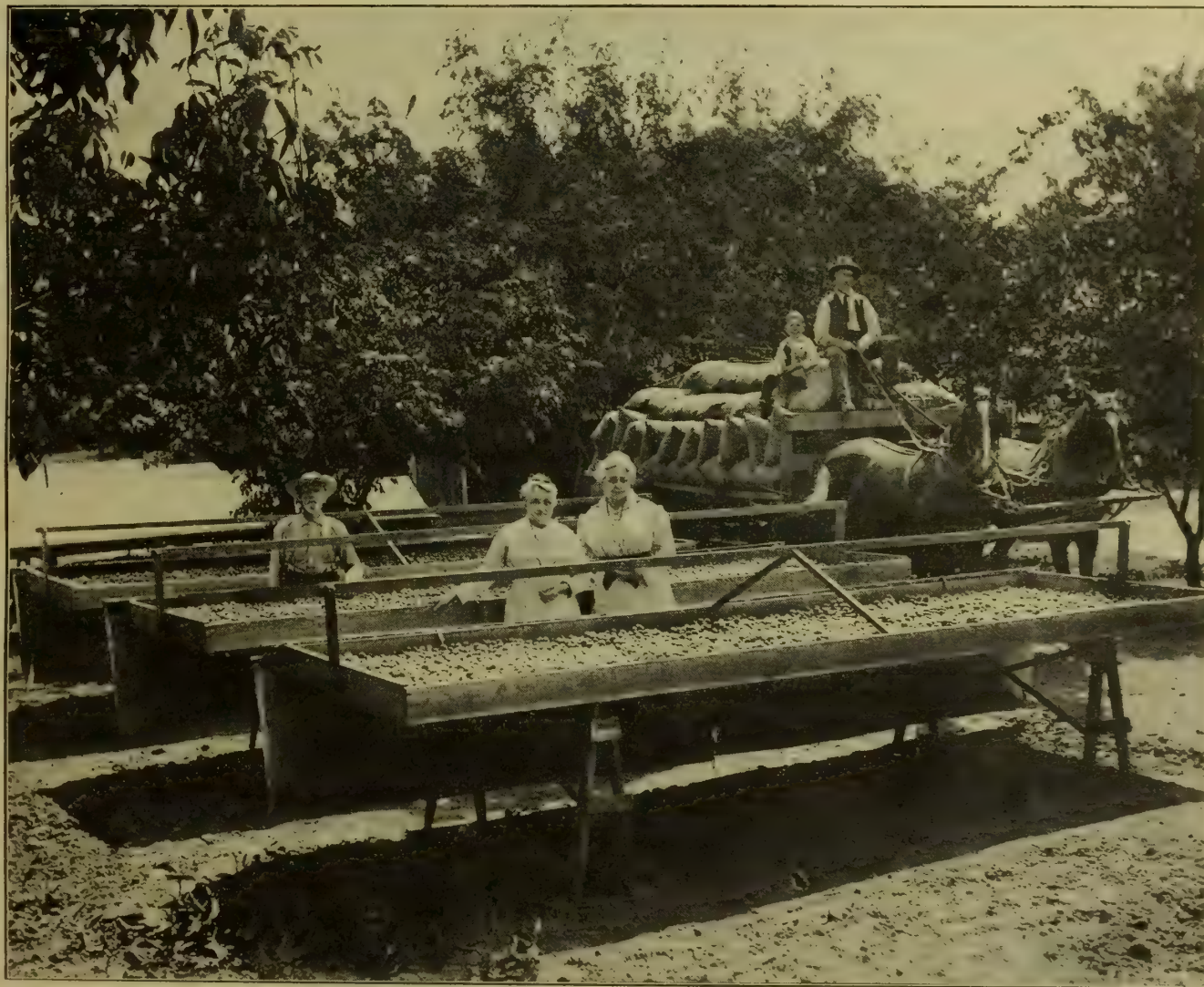
*THE LIVESTOCK and DAIRY JOURNAL* Combined with **CALIFORNIA CULTIVATOR**

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

February 2, 1918

SAN FRANCISCO



Curing and Marketing Walnuts



# REO

"THE GOLD STANDARD  
OF VALUES"

## This New Reo Light Four Is a Handsome Motor Car

AT THE NEW YORK SHOW, in January, the Reo exhibit was, to an even greater extent than ordinarily, the mecca of the crowds.

YOU'D THINK, PERHAPS, that at the National automobile show, and especially in the world's greatest metropolis, where dealers and buyers go to see what is latest in construction and design, that the ponderous multi-cylinder machines would attract the most attention.

ON THE CONTRARY, there was vastly more interest shown in the types of cars that are designed to supply that great American need for a practical, economical, five-passenger touring car or three-passenger roadster.

THIS YEAR, more than ever before, buyers are paying less attention to fads and more to practical things. More to cost of up-keep than to first cost.

AND THIS REO—this new Light Four—stood out above all the rest.

IT IS SUCCESSOR to the greatest four-cylinder automobile ever built—that wonderfully efficient, wonderfully sturdy Reo the Fifth, that for eight years maintained its supremacy.

THIS IS A REFINEMENT of that great car. All fundamentals have been retained and every detail has been refined to the last degree.

IN A WORD, this latest Reo represents all that has gone before and just that much more of Reo experience.

THIS IS A REAL CAR—a full five-passenger Light four. Not a skimpy—not a little four.

IT DOES SEAT FIVE full grown adults—you don't have to use a shoe horn to get them in.

BODY DESIGN IS BEAUTIFUL—it is up to the minute in every line and curve and in every detail of upholstery and finish and appointments.

IT IS JUST THE CAR you would specify if having one made to your own order.

FOR HERE ARE COMBINED roominess with economy of operation; beauty in appearance with sterling mechanical quality;

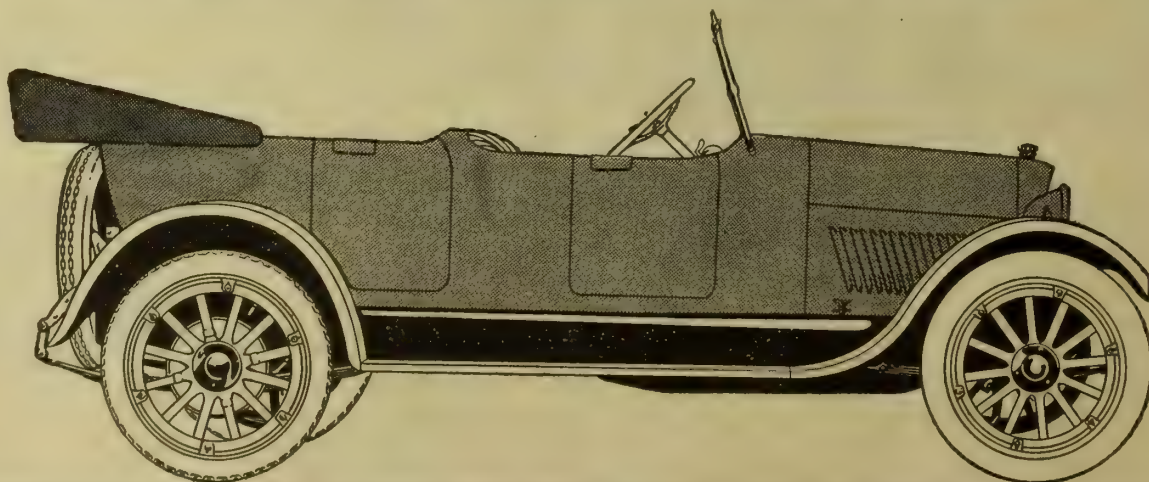
AND LOW UPKEEP—that quality for which Reos have always been famous.

OUTPUT IS LIMITED—must be this year, for we also are doing our part to assist Uncle Sam.

SO YOU'LL HAVE TO HURRY. Make your decision—see your Reo dealer and place your order well in advance of the time you will want delivery, else you will surely be disappointed.

TODAY—won't be a minute to soon.

**Reo Motor Car Company, Lansing, Michigan**





# California Cultivator

Vol. L, No. 5

LOS ANGELES: February 2, 1918

One Dollar Yearly

## Power on the Farm Then and Now

Interesting Bit of Information as to Walking Type of Tractor or Steam Plow of the 60's. Presumably It Would Not be Arrested for Exceeding Speed Limits



EVER was there a time in the history of agriculture when there was more interest in labor saving appliances in general and in plowing and soil fitting appliances in particular. We look at

our gas tractors pulling the gangs of plows and wonder how our forefathers ever grew enough to eat with the crooked stick plow or even later with the best appliances at hand. But while we feel we are blessed in these modern appliances far above the farmers of 50 and 60 years ago, their ambitions were apparently as great as ours today. In an agricultural report of the year '69, we note "There is no object of more interest in Washington than the United States Patent office, the receptacle of all silent or eloquent memorials of the genius and efforts of our inventors, and there is no department of this vast institution more pleasing to the general visitor than that devoted to agriculture." Then, as a bit of general information, a table showing a number of agricultural patents issued during the 12 months: "For bee hives and bee keepers supplies there were issued 62 patents; churns and churning, 130; corn shellers, 40; cotton gins, 30; cultivators, 150; threshing machines, 35; yokes, 15; forks, 100; harvesters and attachments, 195; hay tedders, 10; milk coolers, "safes," pails, etc., 45; seeding and sowing machines, 80; rakes, 90; planters, 150; and so on, but the greatest number was of plows and attachments for which there were 255 patents issued." The total of agricultural patents was 1900. As noted, the plow takes precedent, and it is a pleasure to show on this page a reproduction of the drawings appearing in the same book of one of those plows. In comment on these plows, however, we note: "So many magnificent theories in regard to the practicability of plowing by steam have proved fallacious when tested in practice that inventors appear to rank notions of that character among the utterly impracticable, and consequently to be 'let alone.' The hauling system, by which is to be understood the mode adopted by Fowler, who employs a stationary engine to draw a plow across the field by means of a long rope or chain, which winds around a drum or pulley, has been fully and satisfactorily tested in England, but had not been extensively introduced into this country. We need the steam plow, however; there is no spot in the world so well adapted to plowing on a large scale as the broad prairies of the West. Nowhere is there a finer field for the display of an effective machine; namely, level ground, loose soil, and all the accessories to render success certain and complete." Again: It is worthy of note that the patents granted on wheel plows in 1869 to residents of California and Oregon largely exceeded in number those granted for inventions of a like character from all the other states of the Union."

### INCOME TAX

Less than four weeks remain for filing individual income tax returns for calendar year 1917. If an unmarried person with income of \$1000 or more and married person, living with husband or wife, with income of \$2000 or more (or combined income of husband and wife) fails to file this return, penalty up to \$1000 and imprisonment may be incurred. Bear in mind that if the income in either of these cases is \$1000 or \$2000, while there would be no income tax to pay, the return must be filed. There are only three offices in the state at which the payments are to be made; San Francisco, Sacramento and Los Angeles. Los Angeles County alone will have nearly 40,000 income tax payers. The rush at the last moment will be great. File your return today.

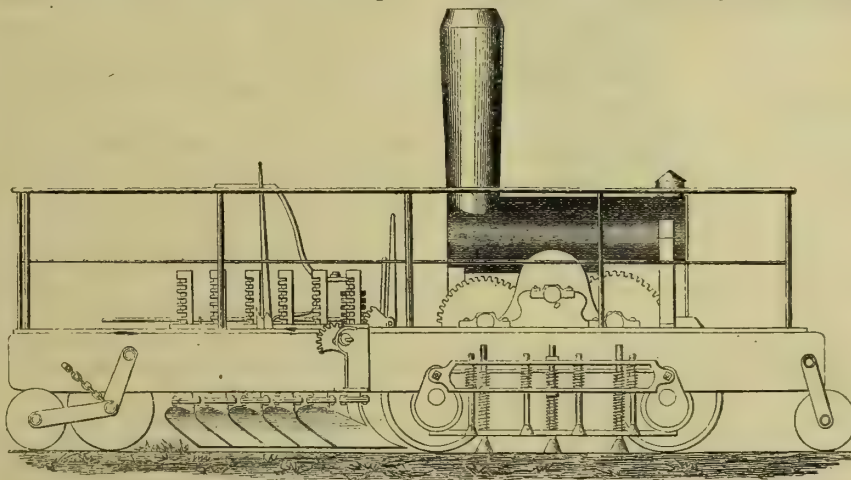
Tax payers at a distance should write at once for the blank form to Office of Internal Revenue Collector, Sacramento, Federal Building, San Francisco, or Federal Building, Los Angeles, whichever is nearest. If income is under \$4000 ask for Form 1040 A; if over \$4000 ask for Form 1040. The shorter form, 1040 A, which most of us will use, is of four pages. The first two are filled with explicit explanations; the other two have blanks for filling in. After all figures as to the income are entered up go before a notary, acknowledge and mail. Those within reach of one of the three revenue collectors may present their returns in person, making oath before the collector, or, still better, see representatives of the department who are visiting all sections of the state and giving information as to filing in the returns and who are qualified to administer the oath.

One may enclose check, money order or draft, for the amount of the tax, with deduction at the rate of three per cent per annum, for the time intervening between payment and June 15.

Of the 255 patents issued for plows, but five were for steam plows. From the description of the one we have used in the illustration, we quote:

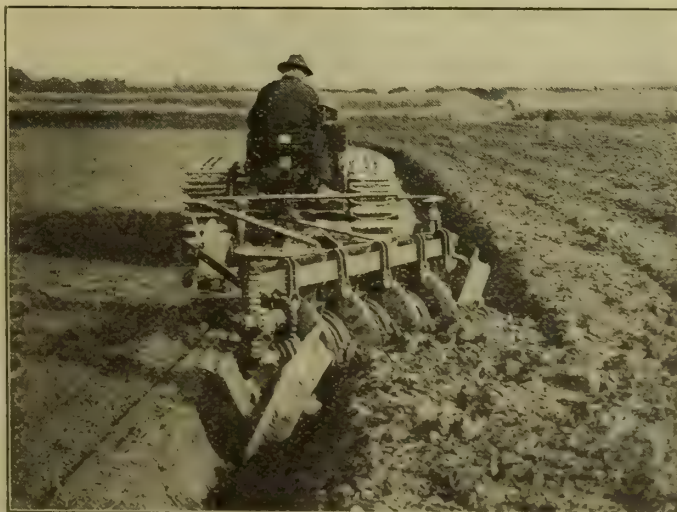
The patent of Townley and Freidrich consists of a frame, beneath which is placed a gang of plows of the ordinary construction. This frame is sustained by broad rollers, and the propul-

sion is accomplished on the principle embodied in the "walking dolls," which were a great curiosity a few years since. A series of "spring feet" are provided, extending across the whole width of the machine. These feet are attached to longitudinal bars at each end with collars fitting over eccentrics in such a way that as the



A Tractor of Yesterday

Today we have our big wheelers, sieve grips, various track layers, among which is the Caterpillar. In the beginnings of steam plows they tried another type of traction. The above is an illustration taken from the Yearbook of 1865 of the Townley & Friedrich Steam Plow, patented April 27, 1869. Description is given in text herewith, but be sure and note the manner of propulsion. Moderns would probably call this the "Centipede" for it is propelled by a series of "spring feet" operated by eccentrics which would give a genuine walking motion.



Classy Work

In contrast with the walking doll type of steam plow, here is a graphic illustration of modern gas engine efficiency.

shafts to which the eccentrics are attached revolve the feet are brought in contact with the ground and the frame is moved forward. The eccentrics are arranged in a such manner that half of the number of longitudinal bars are moving upward while the other half are moving downward; and thus, while some of the feet are on the ground and pushing the machine forward, others are moving to a more advanced position to be similarly operated, thereby keeping up a continual forward motion of the machine.

The last invention to which reference will be made under the head of steam plows is that of Augustin L. Taveau, which was entered for patent in 1869, although the patent will bear the date of 1870. This plow belongs to that class in which the machine traverses the field and accomplishes the turning over of the soil simultaneously. It may also be used as a stationary engine working on the Fowler principle, or the locomotive may be run across the field and anchored securely and the plows drawn up to it. It is claimed, however, that the traction has been so effectively overcome that the machine may be worked in ordinary soils in the manner first suggested. The main point in this connection is the construction of the traction wheels, which are two in number, made broad, and provided with teeth of a peculiar construction, being beveled on the rear side, by which it is believed they will not only "bite" the soil forcibly but will leave it readily. These wheels are each provided with a circular disk having a sharp cutting edge, designed to serve the purpose of a colter to the plows, and by which means it is believed by the inventor something like 55 per cent of the traction power of the plows will be overcome. In the rear of the engine is placed the plow frame, on which is arranged a gang of plows constructed to be readily raised and lowered. The standards of the plows are pivoted and provided with brittle pins so that on meeting obstructions the plow will swing back and up and thus obviate serious damage by breaking or stopping the machine. The plow frame is wheeled and the plows are made without soles, by which means it is believed that bottom friction will be nearly or altogether done away with. In the rear of the plows is arranged, if desired, a modified form of a harrow, which is provided with suitable seed and manure sowing devices. It is intended thus to effect in one passage over the field the several operations of plowing, harrowing, manuring, seeding and covering; or the plow and harrow may be run over without the seed-sowing devices being brought into operation. For the second trip the plow frame may be detached and the seed sown and covered by the harrow. The engine may be converted into a hand roller or road locomotive by covering the wheels in such a manner that they make but one large cylinder, and suitable pulleys are attached for driving any kind of farm or other machinery.



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**Uniform blasting—results in every stick**

## GIANT FARM POWDERS

STUMPING — AGRICULTURAL

Uniformity is another word for economy and safety. When the same things happen with each pound of Giant Farm Powder, you know not only how much to use, but what results to expect and how to handle the explosive.

Giant Farm Powders are surer, safer and more economical because our tests guarantee every pound. We maintain our own completely equipped chemical division to inspect Giant Farm Powders during every process of manufacture. Absolute uniformity means absolute dependability. Like results always obtained under like conditions make western farmers prefer Giant Farm Powders.

"Giant Powder is the most satisfactory," says John Zurr, Santa Rosa, Cal.  
"I account for this because Giant Powder is made with the utmost care."

**Caution:** Be sure you get the genuine. That other explosives are often called "Giant Powder" indicates the high quality of the original. Look for the Giant trade-mark on every case.

The coupon (or a postal mentioning this paper) will bring you the big book "Better Farming." Tells how to remove stumps, prepare tree beds, and do all kinds of farm work cheaper and better. Write for it now.

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Send me the 52-page illustrated book "Better Farming." I am especially interested in (please check)

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| <input type="checkbox"/> Boulder Blasting | <input type="checkbox"/> Subsoil Blasting  |     |
| <input type="checkbox"/> Ditch Blasting   | <input type="checkbox"/> Road Making       |     |

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**Turn Cutlery Steel Into Your Fields!**

Do It Early With **Cutaway** DISK HARROWS

That's what the disks are made of—a special cutlery steel—forged edge (cut out or solid)—so sharp and sturdy that mother earth crumbles into tiny particles just as you want her to. Pulverize the soil early this Spring. Get it in the best condition to give the world bigger and better crops—and make it a poor season for Lady Insect and her family.



**WRITE FOR THIS BOOK**

It's a valuable one to have; tells what you need to know about "The Soil and its Tillage." With it, we will gladly send our complete Implement Catalog and names of your nearest dealers in CUTAWAY (CLARK) Implements

The Cutaway Harrow Company  
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Maker of the original CLARK Disk Harrows and Plows.

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## Light Crop of Oranges

Estimates Show That Total Orange and Lemon Output for State Will Probably Be Less Than 25,000 Cars.

**T**HE Riverside Press has for years made careful estimate of the orange and lemon output early in each January. Many of the oranges of the state are already shipped so that it affords opportunity for fairly accurate estimate for the 12 months' output. The total for the state for the year ending on November 1 next is to be—estimates being correct—17,300 cars oranges and 5,680 lemons. By districts according to Press' figures:

	Cars Oranges	Cars Lemons
Orange district .....	2200	600
Azusa-Glendora district .....	2000	225
Pomona district .....	1325	200
Covina .....	1000	.....
Placentia .....	900	25
Redlands district .....	850	.....
Ontario district .....	780	500
Riverside district .....	750	175
San Dimas district .....	700	450
Whittier district .....	700	650
Ventura County .....	600	1300
Anaheim .....	600	.....
Fullerton .....	600	.....
Rialto-Bloomington- Colton .....	500	20
Duarte-Monrovia .....	400	.....
Highland .....	300	50
Corona .....	275	400
Alhambra-Pasadena .....	250	.....
San Diego County .....	130	625
San Fernando .....	90	10
Santa Barbara County .....	.....	350
Hemet .....	40	.....
Moreno .....	20	.....
Other localities .....	90	.....

Total for So. Cal. ....15,100 5580  
Central California .... 2000 100  
Northern California .... 200 .....

Total for state .....17,300 5680

For Riverside the estimate is made by Manager Lynn of the A. H. Fruit Company:

"We estimate the crop of navels in the Riverside district, including Highgrove, Arlington Heights and West Riverside sections, to be ten per cent of a normal crop; Valencias and other varieties about 65 per cent and lemons about 40 per cent. Our estimate for the district is about 850 cars of oranges and 160 to 175 cars of lemons on the basis of 400 packed boxes to the car. Sizes on the Navels will run quite heavy to 126s and larger; indications are that the other varieties will run heavy to medium sizes."

Mr. Matthews of Covina Argus gives through the Press the following summary for the state:

"The cheerful philosophy that 'a short horse is soon curried,' applies with gentle force to the Southern California Washington Navel crop this year, traced in cause to the heat wave of last summer.

"I have a very poor opinion of crop estimates, however, as many years of printing these estimates coming from the wisdom of others has left me with the knowledge that the human mind is frail in this respect. The citrus crop is almost invariably under-estimated.

"The rancher is the reverse in procedure to the man who runs a mercantile house. The merchant must at all times claim that business is good (at

least in any public statement). It's good for business to claim that business is good. That's why we build up chamber of commerce propaganda, and that's why merchants roll up a sentiment of cheerfulness and optimism in their advertising, if they are clever merchants. But the rancher's business is not directly injured by a little pessimism. In fact he has been taught to believe that if he represents his crop to be small the price will be higher, which is something that used to be a fact, but of late years has no effect on the market. Produce dealers no longer pay any attention to field estimates, except in cases of almost total crop failure or unprecedented surplus of crops. The market is not influenced until the cars are arriving within a few miles of market. The amount of fruit rolling at a particular time is the only estimate that the Eastern market cares much about.

"But if a rancher has more fruit than he estimated, it does not hurt him. He can talk pessimism and get away with it, and do it again the next year. His pessimism hurts the general business of his community, has a tendency to stop new construction, and puts excessive caution into the country merchant. Time and time again the estimates gathered on the citrus crop have been proved very wide of the mark and invariably erring on the side of pessimism.

"The hot wave of last summer wiped out a huge amount of fruit that was forming. I recently made a trip through Porterville and Lindsay. They put the fruit through in short order this year, having but about 30 per cent of a normal crop. But last summer they said that they were going to find scarcely a mature orange when picking time came.

"Los Angeles County has a very light crop of Navels. The prevailing pessimism is to the effect that there will not be more than 15 to 20 per cent of a crop, but, without looking at a single tree or orchard, it is safe to say that there will be much more than this amount. Already some of the ranchers are beginning to brighten up and to say that they have more fruit than they thought they had, which has a strangely familiar sound to me.

"The citrus situation in Covina, Whittier, Azusa, Glendora and through the central Los Angeles County belt is very good, although the Navel crop is very light. This is getting to be a 50-50 Navel and Valencia country. The old Navels are gradually being replaced with Valencias. There is every reason to believe that there will be a good Valencia crop next summer, although not such a huge crop as has been harvested in the last few years. The greatest amount of fruit and the largest cash return of any year in the history of the industry was the result of last year's citrus crop in Los Angeles County.

"Because a horse can trot a mile in 2:04, it's no sign that he should be expected to trot two miles in 4:08. Two years in the citrus industry are never alike. The Irish hod carrier said when he fell seven stories from the scaffolding that he had to come down for more bricks anyhow. And perhaps, on account of the great traffic congestion, it will be a blessing that we have fewer oranges this year."

## June Drop

**T**HE state university is now mailing to citrus growers Bulletin No. 290, "The June Drop of Washington Navel Oranges," a progress report by Dr. J. Eliot Coit and Robert W. Hodgson. This report is a chronicle of investigations conducted during several years, in which a portion at least of the June drop is ascertained to be due to alternaria citri. The report says:

The fact that a fungus has been

found connected with certain phases of the drop phenomenon has led some growers to anticipate that spraying with fungicides might prove an effective means of control. Unfortunately neither winter spraying nor spraying in the bloom has proved effective. Inasmuch as our investigations have discovered the reasons for the failure of sprays and have indicated in a general way the lines along which efforts for prevention or control must be directed, a report seems warranted at this time.

The shedding of the young Navel or-



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### Prices

	Per 1000
10 in. long, 7 in. wide....	\$10.00
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14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

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of varieties endorsed by the Avocado Association; especially the FUERTE, best of all. May we quote you prices?

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F. O. Popenoe, Mgr., Altadena, Calif.

anges has been ascribed to various causes among which are irregular or deficient irrigation, cold irrigation water, irregular fertilization, injury due to thrips, fungus parasites, and climatic conditions. A somewhat comprehensive preliminary study of the situation with extended observations in the field very soon eliminated all but the last two possibilities. Therefore attention was early directed toward attempts to isolate fungi from the stigmas of the young flowers and from the navel ends of the small fruits.

Summarizing the matter in the report the authors say:

June drop of Washington Navel oranges causes an annual loss of \$1,225,000 to \$1,750,000 in California and is the limiting factor in profitable Navel orange production in many parts of the interior valleys of California and Arizona. The drop itself can be separated into two parts, that occurring from petal fall until the fruit is about an inch in diameter, and that occurring after that time. The first part is much the more serious and is due to abnormal water relations which serve as a stimulus to abscission. The second part is less important and is due to the fungus *Alternaria citri* of wide distribution which is also the cause of black rot of Navel oranges. The fruits showing the black rot represent those infected fruits which managed to survive to maturity, other infected fruits having fallen, chiefly during the months of July and August.

The water-relations drop bears a definite relation to climatic conditions and all efforts looking toward prevention or control must be either in the nature of modifying environmental conditions, or in selection for dry-heat-resistant strains. Of these two the former seems to promise the more immediate results.

### ABOUT THE AVOCADO

A free correspondence course on the avocado is announced by L. J. Condit of the state university. He writes that lessons will be given in the following topics:

Economic considerations: Acreage; prices for budwood, seeds, trees, fruit, etc.; financial problems and probable returns; the California Avocado Association. History and Geography in Other Countries: This takes up the consideration of the success of the industry in such countries as Mexico, South America, Hawaii, Philippine Islands, Porto Rico, Florida, Cuba. History and Distribution in California: This gives the early history in this state; the men who have been influential in getting the industry started; an account of some of the old seedling trees in various parts of the state; some of the orchards which have already been developed. Soil, Climatic, and Moisture Requirements: This lesson treats in detail of the experience which has been learned in regard to favorable and unfavorable soils, both in California and Florida; the effect of heat and cold on the trees; the experience gained in the hardiness of different varieties in California; the effect of wind. Botany, Common Names, and a Description of the Plant. This considers a thorough description of the plant, including the roots and wood, habits of growth, leaves, flowers, fruits, seeds, etc. Propagation and Methods of Propagation which secure the best results. Planting and orchard management. This includes the spacing of the trees, tree protection, planting, irrigation, mulching, fertilization, pruning, top



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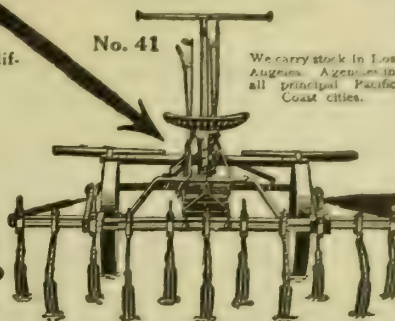
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Wholesale and Retail 250,000 Orange, Lemon and Grapefruit Trees 1, 2 and 3 years old. Florida Sour Seedling Stock—300,000 trees one year old. Trees Planted and Guaranteed on Contract.

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then your ditch is hard  
to clean with plow and  
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Let us know the location, slope and character of your land, available water for irrigation purposes and other facts, and we will be glad to advise you as to what fruits would do best under your particular conditions, and the best tested standard varieties that you should plant for home consumption or for commercial purposes.

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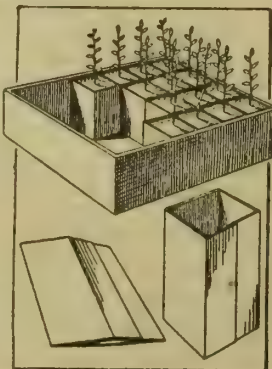
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#### COLLAPSIBLE PLANTING POTS

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start

Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

Write for samples and prices of both Pots and Protectors. State which you are interested in.  
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working, thinning the fruit, intercrops and cover crops. Classification and Varieties: This includes a thorough discussion of the requirements of a commercial variety and the basis of the classification of the Mexican, Gatemalan and West Indian types. Harvesting, Picking, Marketing, and

Pests. A discussion is given of the season of maturing, picking and packing the fruit, shipping, cold storage, insect pests, diseases. Food Value; Uses; Analyses; By-Products. The results of investigations by various chemists and students; the uses of the fruit; the by-products, such as avocado oil, paste, etc.

## Prolongation of Bearing of Muscat Vines with Decayed Crowns

By A. E. Way in Sun-Maid Herald

**A**NY methods that might be adopted to renew the bearing qualities of a Muscat vine that has a decayed crown or trunk cannot be permanent. The injury is there and will always remain; but it is possible to prolong the life of the vine and get back its vigor or growth and bearing qualities for perhaps ten years. A good method consists of taking water-sprouts or suckers and either tying them together over the old crown or to a three-foot stake driven as close as possible to the trunk.

Tying to a three-foot stake is preferable, as it will keep the canes from sagging down and getting misshapen. It will also keep the canes in a vertical position and thereby increase the vigor of the shoots at the ends of the canes, where the future crown is to be. The growth on a decayed vine, as a rule, is very small, both in size and length.

If the grower has done his spring suckering thoroughly, there are no suckers; therefore, methods must be used to promote sucker growth. The best method is to prune the vine to one bud on each spur and decrease the number of spurs on the old crown. This will force out a lot of water-sprouts and suckers in the spring, besides enabling the shoots, from these one-bud spurs, to produce large bunches and berries instead of a lot of worthless small grapes lacking sugar.

In a great many cases it is advisable to open the crown of the vine with a small axe, exposing the rotting pulpy mass to the sun and drying winds, which will retard the further decaying of the outer living shell of the trunk. A handful or two of slaked lime thrown into the opening made helps to heal the decaying surface of the wound. The water-sprouts and suckers grow more vigorously where all this is done.

The canes that are tied up should be about two feet long—not longer—and from one to four canes should be taken up. Where the vine has produced only one cane or is too weak to support any more, that one should be used.

The three or four canes should be tied at equal distances all around the trunk where possible, but never take up two canes that start out close together.

These canes are to be left permanently—they will form the future arms or trunks of the new vine. It is sometimes necessary the following winter to prune off a cane or two of those that were tied up if the growth has not been strong enough.

The cane can be pruned off close to the trunk if there is another adjoining to take its place, or pruned back to one or two buds and so start fresh canes.

These canes will bear some fruit the first year, but if the water-sprouts and suckers are pruned to one or two buds the first year, then the shoots or canes from them will be fruit-bearing canes, and when they are tied up the crop will be greater.

Being tied up vertically, the shoots at the top will be the strongest and the following winter one to two of these top shoots should be pruned to two buds and all lower growth on the new arms or trunks should be pruned off, and, in the spring, suckered. If all four arms are growing satisfactorily, all sucker growth on the old trunk should be removed; otherwise, they will be robbing the new trunks of sap.

The spurs on the new trunks are increased every year, according to the vigor of the vine.

Vines so treated have re-established themselves and are bearing good crops, but not without some aid from a nitrogenous fertilizer and thorough cultural methods. This method will not re-establish a Muscat vineyard in one year, as some of the vines have no water-sprouts or suckers growing and will have to be forced to produce them. To be successful, careful suckering of the old stump and crown should be practiced every spring and summer in order to force the growth and vigor into the new head and spurs. It will be a decided help to very low crown vines that need to be raised higher in a short time. It is absolutely useless where there are any forms of root diseases.

## Tractor School

Subscribers have written asking as to the tractor school at Riverside and the requirements of those wishing to receive instruction. We have the following from Professor Vaile:

Replying to your inquiry, relative to our tractor short course, I would say that it will be necessary for people who take this course to live in town during the course. The Y. M. C. A. has agreed to assist in any way possible in obtaining rooms for men applicants and the Y. W. C. A. for the women. Rooming and boarding houses are available at popular prices, as is the case in any similar town. Box lunches will doubtless be the desir-

able way of handling the noon meal. These can be procured at any of the several places in town.

"Some sort of bus connections will be maintained. The exact nature of this will depend upon the number of students. We have at the present time something over 50 applicants, some of which doubtless will not materialize.

"The only thing necessary in the way of books and stationery will be a note book and a sharp pencil.

"Coveralls, or something equally suitable, are recommended as the most appropriate dress.



## ARSENICALS FOR SPRAYING APPLES

**S**AFETY and cost are the important considerations in purchasing spraying materials. Prevailing high prices make cost doubly important this year. Most arsenicals are effective. Some are likely to cause injury. The most serious injury is a blackening of the blossom end of the apple, commonly termed the calyx burn.

Calyx burn is induced during the application of the calyx spray, though it usually is not noticeable until the fruit begins to approach maturity. The direct cause may be unsuitable arsenicals, mishandling of materials, or over-heavy spraying.

Arsenate of lead is made in two chemical forms, neutral and acid. The acid form is the usual commercial or standard arsenate of lead. The two forms differ in the amount of arsenic that is in combination with the lead. The neutral form contains less arsenic, is more expensive to make, and sells for a cent or two more per pound than the regular commercial product.

The neutral form is more stable and less affected by general atmospheric agencies than the acid form, consequently it is less likely to cause injury. It is the safest to use on peaches and other tender plants, and should be used on varieties of apples susceptible to a serious calyx burn. The neutral product is sold by different manufacturers as neutral arsenate of lead, ortho arsenate of lead, or some other name which designates the chemical nature.

Varieties of apples vary in susceptibility to arsenic injury. Ingram and Missouri Pippin are most severely injured. Jonathan and Ben Davis follow in the order of susceptibility to calyx burn, but usually are not so seriously injured.

During the season of 1917 Ingram and Missouri Pippin trees sprayed with a neutral arsenate of lead were practically free from calyx burn, while on trees of the same varieties, sprayed with the regular standard product, the injury ranged from about fifty to nearly one hundred per cent. Much of this injury was severe enough to materially increase the number of culls.

Arsenate of lime is a less expensive product than arsenate of lead. In combination with lime-sulphur it is just as effective in the control of orchard pests as is arsenate of lead, according to F. W. Faurot of the University of Missouri college of agriculture. With it there also appears to be less tendency for the substances of which the combined spray is composed to break down through chemical action than when arsenate of lead is used. Arsenate of lime, however, either alone or in combination sprays has somewhat greater tendency to produce injury than arsenate of lead. Yet, if good product is obtained, it may be safely used on apples, particularly on those varieties which are not specially subject to calyx burn. Arsenate of lime is also one of the cheapest and most satisfactory arsenicals to use for spraying potatoes.

### CREDIT WHERE DUE

The Sun-Maid Herald, referring to W. R. Nutting's connection with the Associated and also with a large concern not affiliated, explains that Mr. Nutting is in no way antagonizing the plans of the Associated. The editor of the Herald says: "If it should come to a sharp conflict his allegiance would be—as it always has been—with the Associated as representing the prosperity of all the growers of the community. W. R. Nutting started the movement that led to the organization of the California Associated Raisin Company, and since that time he has always been working for the success of the Associated. His loyalty has never been questioned by any one in the Associated who knows the facts."

# What would the oil in your engine show?

**F**OR years, both motorists and engineers were in the dark as to the amount of friction and consequent wear due to the sediment formed in the average motor oil.

Inferior oil breaks down under the terrific heat of an automobile farm tractor or stationary engine and forms voluminous black sediment. This sediment causes rapid wear of the parts because it crowds out good oil at points where friction occurs.

## How a lubricant muzzles the tiny teeth of friction

If you could look at the surface of a bearing or other engine part through a powerful magnifying glass, what would you see?

Not a smooth, even surface, but thousands of microscopic teeth. Sediment excludes the protective film of the oil and allows these tiny teeth to grab and tear at each other, thus causing rapid wear.

## A practical proof of superiority

The Sediment Test, illustrated at the right, is as simple as it is convincing.

The bottle to the left contains a sample of ordinary oil taken from the crankcase of an engine after 500 miles of running.

In the right-hand bottle is a sample of Veedol after being used for 500 miles under identical conditions.

Notice that ordinary oil contains over five times as much sediment as Veedol.

## Make this test for yourself

Drain the oil out of your crankcase and mix with kerosene. Run the engine very slowly for 30 seconds and then clean out all kerosene. Refill with Veedol and make a test run. You will find your engine has acquired new power and a snappy pick-up. It will run more smoothly and give greater gasoline mileage.

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Your dealer has Veedol in stock, or can get it for you. If he will not, write us for the name of the nearest dealer who can supply you.

## An 80-page book on lubrication for 10c

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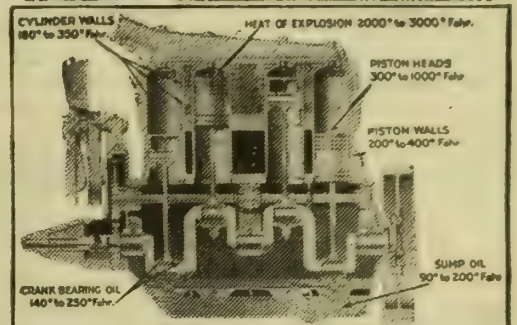
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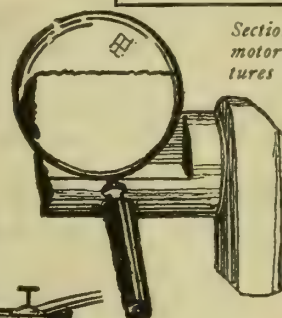
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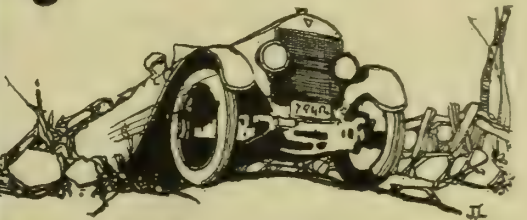
Chicago, San Francisco



Sectional view of a popular type of motor, showing high operating temperatures that cause rapid destruction of the average automobile oil



Millions of tiny teeth cover the apparently mirror-like surface of a bearing or other working part of an engine. These teeth tear and grind each other unless kept apart by a protecting film of lubricant



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The best varieties of trees are selling out fast.

Shipping Plums, Prunes, Cherries, Pears, Olives, Almonds, Apricots, Peaches—all are equally profitable according to your location. No other investment their equal.

Our foothill trees are free from the root diseases common to other localities. Pedigreed parentage—roots fibrous and well branched—trees hardy and of toughened fibre—features that spell success in tree planting, and in your orcharding.

Submit me a list of your wants for special quotations. Do this now while our assortment is complete. Mail your list right now to Dept. J

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## February Vegetable Planting Calendar Southern California

Written for California Cultivator By D. F. Reichard



**F**EBRUARY is our busiest month from a planting standpoint. This year should see garden activities proceeding at highest tension and every available piece of ground occupied by tree, garden, field crop or poultry yard. For by an abnormal production of food stuffs of whatever nature the miseries existing throughout Europe will be lessened and our being brought under the food ticket system averted. It will pay even the specializing ranchers to devote a portion of their land to a vegetable garden though

months to insure a constant supply. In the case of tomatoes plant some early variety and some medium and late varieties for a continuous supply during their season. Tomatoes along with peppers and egg plant should be planted where they will not be disturbed throughout the season. The seeds of the latter three items should be planted this month to get plants for setting out a little later. Corn, melons and cucumbers can be planted in protected places. Melons and cucumbers if well cared for will need only one replanting early in July to extend their producing season well into fall, but with corn a small patch at least three rows wide should be planted every couple of weeks until the middle of August. Potatoes may be successfully planted until the first of April and then again during August. Onions should be planted in quantities now to produce dry onions for fall and winter use; for a constant supply of green onions seed should be planted monthly.



Cultivating Lettuce  
Wheel hoe with cultivating rake

If the garden is to be permanent do not overlook the perennial vegetables and small fruits; these must be planted where they will not be disturbed each season; at the edges of the plot is the preferred location for them; here they can be attended to properly and are out of the way of the short season crops where the land is cleared away every few months.

Of the items mentioned the varieties for planting this month are Extra Early and Crosby's Egyptian beet; Oxheart and Chantenay carrot; Early Purple Top turnip; any of the summer radishes; Amsterdam Giant spinach; Wonderful and Iceberg lettuce; Telephone, Stratagen or Senator peas; Canadian and Ventura Wonder beans; Cannon Ball or Scotts Cross cabbage; California Pearl cauliflower; Early Adams and Hearts Early sweet corn; Early White Spine cucumber; Rocky Ford cantaloupe and Angeleno or Chilian Black Seed watermelon; American Wonder and Triumph potatoes; any variety of onion; other things that may be planted are chicory, endive, kohlrabi, kale and swiss chard.

It is always well to have on hand hydrated or slacked lime, tobacco dust, tobacco extract, arsenate or lead or Paris green, sulphur, rosin wash or lime-sulphur solution, Bordeaux mixture and a good spray pump to keep down any attacks of insects or fungi.

Dust the lime or tobacco dust over the seed bed to keep insects away; spray the young plants with tobacco extract or with arsenate to kill insects and dust sulphur or spray with Bordeaux to prevent blight and rust. Use the rosin wash or lime-sulphur on the hard wood plants to keep them clean of scale.

### Northern California

Written for California Cultivator by A. R. Gould



**A**WIDE appeal is abroad throughout the country for a million home gardens, and if such an appeal is heeded it will certainly be productive of much good in many different ways. It will bring increased crops to add to the food supply and thus strengthen the forces against the enemy and will bring health and vigor to all those who get busy outside in

the garden. There is no more healthful occupation than using the pick and shovel. There is lots of room even in the cities for the work of reclamation. Backyards can be cleaned up and put into a state of cultivation. Vacant lots which are an eyesore to most of our cities should be put into shape where possible. There is a patriotic duty for both the town and country dweller to perform.



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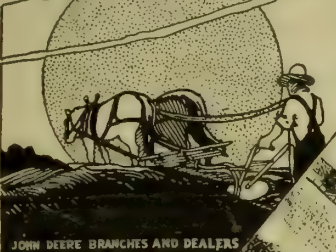
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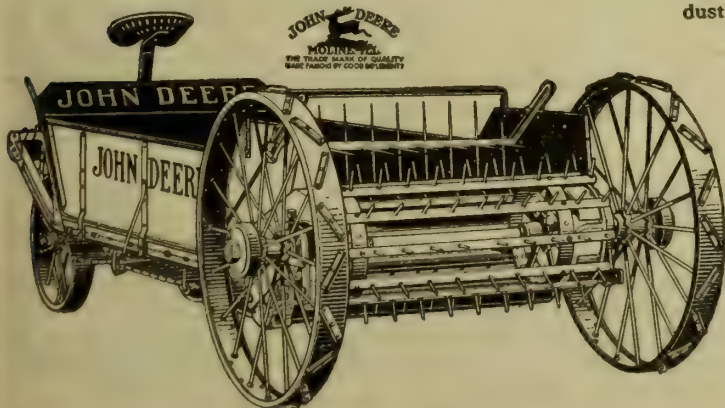
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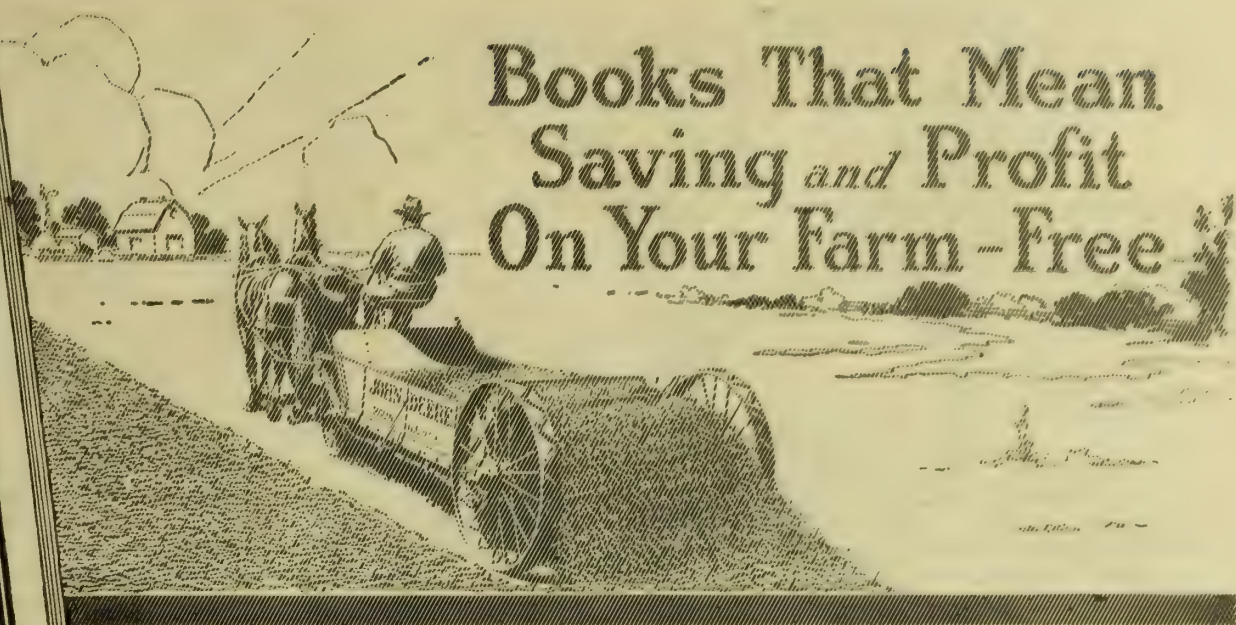
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## Mounting the Beater on the Axle A Patented Feature Makes Possible These Distinctive Advantages:

**The beater drive is strong and durable.** It has the same principles and is as simple as a triple-gear horse power. The gears are enclosed in a dust-proof case. They run in a bath of oil. No dust or dirt can reach them.

**It is easy to load from the front to the rear.** You see where every forkful of manure goes. It is only 38" to the top of the box. A boy can load it.

**High drive wheels are used.** The draft has not been sacrificed to make an easy loading machine. Mounting the beater on the axle made this unnecessary. High drive wheels save horse flesh.

**Unusually simple—no clutches—no chains.** The simplest spreader built. Only about half the castings on it necessary on other spreaders. No clutches

or chains. All of the main working parts mounted on the rear axle—not affected by twisting strains. They can't get out of line and cause binding, heavy draft and breakage.

**It's an easy running spreader.** High drive wheels, roller bearings at both ends of the beater, ball-bearing eccentric apron drive, revolving rake and even distribution of load, all help to make the John Deere a horse saver.

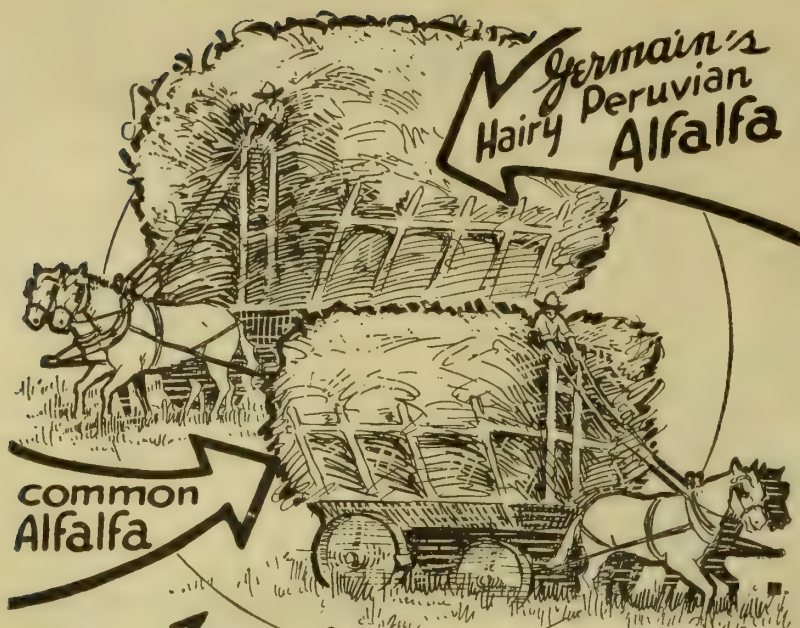
**A boy can operate it.** A boy old enough to drive horses can operate the John Deere Spreader as easily as you can. Tell him where to set the feed lever and he can easily put the machine in and out of gear. That's all there is to it.

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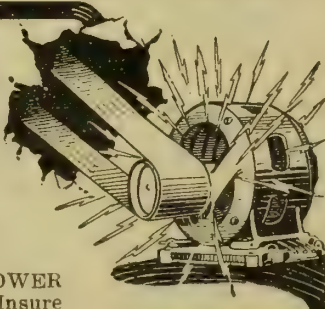
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and the Cultivator staff will be happy to act the role of instructor and is constantly preaching the gospel of food production. We are still without our usual supply of rain to date, but we doubt not that it will yet arrive, and we have had just enough to enable us to get on with our preparation. The first rains have softened the surface and made digging easier, and we must lose no time in trenching and manuring all vacant land. Have all plots put into shape and early crops sown in anticipation of the rains we expect shortly.

### Seedsmen and Seed Catalogs

Now is the time to study seedsmen and their catalogs, which are both of importance to the gardener and food producer. While we hold no brief for any particular seedsmen we would advise our readers to deal only with a reliable firm which has a reputation to uphold. Some of these may be found who advertise in the Cultivator, and although there are some who are enticed to buy cheap and unreliable seeds offered by unknown firms, we think that our readers generally are only looking for good results and therefore are prepared to buy only the best and those seeds which are tested, tried and true. Some seeds only retain their germinating powers a very short time, and it is very essential that fresh seeds be supplied. Only unreliable firms use old seeds which are worthless and are only disappointing to those who buy and use them. Seeds are tested to find out the percentage of germination and seedsmen who know their business know how each particular subject should come out under average conditions.

### Asparagus

This is the month to plant new beds and renovate old ones. Roots may be dug up from old beds, and where they have become thickly matted together they may be divided and planted 18 inches apart in rows three feet apart. A good plan is to sow seed in rows 18 inches apart, an inch apart in the rows, and it is advisable to soak the seed for 24 hours before sowing. Later the resulting plants may be thinned to three or four inches apart. Another year every other row should be transplanted to make the distance between the rows three feet apart. The third year from seed they will yield a good crop. Quicker results are of course secured by buying roots from the seedsmen. These must be planted at least four inches deep. Excellent varieties are Barr's Mammoth and Conover's Colossal.

### Brussel's Sprouts

These require a very long season of growth and the earlier you have the plants ready for planting out the better. It will be advisable to sow seed in a well prepared seed bed, broadcast or in rows. Seed should be sown sparingly. In the meantime the plot should be well manured and deeply trenched.

### Salsify

This is a vegetable which has the distinct flavor of the oyster and is now becoming very popular. It is the long root which is used and it may be served up in various ways. It grows best in a fairly sandy soil which should be richly manured. It matures from seed in about five or six months. The seed should be sown in rows 12 to 15 inches apart and the plants thinned out later to three inches apart. Mammoth Sandwich Island is the best variety.

### Leeks

Place a box in sheltered position

## Save Your Vegetable Crops

from Root Maggots and Worms

Many thousands of dollars worth of cabbages, onions, turnips, cauliflower, beets, radishes, and other vegetables are eaten up and destroyed by maggots and worms in this state every year. Market gardeners and home gardeners alike suffer. Many remedies have been tried but none have been completely successful—until the recent introduction of

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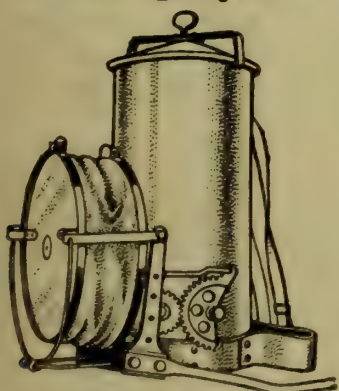
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and make up a mixture of fine garden soil and leaf soil with a little sand added. Sow seed of Dobbie's Champion. A packet will supply many plants.

### Parsley

This is useful for garnishing and should be grown in rows. Sow the seed in rows one foot apart and thin out the plants later to nine inches apart. It requires a fairly rich soil. The best varieties are Champion Moss Curled and Double Curled. It makes a fine edging if sown around the garden plots.

### Peas

The main crop of peas should now be sown, and such varieties as Abundance, a popular canning variety and only 1½ feet high. Senator, a very prolific pea, well filled pods, matures in 60 days. It grows 2½ to three feet high, hence will need wire supports. Stratagem, another semi-dwarf variety. All are excellent and will provide you with a continuous supply. Those varieties which need support should be grown against a few wires stretched across stout posts placed 12 feet apart, and it is better to sow them in rows three feet apart, allowing more space than the dwarf varieties which may be placed 12 to 18

inches apart. You will require one pound of seed to a row of 100 feet. See that the crop never suffers through lack of water.

### Beets

Make a sowing of Extra Early Egyptian, an excellent table beet, and Detroit Dark Red, a fine globe shaped variety. The soil should be rich and of a friable nature, and once the seedlings are up they should be thinned out to about four inches apart in the rows and never allowed to get dry. Encourage a steady growth if you would have tender beets. Sow the seed thinly.

### Onions

Late varieties or main crop may still be sown, and Ailsa Craig, Prizetaker and Australian Brown are all good keepers and should prove useful next winter. Sow a large area and thin out and extend it by using the plants you get from the thinning process. Brown onion sets may still be secured for planting and will furnish you with earlier bulbs. Cultivate between the rows of those earlier sown.

### Radish

Sow Early Scarlet Globe and French Breakfast broadcast or in rows thinly in fairly rich soil and keep well supplied with water.

## Ornamental Garden for February Northern California

Written for California Cultivator by A. R. Gould



WE HAVE been somewhat delayed in our planting owing to the fact that our usual supply of rain has not been forthcoming. However, we have been able to clean up and do most of the digging and lining out in preparation for tree and shrub planting, and various changes have been made in parts of the garden. Roses should have been pruned and mulched, old ones destroyed and the beds replaced by new stock.

### Roses

Now is the time to attend to the final work on the roses. New varieties are on the market, such as Los Angeles, a wonderful rose; Kitchen of Khartum, one of the latest; Isobel, a very fine single rose with immense flowers; Molly Bligh, of wonderful shape, and Margaret Dickson Hamill, a very profuse delicate rose. All these are gems and should find a place in your garden this spring. Improvement is still going on among the roses, and by having the latest you will get something choice.

### Hedges

Every opportunity should be taken to get all the hedges trimmed, and where there happens to be any dead plants these may be replaced. If you intend planting a new hedge the native California Cherry, *Prunus ilicifolia*, makes one of the best subjects for this purpose. It always looks green and hardy. The pittosporums were used quite extensively but have of late been attacked by scale severely, and this has resulted in the loss of some fine trees. The Monterey cypress makes an excellent wind or dust break and may be trimmed to almost any shape desired. For a low edging plant box, the dwarf variety, it makes a fine permanent edging.

### Some Choice Conifers

One of the most beautiful of conifers the writer has seen for a long time is "*Cedrus Deodara pendula*," the weeping Himalayan cedar. As a center specimen or placed on a lawn this

is certainly very attractive. A grouping of such cedars as *C. Atlantica*, *C. Atlantica Glauca*, *C. Deodara* and *C. Libani* is a sight to behold and make worthy specimens for any good sized garden. The silver firs, *Abies*, *Pin-sapo*, *A. grandis*, *A. lasiocarpa* and *A. cephalonica* are distinguished by their upright cones and are beautiful trees. They all make large specimens.

### A Few Select Flowering Shrubs

Among the best of flowering shrubs we would advise planting *spiraea prunifolia*, *S. japonica*, *S. argenta*, yellow Spanish broom, which flowers throughout the summer. The lilacs and syringa should be planted this spring. Among the veronicas we have very valuable material for grouping, and the best are *V. traversii*, *V. speciosa* and *V. andersoni*. The daphnes are very fragrant, and some of the best are *D. nezereum* and *D. cneorum*. The heathers, or ericas, are also very attractive, and if placed en masse are beautiful. Of these the best are *E. arborea*, *E. carnea* and *E. Mediter-ranea*.

### Sweet Peas

Trench deeply and sow the summer flowering Spencer types: Royal Purple, Dobbies Cream, King White, Florence Morse Spencer, Asta Ohn, George Herbert and Scintillator. They require well manured ground and plenty of water. Do not sow the seed too thick, and soak 24 hours before sowing. Thin out the seedlings to three inches apart later on.

### NO TIME FOR A LOAF

Some time ago, when a local corps was reviewed by Sir Ian Hamilton, one officer was mounted on a horse that had previously distinguished itself in a bakery business. Somebody recognized the horse and shouted, "Baker!" The horse promptly stopped dead and nothing could urge it on.

The situation was getting painful when the officer was struck with a brilliant idea and remarked, "Not today, thank you." The procession then moved on.—Weekly Telegraph.

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Metal mines have boosted output to meet world-wide demands. Great central power plants in place of small local plants in coal mining areas now supply cheaper electric power per ton output for each mine. All tonnage records have been smashed in the steel industry. Greater automobile output has lowered prices and given better road transportation.

More and better cloth has been produced at lower power costs.

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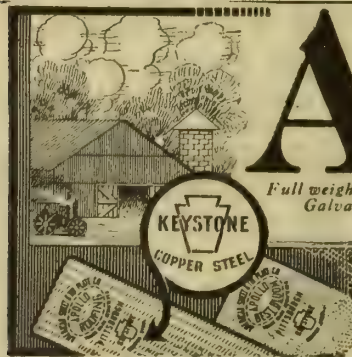
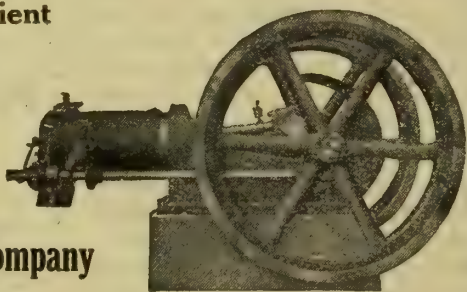
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Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

## The Government Sells Nitrate to Farmers

The Secretary of Agriculture announces the plan for the sale and distribution of the 100,000 tons of nitrate of soda for fertilizer use, purchased under the provision in the food control act which authorizes the president to secure nitrate of soda and to supply it to farmers for cash. A circular in which the plan is fully set forth is being mailed to the country agents who will receive orders for the nitrate and transmit them to Washington.

The f. o. b. price at ports will be \$75.50 a ton, farmers paying the freight charges from the port of arrival and the state fertilizer tag fee. The plan is that county agents will associate with themselves three or more local business men in each community, who will serve without compensation, to assist them in the sale of the nitrate. In each county where there is no county agricultural agent a committee of three or more local business men will be appointed. A farmer living in such a county who desires to make application for nitrate of soda should, if he does not know the address of the local committee, address an inquiry to the state director of extension for his state. The post office address of the director of extension in each state is given in the circular. The ships carrying the nitrate will be directed to the most convenient ports, including Charleston, Wilmington, Savannah, Norfolk and Baltimore. Representatives, who also

will serve without compensation, have been or will be selected to handle the shipments at these places.

Farmers will make application for nitrate upon blanks furnished by the county agents or the local committees. Applications must be signed and returned so as to reach the county agents or members of the local committees by February 4. As the nitrate, under the law, can be sold only for cash, the farmer will be required to deposit the money covering the cost of the nitrate he wishes with the local bank, association or individual to be designated by the department. The orders will be transmitted to the department, accompanied by the amount covering the same. If the quantity of nitrate that can be secured will fill all orders, each farmer will secure the amount he requests; otherwise it will be necessary to allot the nitrate to those applying for it so that all may participate on equal terms in its distribution. None of the nitrate will be sold to dealers, either directly or indirectly. It will be sold only to farmers directly for cash, and generally not in excess of the amounts used by them heretofore.

The government is making every effort to reach farmers who desire a part of this nitrate, but states that it will be impossible for the county agents or other persons to visit every individual farmer, and urges all who desire to purchase nitrate to get in touch with their local county agent or a member of their local committee.

## Get Rid of Squirrels Now

Timely in the present anti-squirrel campaign is the following from State Horticultural Commissioner Hecke as to methods of eradication during wet weather:

### Suffocation in the Burrow

By filling the colony or village with water. This has been proven to be a most effective method and should be used wherever local conditions will permit.

Poisonous gases (carbon bisulphide or Kilmol).

### Pump Method

Use two ounces or two full measures of the gauge for each squirrel hole. Insert the hose into the burrow to the depth of at least one foot. Give 30 strokes to the pump, which will place about 12 cubic feet of 1.5 per cent carbon bisulphid or Kilmol vapor into the burrow. Remove hose and tightly close burrow with earth.

The pump method, according to the state board of health, is between 95 and 100 per cent efficient. It is a method largely used by the state board of health in plague control.

### Waste Ball Methods

The most effective waste ball is about two inches in diameter and will hold about two ounces of carbon bisulphide. Place a number of waste balls in a covered box and pour in enough carbon bisulphide to completely cover them. Place one of the saturated waste balls in each burrow, shoving as far down as possible. Allow about two minutes for the gas to permeate the burrow and then ignite each burrow with a torch or match. Take care that you do not stand over the burrow as the explosion may blow in your face. Then tightly close all ignited burrows with earth, using care not to bury the burning waste ball.

### Another Effective Method

Procure a stick about three feet in length, such as a broom handle, and wire to this an ordinary tin can of about one pint capacity. The can should be wired to the stick about six inches from the upper end so as to allow room for a handle. The method of procedure is to place a waste ball in the can and pour about three ounces of carbon bisulphide over it. The lower end of the stick can be introduced into the squirrel burrow to be treated and held rigid with the foot in order to load the waste balls. The ball and superfluous liquid is then poured into the burrow and may be shoved down the burrow with the opposite end of the stick. Allow time for the gas to permeate the burrow (about two minutes) and ignite and close the hole.

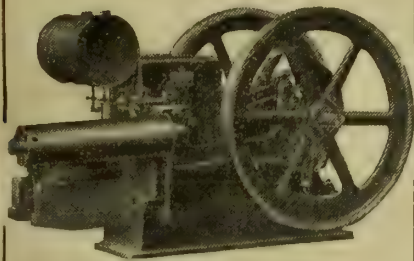
### Hose and Funnel Method

Fasten a funnel securely to the end of a three foot length of three quarter hose. Insert the hose as far in the burrow as possible and pour about three ounces of the liquid gas (carbon bisulphide or kilmol) through the funnel into the burrow. In case of a colony, repeat operation for 12 or 15 holes before igniting any of them as the burrow may be connected and the gas is apt to explode in your face. After allowing about two minutes for gas to permeate the burrow ignite and close burrow tightly with earth.

In using carbon bisulphide in colonies or villages all the burrows in the immediate vicinity should be treated before fire is applied. Be careful about ignition as the explosion in one burrow will often ignite all in the immediate neighborhood. The explosion frequently forces the flame two or three feet into the air and care should be taken that the inspector is not standing over one burrow when he ignites another. Carbon bisulphide gas is heavier than air and will fall down to the bottom of the burrow, but it is well to see that all openings are closed before leaving the community.



## WITTE IRRIGATING ENGINES



### Kerosene - Distillate 2 to 22 H. P.

Pump your water with a WITTE. All you need is a centrifugal and my Special Model Kerosene-Distillate Engine. I can lay your engine down at least cost. **Save the middleman's profit—Get your engine NOW.** while prices are still low. Have reliable power for all your work. Made in standard sizes—2, 3, 4, 6, 8, 12, 16 and 22 H. P. Battery or magneto equipment. I am in a position to offer you the best prices and make **immediate shipment.** 90-Day Trial—5-Year Signed Guarantee. Largest exclusive engine factory in the world selling direct to user. Cash, Payments, Bank Deposit or No Money Down. Suit yourself as to terms. Don't make a deal until you have investigated my offer.—Ed. H. Witte, President.

### WITTE ENGINE WORKS

3101 Oakland Ave., Kansas City, Mo.  
3101 Empire Bldg., Pittsburgh, Pa.

## SIZE OF PULLEYS

Some Rules for Installation of the Farmer's Power Plant



VERY power-driven machine is designed by its maker to run at a certain speed in order that it shall deliver the best results. But just as long as there is no concerted action between the makers of these machines and the manufacturers of the gasoline engines, which are to run them, in the matter of pulley sizes, more or less trouble for the farmer is sure to result. This will be due to the fact that the speed of farm engines varies so greatly, and because the drive pulleys, with which they are fitted, are of such different sizes. The matter of pulley size never has been standardized, and so the farmer is left pretty much in the dark as to whether his power machinery is being driven at proper speed or not. He never can tell, when he buys his silo filler one make and his engine of another, that the two will come to him equipped with pulleys that will be properly proportioned to make the combination as effective as it ought to be and as it is designed to be.

The present tendency among manufacturers is to decide upon some uniform speed for the drive belt, which, having been determined, would make the coordination of the pulleys a very easy matter to figure out. The trouble at present seems to be that opinions differ widely as to what the standard speed for the belt should be. Present practice is to give belts speed all the way from 1,200 feet to the minute to 3,600 feet. This is too wide a variation, of course, and rather complicates the situation than otherwise. One manufacturer of power-driven machinery, in a recently published interview, says a belt speed very easily could be decided upon which should show no greater variation than from 1,800 to 2,800 feet per minute. This would enable the farmer to approximate the speed of his machine within such narrow limits that he would be enabled, in a majority of instances, to get the highest degree of efficiency out of them.

This same manufacturer says that no power-driven machine should have a pulley of less than eight inches in diameter nor more than 14 inches. Assuming that the farmer will see to it that his pulleys are between these limits, then corresponding pulleys on the engine ought to have sizes as follows, according to the revolution per minute of the engine, to give the proper belt speed:

Engine with r. p. m. of 300, diameter of driving pulley 24 to 36 inches; r. p. m. of 350, diameter 20 to 28 inches; r. p. m. of 400, diameter 18 to 26 inches; r. p. m. of 500, diameter 16 to 21 inches; r. p. m. of 600, diameter 12 to 18 inches; r. p. m. of 700, diameter 11 to 15 inches; r. p. m. of 800, diameter 10 to 13 inches; r. p. m. of 900, diameter 9 to 11 inches; r. p. m. of 1,000, diameter 8 to 10 inches. These relations are worth while remembering, for until such time as real standardization comes, and goodness knows when that will be, the farmer is going to be perplexed continually by such problems as this. But if he will exercise a little care to keep his pulley variations within the limits given above, he will very nearly approximate the best results possible from his power machinery.—F. M. L., in Farmer's Guide.

We wouldn't mind paying two prices for everything we buy if we didn't have a sneaking notion that the second price is graft.

## COLLECTIVELY SPEAKING

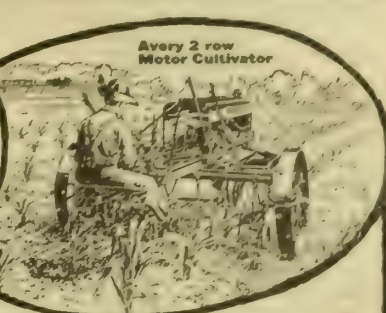
"Say, Casey, did you ever make an idiot of yourself over women?" "An idjut, is ut? Sure I've made myself an intoire asylum." Boston Transcript.

## A STUBBORN BEAST

Old Pegasus, they say, 's a horse; Now I would have no duel With wise mythologists, of course, But I think Peg's a mule!



One of the 6 sizes of Avery Tractors



Avery 2-row Motor Cultivator

## Averyize Your Farm Work

THERE isn't any question any more about the success of tractor farming—the only question now is—which is the best tractor for you to get.

When you **Averyize** your farm you can be sure you have made a wise selection. When you get an Avery you are getting a tractor that is long past the experimental stage. It has been put to every test known.

We proved our faith in the Avery design by introducing Avery Tractors on a sold-on-approval policy. We have proved the success of the Avery design by entering it in every important motor contest and demonstration held in this or any other country.

And the strongest proof of the success

of the Avery design is that men who bought the first Avery Tractors years ago are buying more Avery Tractors—sons, brothers, cousins and neighbors who have watched Avery work are buying in large numbers.

Avery Tractors are built by a company having over thirty years' experience in building power farming machinery, with tens of thousands of Avery machines in operation all over the world, and by a company owning a large factory with branch houses and distributors covering every State in the Union and over 60 foreign countries.

## A Size for Every Size Farm and Every Kind of Work

There are six sizes of Avery Tractors from which you can pick exactly the right size tractor for your work.

There's an Avery Two-Row Motor Cultivator for doing your cultivating and other light traction and belt work.

Then you can get an Avery Plow and an Avery Thresher to fit any size tractor, and you have an equipment of Tractor Farming Machinery that will enable you to raise a larger crop at less expense and save it after you raise it.

The five sizes of Avery Tractors—8-16, 12-25, 18-36, 25-50 and 40-80 h. p. are all built of the same design. Also a 5-10 h. p. Tractor, especially built for small farms and lighter work on large farms. Avery Trac-

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They are the only tractors with renewable inner cylinder walls, crankshafts one-half the diameter of the cylinders, adjustable crankshaft boxes, no fan, fan belt, governor belt, fuel pump, or water pump.

### Light and Heavy Plows and Threshers

You can get an Avery Tractor Plow, either light or heavy, in any size from 1 to 10 bottoms, and an Avery Thresher in any size from a small 19x30 inch up to a large 42x70 inch.

## Write for the 1918 Avery Motor Power Book



Get a Guaranteed Avery Grain Saver Thresher in any size, 19x30 inch up to a large 42x70 inch.

It shows all Avery machines in their natural colors, both stationary and actual working scenes. It has unusual detailed illustrations of tractor construction. Write for free copy and ask for special information about the size machines you need. Address

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C. S. Anthony, So. Cal. Distributor, Los Angeles, Cal.

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There's a size Avery Tractor for every size farm and every kind of work.

Every ball of the YUBA TREAD kept at work at food production helps as much as a hundred balls flung into German trenches.

Write for the Catalog

## Yuba Manufacturing Co.

Dept. B18

433 California St.  
San Francisco

### Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines

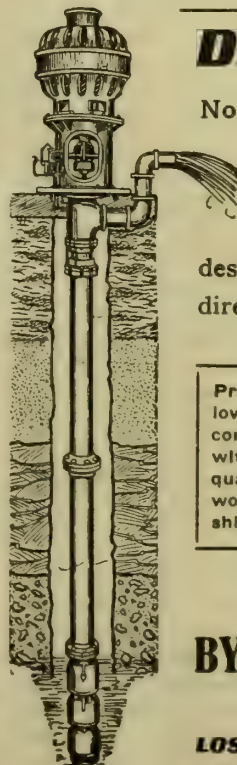
The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of the Water Watch

Hydrometric Co. 955 North Main St. Los Angeles, Cal.

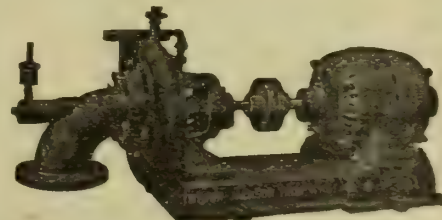
## DEEP WELL TURBINES

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.



Prices as low as are consistent with good quality and workmanship.



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**The California Cultivator**

A Journal of Horticulture, Agriculture  
 and Live Stock

Rural Californian, Established 1877.  
 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established  
 1901, Combined with California  
 Cultivator 1916

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**Saturday, Feb. 2, 1918**

**OUR ADVERTISERS RELIABLE**

We guarantee our subscribers against  
 loss through dishonesty of any adver-  
 tisers in the Cultivator. We do not at-  
 tempt, however, to adjust trifling dif-  
 ferences between subscribers and honest,  
 responsible advertisers, nor will we pay  
 the debts of honest bankrupts. Notice  
 of complaint must be sent us within 30  
 days from date of the transaction, and  
 the subscribers must have mentioned the  
 Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

It is most satisfactory when one  
 can load the ordinary two-horse wag-  
 on with the first products of the year  
 and return home with a check for  
 \$1100. Such a load is shown in the  
 engraving on the cover this week. It  
 was taken on the ranch of A. Gustlin  
 of Orange County, and, in addition to  
 showing the one load of walnuts  
 which brought in the satisfactory  
 check, it shows method of ranch care  
 of the nuts. The racks are five by 16  
 feet, six inches in depth, and to pro-  
 tect the nuts from fogs or hot sun the  
 "apron" may be thrown over the ridge  
 pole. A dry rack with the cover over  
 the pole is shown in the background.  
 Walnuts have proven a remarkably  
 satisfactory crop for California and  
 for the whole country, in fact, this  
 year the supply practically all comes  
 from California.

**GOVERNMENT SEEDS**

In order to secure early distri-  
 bution of government seeds the de-  
 partment of agriculture has asked  
 congress for \$6,000,000 to purchase  
 seed to be sold to farmers at reason-  
 able prices. Perhaps this seed will  
 be better than that distributed by  
 congress. That congressional seed  
 distribution has cost the people of the  
 United States millions of dollars with  
 returns which are hard to find.

**INCOME TAXES**

This is the last month for  
 making returns to the income tax col-  
 lector. Every reader of the Cultivat-  
 or must bear in mind that to fail to  
 make this return renders every un-  
 married person with an income of  
 \$1000 or more and every married per-  
 son with an income of \$2000 or more  
 liable to a fine of from \$20 to \$1000.

Now the Cultivator has repeatedly  
 referred to this and takes this occa-  
 sion to suggest again that there is less  
 than four weeks to make out and file  
 return. It is wonderfully complicat-  
 ed and any one who has any question  
 about it should file the report, for  
 there is no disposition on the part of  
 the revenue collector to make collec-  
 tion where no tax is due, but it is well  
 that we all should be familiar with  
 the provisions of the law and the prob-  
 ability of punishment. Presumably  
 under stress of the war patriotism  
 alone is enough to induce us to do our  
 part, but the technical side of these  
 reports must be given attention, for  
 complying with what seems to be  
 mere formality is safer than taking  
 chances.

**BIGGEST ON EARTH**

In magnitude of business under  
 one management Standard Oil, Ameri-  
 can Steel, Copper Syndicate, and a  
 few other great institutions have been  
 referred to as showing the magnificent  
 efficiency secured in the handling of  
 great aggregations of capital. Now  
 comes a gathering of the earth's  
 forces under one management so in-  
 finitely greater that there is practi-  
 cally no comparison. Two hundred  
 and sixty-five thousand miles of rail-  
 way of the United States have been  
 brought under the absolute direction  
 of one man. These railways cost  
 \$20,000,000,000, employ 3,000,000 people  
 and their net earnings are around  
 \$1,000,000,000. The value represented  
 by these great properties is far greater  
 than that of all the railways of Eu-  
 rope, with 50,000 miles to spare. Rus-  
 sia—what was United Russia—was  
 second in railway mileage, but boast-  
 ed only about 49,000 miles.

The experiment that is being tried  
 in this country is of such magnitude  
 and has such possibilities that none  
 can help wonder and ask what will be  
 the result.

**HASTENS MATURITY**

The country never produced such  
 a crop of corn as last year; likewise it  
 never had such a quantity of soft  
 corn. The early fall frosts caught the  
 ripening crop in nearly all of the  
 corn states. Only favored sections  
 shocked, and now thousands of tons  
 are softening or at least lowering in  
 value. The farmer who salted down  
 his corn as it was put in crib finds  
 fairly good results, but the lesson is  
 this, as we note in the Rural New  
 Yorker:

Superphosphate used with the ma-  
 nure would have ripened the corn  
 earlier, and in some cases saved it  
 from frost. There are a few people in  
 the country who accuse us of selling  
 out to the fertilizer trust whenever  
 we advise the use of superphosphate.  
 The fact is that available phosphorus  
 is one of the most necessary fertiliz-  
 ers for all grains. It is also a fact  
 that the fertilizer manufacturers are  
 having their troubles this year like all  
 the rest of us. Shall we be accused  
 of "selling out" to our readers when  
 we tell them that available phosphor-  
 us will not only ripen the grain ear-  
 lier, but plump the wheat kernels and  
 increase the yield?

**CHEAPER FEED**

Under the above title last week  
 we referred to reports of receipts in  
 stockyards of the United States, in  
 which there were comparisons of the  
 years 1917 and 1916, showing that 1916  
 made far greater deliveries than did  
 1917. This should have read; "far

greater deliveries of hogs." One  
 reading the article through notes that  
 it touches upon hog feeding, but  
 strictly, as it stands, the first sentence  
 would convey a wrong impression.  
 Hence a letter from D. O. Lively of  
 San Francisco who calls our attention  
 to the receipts of cattle in 1916 in  
 Chicago, which were 368,291, while in  
 1917 there was an increase of 103,676,  
 the total deliveries being 471,967.

Again, for the first nine months of  
 1917 the receipts of all stockyards in  
 the United States were 14,869,615;  
 during the same period of the preced-  
 ing year, 11,702,955, or over 3,000,000  
 more cattle in 1917.

Now then, we want more hogs; we  
 must have more hogs, but in the beef  
 situation the Pacific Coast is side-  
 tracked for the time being. Hence our  
 meatless day has been declared off,  
 and instead we have now two porkless  
 days. Until the situation is changed  
 somewhat California may eat beef  
 seven days a week.

**WAR SAVINGS STAMPS**

The campaign for war savings  
 stamps which was referred to several  
 times in November and December is-  
 sues of the Cultivator is now on in  
 full force. The price of the stamps  
 will have advanced before these words  
 are read, for on February 1 an addi-  
 tional cent is added to the cost of ev-  
 ery war savings stamp.

A thrift stamp, which is slightly  
 larger than an ordinary postage stamp,  
 costs 25 cents, it bears no interest, al-  
 ways remains of the same value. The  
 purchaser is given a thrift card with  
 place for 16 of these stamps. When  
 filled it has cost \$4.00, which, with 13  
 cents during February, 14 cents dur-  
 ing March, and so on, may be exchang-  
 ed at post office, bank or elsewhere,  
 for one war savings stamp. This  
 larger stamp bears interest at the  
 rate of four per cent, compounded  
 quarterly, which makes it mature on  
 January 1, 1923. With this war sav-  
 ings stamp may be had the war sav-  
 ings certificate with place for 20  
 large stamps, which at maturity  
 makes this certificate, if filled, worth  
 exactly \$100.

By December 31, 1918 it is presumed  
 American boys and girls will have  
 taken these stamps to the value of over  
 \$2,000,000,000, and the \$2,000,000,000  
 will return to the boys and girls who  
 have purchased them to help in their  
 education or in financing some little  
 business of their own in 1923.

We believe no movement of such  
 value was ever handled in this coun-  
 try, and the greatest interest on this  
 \$2,000,000,000 will be the habits it has  
 helped to form. We may safely say  
 that this will not be allowed to be ex-  
 clusively a children's movement, be-  
 cause people of all ages and of all de-  
 grees of prosperity are purchasers of  
 stamps.

Let readers buy long and many of  
 these stamps. They are not transfer-  
 able, but they do have a cash surren-  
 der value, which is stated on the card  
 given with the thrift stamps, and this  
 value becomes greater month by  
 month. The greatest increase comes  
 to those who hold until maturity. The  
 method of cashing in advance of ma-  
 turity is to give ten days written no-  
 tice at the nearest post office.

There should not be a soul in  
 America who is not helping the war  
 to the extent of buying at least some  
 of these stamps.

In the matter of these habits we are  
 forming, we have heard of one other  
 thrift habit, that of saving cancelled  
 postage stamps, which are to be  
 converted into funds for the sup-

port of Belgian babies. Through the  
 Red Cross these stamps are handled  
 and in some way treated so that the  
 dye is extracted, and it is claimed  
 that 1000 stamps will keep a Belgian  
 baby for a month. This sounds over-  
 drawn to us, but perhaps it is true.  
 Even if it is not, there is enough  
 truth in it that it shows one of the  
 many lessons which the present war  
 has brought home to us, that of econ-  
 omizing on the thousands of things  
 which are wasted in this country.

**This Week's War News**

Fires continue to occur in munition  
 factories both in this country and in  
 Canada.

London was bombarded on Monday,  
 the attack lasting five hours. Many  
 were killed and injured.

Italy's front is still maintained and  
 even advanced, one day's reports  
 showing capture of over 1500 Huns.

The large munition factories at Es-  
 sen had a serious strike occasioned  
 by some of the labor leaders being or-  
 dered to the trenches. Food conditions  
 almost approach famine.

There have been many rumors of  
 German submarines observed on this  
 side of the Atlantic. These are not  
 confirmed and it is not known  
 that there have been any sinkings.

It has not been a week of startling  
 war events, but there have been many  
 startling rumors as to peace, but in  
 every case each nation names its own  
 terms which are not acceptable to the  
 other side.

The western front has been general-  
 ly quiet excepting for almost contin-  
 uous artillery action and occasional  
 air battles. Tuesday's reports con-  
 tained accounts of sinking of several  
 German air ships.

In food regulations in this country  
 the one meatless day each week or-  
 der has been revoked as to certain  
 drouth sections of the West, and two  
 porkless days, Tuesday and Saturday,  
 have been named.

Finland has demanded immediate  
 evacuation of Finland by Bolshevik  
 troops. There are reports of almost  
 continual fighting between the Bol-  
 sheviki and Finnish troops with  
 Swedes taking a hand against the  
 Bolsheviks.

The general condition in Russia is  
 one of anarchy, with little news com-  
 ing to the outside world as to any de-  
 finite plan to be worked out. Southern  
 Russia has an organized government,  
 but its hand is not yet strong in the  
 management of affairs with Austria.

Rumors continue to sift through of  
 serious conditions not only in Austria-  
 Hungary, but Germany where laboring  
 classes are entering upon strikes, and  
 from both Holland and Switzerland  
 these reports are confirmed. The  
 morale of the armies is at the break-  
 ing point.

A letter written by the Belgian  
 King Albert to the pope in December  
 has been made public during the past  
 week. He assures the pope that his  
 only desire is to see a just and dur-  
 able peace put an end to the evils  
 which humanity, and particularly the  
 Belgian people, are suffering.

Secretary Baker made address be-  
 fore congress which was roundly ap-  
 plauded. He pledged that a million  
 and a half American soldiers would be  
 on the French front before the end of  
 1918. He spoke of the magnitude of  
 the task which confronted this nation  
 and the masterly way in which it has  
 been handled. It has been learned  
 through Swiss sources that Germany  
 is only beginning to surmise as to the  
 magnitude of America's preparation.



# Agricultural News Notes of the Pacific Coast

## Northern California

Gold dredging has increased since the beginning of the war.

Ferndale creameries all paid 55 cents for December butter fat.

Great numbers of salmon are running in the streams of the valley.

Yolo County's support for the Associated Raisin Company is almost unanimous.

Sheridan Baker of Santa Rosa is made president of the Sonoma County farm bureau.

First farm meeting of a farm bureau center of Eldorado County was that of Mosquito farm center.

Nuestro Farmers League, recently met and elected A. M. Sawyer president and Edward Vivian, secretary.

Eldorado County is looking ahead to the observance of squirrel week sometime during the month of April.

The El Dorado County farm bureau directorate recently met and organized. Burle Jones is adviser for the county.

At the last farm bureau meeting at Bowman, Placer County, resolution were passed urging formation of an irrigation district.

Hydro-electric companies operating in the Coast Range and Sierras will be compelled to use steam power unless heavier rainfall is received.

Butte County Farm Bureau is to make campaign for bigger membership. The slogan is "Over the top with Butte County Farm Bureau."

Butte County is planning for extensive silk production and thinks that within five years there will be many thousand acres devoted to mulberry growing.

A whisky distilling company at Sausalito contemplates manufacturing alcohol and, as a by-product, potash for which a \$500,000 improvement in the works is to be made.

Durham, Butte County, is making an effort to secure the location of the 5000 acre colonization farm. The state board has 37 other tracts under consideration however.

The Sacramento Valley Development Association has a committee at work to determine as to sources of irrigation waters which may be available for use in the Sacramento Valley.

County Horticultural Commissioner Mills of Butte reports production of 60,000 tons of alfalfa in Butte County; 500 tons sugar beets; 1200 tons olives; 2800 tons peaches; 2625 tons prunes; and 37,500 rice.

Farmers committee of the California Development Board is mailing circulars appealing for importation of Chinese labor or at least some plan whereby sufficient help may be secured to plant and harvest crops of the state.

The Eldorado County farm bureau is investigating possibilities of establishing a limestone plant. Adviser Amundsen and the lime committee; J. A. Teagarden, J. A. Livingston, Geo. Petterson, J. H. Wyatt, recently inspected the plant of the Eldorado Limestone and Mineral Company near Shingle Springs.

Fruit shipments from Shasta County, according to report of the horticultural commissioner, include over 2,000,000 pounds of prunes; 60,000 pounds peaches; 48,000 pounds pears; the above all cured fruits; Fresh fruits; 27 cars pears; and other cars of grapes, olives, plums and apples.

## Central California

Fresno is making a pull for the state colonization farm.

A Bakersfield hog grower recently sold seven cars of hogs which brought \$18,816.

Terra Bella irrigation district has handled over \$900,000 of its funds during the past two years.

Oakdale, Stanislaus County, reports shipment of over \$3,000,000 worth of crops from that section.

Kings County bee beepers will co-operate in marketing honey and will meet in Hanford this week to perfect detail plans.

Tulare Cooperative Poultry Association meets Monday, February 4, to eat chicken and talk over the past year's business.

Oakdale, Stanislaus County, is making protest against the use of irrigation canal by Sierra and San Francisco Power Company.

Sugar beet planting of the valley is made far later than any preceding year, and it is now feared that there will be a serious shortage.

Record prices for cream were secured by dairymen delivering at Corcoran creamery. Fifty-six cents was paid for last month's delivery.

State Dairy Inspector Peairs of Tulare says that one great need of the central part of the state is greater acreage of alfalfa. The price at present is above \$25 in the stack.

Commissioner Collins of Tulare County, reports 4060 acres of citrus groves have been fumigated during the last year at a cost of about \$142,000. There were about 2290 acres sprayed.

California Peach Growers branch at Hanford recently met and discussed the matter of the new packing house and determined to make a canvass for a greater membership for Kings County.

San Jose tomato growers are signing contracts with the Cooperative Producers organization and hope to market the principal part of the tomatoes of the Santa Clara Valley through cooperation.

Friday of this week closes the great campaign for signers of the new raisin contract. Presumably enough contracts will be signed to validate, but hard work is being done up to the last moment.

Monterey and San Benito Counties will unite in a squirrel campaign. These two counties will make complete a chain of counties along the coast, over 600 miles long, which are fighting the varmints.

The raisin association reports serious shortage in number of acres required to make the new five year contract effective. Unless the required acreage is signed up prior to February 1 the entire effort will be in vain.

The annual of the Exeter Creamery Association was occasion for making of report which showed receipts for the year over \$300,000 and total butter manufactured, 650,000 pounds. An eight per cent dividend was declared.

Tulare County's cream check for December amounted to nearly a quarter of a million dollars. Kings County also played a close second, only a few thousand short of Tulare County. Some prices ranged as high as 36 cents, with average for churning cream around 53.

## Southern California

Cabbage aphid is still devastating many fields.

Honey producers are planning for large output.

Nearly 70 per cent of Navel oranges are running over size.

The planting of hemp in the Imperial Valley will be large next year.

It is said that over 100 Japanese fishermen are seining fish in Salton Sea.

Home economics is a regular department of several of the farm bureaus.

Olive packing works at Hemet, Riverside County, are putting up 185 tons home fruit.

California Lima bean growers have sold about three-fourths of the last season's crop.

Nearly all tomato canning factories of Southern California ran through the month of January.

El Cajon, San Diego County, farm center is discussing the protein, crude fibre, carbohydrates, etc. of poultry feeds.

Lankershim, Los Angeles County, has a new poultry association. It is expected it will be large enough to make carlot shipments.

Members of the Hemet-San Jacinto Growers' Association are contemplating extensive improvements in the cannery before another packing season.

Poultrymen of Riverside County are planning to stamp date on every egg harvested and build a brand for their eggs, which will justify top-notch prices.

The annual agricultural assembly, at Holtville, Imperial County, one of the principal events of the valley, has changed its date and will now be held February 14.

Sugar beet planting situation is still unsettled, though factory people of Orange County claim there has been about 90 per cent of normal planting in that county.

San Diego County orchardists recently met in the orchard of one of the members of the farm bureau at El Cajon and spent the day studying pruning methods.

Harry S. Smith, superintendent of the state insectary, is in charge of a pest survey of the state. He will work in conjunction with county horticultural commissioners.

The next meeting of the county chamber of commerce of Riverside is to be held at Corona. This body has unqualifiedly endorsed the movement to secure Chinese farm help.

One of the livest farm center sections in the Los Angeles County farm bureau is that of the Antelope Valley. An effort is being made to break the center up into three separate organizations.

The Indio levee district has been prevented from continuing work on its storm water protection levee by a ruling of the superior court, as the court maintained the plans of district were inadequate to control flood waters.

Poultry Producers of Southern California has addressed a letter to its members in which the facts of a recent law suit against a violator of contract of the association are stated and members are urged to stand true to the organization, which is necessary, if the industry is to live.

## The Coast and General

The press of California is insistent in demanding that next year's taxes shall be lower.

Investigations by the bureau of markets indicate supply of frozen and stored beef as much greater than on December 1.

The Lewis County Pure Breeders' Club recently met at Chehalis, Washington. The president for next year is N. B. Coffman.

The American Livestock Association which met recently at Salt Lake City contributed \$20,000 to aid the market bureau in securing greater live stock production.

The eighth annual of the Western Washington Horticultural Association was recently held in Seattle. Special attention was given to increasing horticultural products of the state.

The Arkansas Valley Cow Testing Association, Colorado, has closed its first year successfully. The officers for next year are C. W. Hall, president, R. McCann, Fort Collins, secretary.

Grain farmers of the Northwest are planning for more general bulk storage of their grain than ever before. Whitman County, Washington, farmers will bulk their grain so far as possible.

The American National Live Stock Association in its 21st annual convention at Salt Lake City raised \$30,000 to cover expense of representative to remain in Washington and cooperate with the federal food administration.

It is proposed to make an appropriation of nearly \$10,000,000 for various government reclamation projects. Ninety-five thousand dollars of this is for use in the Orland, California, project and \$950,000 for the Yuma project.

It has been suggested that the transportation situation be solved or at least aided by placing an embargo on all but food and fuel, that is excepting passenger traffic and to control that by greatly increasing passenger rates.

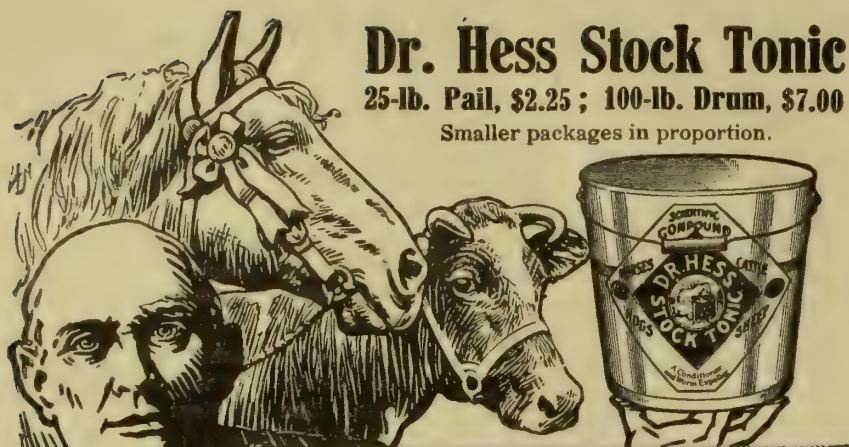
It is anticipated that congress will authorize the registration of young men who have become 21 years of age since June 5, 1917 when the original draft law went into effect. The present indications are that the age limit will not be raised.

The department of labor is endeavoring to solve the question brought up by farmers in many Eastern farming sections in effect that the farmer cannot produce crops if manufacturers of war supplies continue to take their laborers from them at fabulous wages which farming does not permit.

The total ocean going vessels now afloat number about 30,000 with a gross tonnage of 45,000,000. Shipping loss since the beginning of the war has totaled about 8,783,080 tons, and the supply of ships is about 20 per cent of normal, with demand for munition and troop ships far above normal.

As a proof of the value of apples in the present sugar shortage the Iowa state horticultural society calls attention to the high content of sugar in ripe apples. Good grade of strictly ripe apples will run 15 to 18 per cent of sugar, or, as expressed by one, 12 cars of apples would contain something like two cars of sugar.





## Dr. Hess Stock Tonic

25-lb. Pail, \$2.25 ; 100-lb. Drum, \$7.00

Smaller packages in proportion.

### Condition Your Stock Drive Out the Worms

**Spring is here**—your animals have long been on dry feed and as grain, hay and fodder do not contain the laxatives so abundantly supplied by grass, they are apt to be out of fix.

Now's the time to feed Dr. Hess Stock Tonic to **your horses**, to condition them for spring work, so that when the sun shines they will be rid of their old coat, full of stamina and ready for business.

And don't overlook the spring **pig crop**—the money-makers. Start them off free from disease—free from worms, by a course of Dr. Hess Stock Tonic.

**Your cows** will be benefited by Dr. Hess Stock Tonic, and it will keep your **feeding cattle** right up on their appetites during the finishing period.

Excellent for **ewes** at lambing time.

Dr. Hess Stock Tonic contains laxatives to regulate the bowels, diuretics to remove dropsical swellings, tonics to improve the appetite and increase digestion, and vermifuges to expel worms.

There's a dealer in your town that will supply you with Dr. Hess Stock Tonic and guarantee it to do these things.

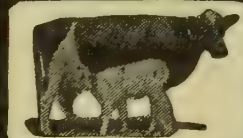
Dr. Hess & Clark, Ashland, Ohio

Dr. Hess Poultry PAN-A-CE-A  
will help make your hens lay now

You buy  
my Stock  
Tonic from  
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in your  
town at  
rock-bottom  
prices.

## Dr. Hess Instant Louse Killer Kills Lice

### ABORTION IN CATTLE



PREVENTED AND CURED PERMANENTLY  
YOUR COWS MADE PROMPT. REGULAR BREEDERS BY  
**STERILOID**

#### STOP LOSING CALVES

**TREATMENT:** If **STERILOID** is used at the first sign of abortion the cow will go her full time and have a healthy calf. If your cows or heifers do not come in season, or fail to get with calf, use **STERILOID**. Cows get with calf after only one treatment. Write today for **FREE BOOK**. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with **STERILOID**. Also contains letters from breeders who have used **STERILOID** successfully.

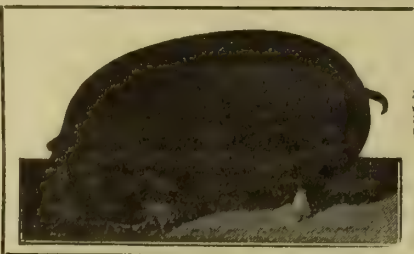
**GUARANTEE:** We will refund money in every case when **STERILOID** FAILS to make good. Price \$1.00. Mail postpaid. In plain wrapper.  
**MARTIN REMEDY CO.** Dept. L 398-408 Columbus Ave., New York City.  
Reference, Colonial Bank.

## Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar, Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

**M. Bassett**

Hanford, Kings County, Cal.



## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

## The Alfalfa Weevil Menace

Written for California Cultivator



INTO the office of the state commissioner of horticulture bustled two men resolved to demand that what they considered a senseless quarantine be removed against salt grass hay from Utah. Excelsior is scarce and high and they needed the salt grass as a substitute packing material. However, after they had been seated and had made their demands, the commissioner said: "Gentlemen, the live stock industry of this state depends upon our \$50,000,000 alfalfa crop, and it is to protect it from the ravages of the alfalfa weevil that we maintain a quarantine against all

present time in Utah, the southeastern corner of Idaho and the southwestern corner of Wyoming. It was introduced in some unknown way from the Old World, where it is found throughout the Mediterranean region. It was first discovered in this country near Salt Lake City, Utah, about 13 years ago, where it covered only a few acres of territory. Since then it has spread with considerable rapidity, although it has not made any extended jumps in its distribution.

The adult insect is one of the snout beetles, or rhynchophora, belonging to the same family as the apple curculio and plum curculio of the Eastern states. It is about three-sixteenths of an inch in length, grayish brown in color, and possesses a comparatively long snout. The adult weevils pass the winter on the ground in rubbish and in crevices in the soil. In the spring when the alfalfa begins to grow they come out of their hiding places and begin feeding upon the tender alfalfa shoots. Feeding takes place through the long snout with which it punctures the alfalfa stems for the purpose of sucking out the plant juice. After feeding for several days or weeks during the early spring, egg-laying begins. The adult female bores a hole into the alfalfa stem with her snout, after which she turns and deposits the eggs into this cavity. The eggs are very tiny, golden yellow in color and oval in shape. They are laid in clusters, five to 40 in a mass.

The eggs hatch in a few days, the incubation period depending of course upon conditions of temperature and humidity. The newly hatched larva is pale green, almost yellow in color, with a black head. It soon leaves the egg cavity in the alfalfa stem and crawls up to the tender growth at the top of the plant where it can feed in hiding. In a few days the first molt takes place, the larva now becoming a darker green in color and of course larger in size. In the succeeding molts it gradually increases in size and feeding capacity, and a faint pale stripe appears running down the middle of the back. After feeding for a month or so it becomes full grown, increasing about a quarter of an inch in length. The larva feeds almost entirely on the tender portions of the host plant, in this way preventing it from making any appreciable growth. When the larva or grub has become full fed, pupation takes place. This generally occurs at the base of the plant in the old stems and rubbish usually found there, although it frequently pupates within a curled leaf. The pupa is contained in an extremely delicate, lacy white cocoon through which the contents may easily be discerned. It is pale green in color, gradually becoming darker until just before it changes into the adult beetle, when it takes on a brownish tinge.

The greatest damage resulting from the presence of this insect occurs in the first and second crops. The first crop usually succeeds in making a start in the spring, before the young larvae are abundant. However, the alfalfa stems are soon filled with eggs, and the larvae hatching from these eggs before the crop is cut sometimes cause a total loss. The second crop will usually be a total loss if nothing is done, since the abundant larvae found on the first crop at the time of cutting fall to the ground and overwhelm the new shoots of the second crop so that it is entirely prevented from growing, and the field remains as



Point of Attack



A Friend of the Kaiser  
The weevil greatly enlarged

kinds of hay from Utah." He then went on to explain that the weevil caused a loss of one-third to one-fourth of the crop in the infested districts and that the reason hay straw, tule packing, etc. were excluded also, was the habit of the weevil of hibernating in stacks of hay and like material during the winter. As the commissioner finished his explanation, one of his visitors said, "I did not understand the situation and I am very glad indeed that you maintain such a strict quarantine, as I am an alfalfa grower myself."

Another instance of the working of the quarantine against the alfalfa weevil is the case of a shipment of two cars of potatoes packed in straw, which arrived in Los Angeles last month. These cars were refused admittance and had to be shipped out of the state, although the owner threatened to appeal to the governor. There is no quarantine against potatoes from Utah. Properly packed cars containing no straw arrive and are released continually. The owner of the two cars that were denied admittance was unfortunate in that he did not know the law himself and the railroad agent neglected to inform him. The alfalfa weevil occurs at the





Devasted Field

Condition of untreated field used as a check. The second and third crops on this field made little growth and were much delayed, so what would correspond to the fourth crop was caught by frost.

barren as though the alfalfa had been suddenly killed. The damage in the the infested districts has been estimated at 50 per cent of the entire second crop, where remedial measures are not taken.

Some requests have been made to the state commission of horticulture

to admit alfalfa hay from Utah, and owing to the hay shortage many more requests are expected. However, the commissioner states that the pest is too serious to take any chances with and that therefore he will not permit alfalfa hay to be imported from the weevil infested districts.

## The Care and Feeding of Horses

These hints were issued primarily for boys in the service who are handling horses, but they are of interest to all who have horses to care for.

Remember that the horse is an extremely timid animal and must be handled very gently, though firmly. Always speak to the horse when approaching him; take hold of his headstall carefully, pat him on the neck and draw his head slowly toward you. In tying him be sure that the rope is not so long that he can get his leg or foot over it, as painful wounds are often caused in that way.

In entering a stall do not put your hand on the animal, as that might cause a vicious or stupid horse to kick, especially if you are a stranger to him; but tell him to "get over," and then step in quickly on the left of the horse.

In leading a horse take a firm grip of his headstall or bridle with your right hand, hold the end of the halter rope in your left hand, and keep beside him, not in front of him. If he rears or pulls back, you can let go of the headstall and hold him by the rope,—not trying to struggle with him, keeping your face turned from the animal, but stepping toward him as he goes backward. He must move slowly in going backward, and will soon tire of it.

Do not mount a horse equipped only with a halter; and do not attempt to ride a strange horse unless he is bridled, and there is some one with you to hold him, and lead him about at first. You may be willing to take the chance yourself; but a horse never forgets anything, and if he bolts or throws his rider once, he may do the same thing again at a critical moment. The Prince Imperial lost his life because his horse would not stand to be mounted.

The stomach of the horse is extremely small, and therefore he should be watered at least three or four times a day, and if possible should receive both hay and grain three times a day. The less work he does the more important it is to give him hay often, because a hungry, idle horse is apt to take up some bad habit such as biting, kicking, cribbing, or weaving.

If the horse gnaws his manger or stall it is certain that he needs salt, unless he is very hungry. Keep a lump of salt always before him, if possible.

Horses should be watered first and fed afterward; and if possible watered again an hour or two after eating their grain.

Never water or grain a horse that is much heated;—to do that is likely to "founder" and so ruin him.

Never give grain to a tired horse—let him rest for an hour or two first. Otherwise he is very likely to have indigestion and colic. More horses die from colic than from anything else.

Bring your horse into the stable or camp cool and breathing easily, if possible. Nothing is worse for a horse than chill after being heated. But if for any reason it is necessary to halt or encamp when your horse is sweating,—then blanket him and walk him about, or put him in a sheltered spot and rub him,—according to circumstances. A horse is cold when his ears are cold. Get in the habit of feeling his ears.

Use the currycomb very lightly, if at all. It is apt to hurt the skin of the horse. A stiff brush is better—and much more efficacious if his coat



## THE NEW DE LAVAL CREAM SEPARATOR

Will Give You  
Greater Capacity, Longer Wear,  
Better Service, Bigger Value

THE bowl of the New De Laval has greater capacity for a given size and a given speed than any other. The experience of thousands and thousands of users has proved that a De Laval will outlast and outwear any other make.

Look well to service when you buy a cream separator. That means more than anything else. That should include not only a good working and reliable machine, but the right sort of attention and interest on the part of the seller, not only at the time the machine is set up but as long as you continue to use it. De Laval service is well known. You can depend upon it.

Value depends upon the amount and quality of service the separator gives you—what you get out of it. You get more value for your money when you buy a De Laval, because it will give you more and better service than any other separator.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below

### DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.  
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

61 BEALE STREET, SAN FRANCISCO

## Stop Losing Calves

You can  
**Wipe Abortion Out**  
of your herd and  
**Keep it Out**

Write

Dr. David Roberts Veterinary Co.  
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### FREE

Booklet

**Questions and Answers**  
pertaining to  
**Abortion in Cows**

Answers every question. Tells how to treat your own cattle at small expense. Send for booklet now. A postal will do. State number of cattle you own.



Drastic Treatment

Burning machine experimenting with a method of destroying the weevil.

## Prize Winning HAMPSHIRE

The farmer who wants a hog that puts on 200 lbs. of firm meat at six and a half months of age buys the Hampshire.



Boars, gilts, bred and open, for sale from the P. P. I. E. Clamplon Hampshire stock, just as nearly perfect as they make them.

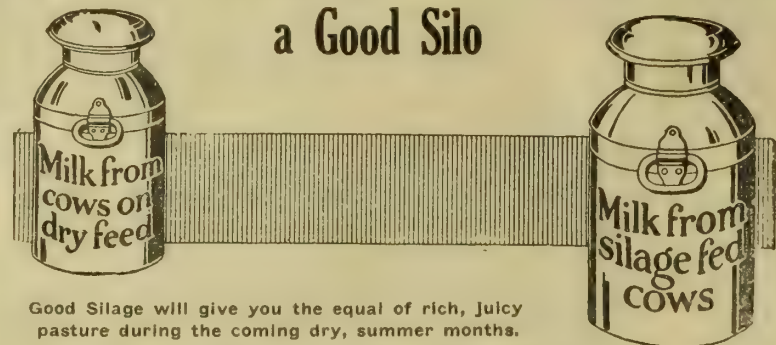
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## Don't Go Through Another Winter Without a Good Silo



Good Silage will give you the equal of rich, juicy pasture during the coming dry, summer months.

## Decide now to put up an IDEAL GREEN FEED SILO

THESE trying times when your milk flow is shrinking, the cost of feed high and green pasturage scarce, make you wish you had installed an Ideal Green Feed Silo last year.

But there's no use crying over lost milk. The profits you might have had this winter, with milk at present prices, if you had installed a silo, are gone beyond recall. It's too late now to remedy your oversight.

But that's all the more reason why you should make your plans right now to install a silo.

Before you know it the rush of spring and summer work will be on you again, and if you let the matter drag along you will probably come around to another winter and still not have a silo.

Your cows will give 25 per cent more milk on a silage ration than on dry feed with grain, and you can feed them much more cheaply on silage.

An Ideal Green Feed Silo will preserve your silage better than any other silo made, and will last longer. Thousands of Pacific Coast cow owners have proved this to their own satisfaction.

Send for description, telling us how many cows you want to feed and ask for our Dairy Hand Book with Rations for Dairy Cows.

**DE LAVAL DAIRY SUPPLY CO.**  
61 BEALE STREET, SAN FRANCISCO

# The Yearly Record

## The True Gauge of Production

Some 20 to 25 pound cows have produced 1000 to 1100 pounds butter in a year, others with 30 to 35 pounds have produced less than 800 pounds a year.

We have in mind a 27 pound cow that is soon to finish a year with nearly 1200 pounds. We also have in mind 38 and even 40 pound cows with yearly records under 1050 pounds.

Which is preferable as the dam of a herd sire?

What assurance has the purchaser of a bull from a 40 pound dam that she is a superior cow, unless it is backed up by a long distance record of equal merit?

Remember that a cow can not be expected to transmit the skill of her handler.

Remember also that we are in position to supply bulls backed by either short, or long records, or both.

Our herd contains several world long distance cows.

It contains eleven cows with yearly records above 1000 pounds, averaging almost 1100.

It contains two cows that have produced over 2300 pounds in two consecutive years, one of which has the world's record of 2426 pounds.

It contains the only cow of the breed that has produced over 1000 pounds for three consecutive years.

It contains thirteen cows over 30 pounds including the highest seven day cow ever tested on the Pacific Coast.

It contains five cows from 34.25 to 38, four of which are the highest ever made in California, and seven that average over 35 pounds.

It contains four of the seven state record seven day cows.

And better still it contains the only bull in the world whose first seven dams average over 1000 pounds in a year. They will average around 1080 and almost 31 pounds in seven days, including his dam's record at two and three years. These averages will surely be increased.

We will be pleased to quote high class bulls to either dairymen or breeders.

**Morris & Sons Corporation**  
WOODLAND, CAL.

SHORTHORNS

BERKSHIRES

## Hopland Stock Farm

Hopland Cal.

Registered Bulls—yearlings and two year olds. Bred on same lines as our Grand Champion cow at Sacramento, 1917.

Boars and Glits by Iowana Rival Majestic, a son of Rival's Champion.

Prices Reasonable on Application

San Francisco Office

226 Southern Pacific Bldg

is long. The head and legs should never be touched with the currycomb. You can clean your horse with a wisp of hay or straw vigorously used,—or even with your bare hands. At least an hour a day of hard work should be devoted to cleaning a horse. This helps the circulation, removes dead skin and dirt, and makes the horse feel right and look right.

Avoid sore backs and shoulders by keeping the inside of your saddle or

harness perfectly clean, and by sponging or clanning off the saddle or harness marks. The dandruff in the horse's hair is very salt, and when this dandruff dries on the horse or on his equipment, it irritates the skin.

On reaching camp or stable, do not remove the saddle, unless you can at once clean and dry the hair underneath. If that cannot be done immediately, loosen the girth and leave the saddle and blanket on until the hair is dry underneath.

## California's First Forty Pound Cow

Tilly Alcartra, the greatest long distance dairy cow the world has ever produced, is starting off her sixth consecutive year of test in a manner which wins new honors. In former

days. Tilly was nine years old on the second of last October, has dropped six living calves, and has been on yearly test continuously since her first freshening as a senior two year



Tilly Alcartra

The world's greatest long distance dairy producer, whose performance is chronicled by Mr. Hughes on this page.

years she has always made her best seven day record from 30 to 60 days after freshening, and there is no reason to doubt that she will do likewise this year, and the main fact right now is that she has exceeded all her previous records at this point in her lactation period. At this writing Tilly has been in milk less than 30 days and has to her credit for her best seven days the splendid record of 729.1 pounds milk and 40.57 pounds butter, best day's milk 111 pounds. Yesterday was her best day so far, so it is practically certain that she will still further increase her record for both milk and butter. Her best previous records, made at six years of age, are 783.70 pounds milk and 32.23 pounds butter in seven

old. She was the first cow in the world to make over 30,000 pounds milk in one year and at the present time holds all the world's records from two to five years. In her first and only five yearly tests she has produced a total of 123,351.3 pounds milk and 4819.12 pounds butter, a record unequalled by any other cow in the world of any age or breed. And after that unparalleled long distance production record she comes back at nine years of age in apparently the best physical condition of her career and proceeds to surpass her previous short time records. As an example of sustained high production and regular breeding habits Tilly stands without an equal in the history of dairy cattle breeding.

## State Dairy Competition

REPORT FOR 13TH MONTH OF COMPETITION

No.	Name of Cow	Age	Days in milk at start of record	Milk	Butterfat	Ave. Pct	Credit for Butterfat
1.	Alice, Gr. H.	5	15	20,099.4	729.186	3.63	729.186
2.	Alba Sadie Cornucopia Creetia, H.	7	4	17,627.5	632.136	3.58	632.136
3.	Hilde, Gr. H.	5	17	18,298.6	616.518	3.37	616.518
4.	Rhedon of Bloom, H.	2	4	14,074.3	582.976	4.14	757.869
5.	Imp. Acadia of Linwood, G.	4	2	8,570.7	531.383	6.20	573.894
6.	Blackie, Gr. J.	7	5	11,663.5	505.193	4.33	505.193
7.	Lula, Gr. J.	9	5	10,440.3	487.561	4.67	487.561
8.	No. 68, Gr. H.	4	11	17,369.0	487.299	2.81	526.283
9.	Elsie Argie Granger, G.	5	5	8,852.4	476.323	5.38	476.323
10.	Olga Fern Smith, J.	5	11	8,358.3	472.362	5.65	472.362
11.	Lorita of Venadera, J.	10	2	7,693.6	467.839	6.08	467.839
12.	Juanita of Venadera, J.	8	7	7,063.3	441.602	6.25	441.602
13.	Imp. Amy of Ore Hill, G.	4	2	8,094.7	437.887	5.41	472.918
14.	Imp. Governor of the Chene's Herald Queen, G.	4	2	9,286.8	431.545	4.65	466.069
15.	Guise Beauty, Gr. J.	5	9	7,643.4	430.016	5.63	430.016
16.	Nina, Gr. J.	7	5	7,640.2	405.276	5.30	405.276
17.	Victime of Iowa, G.	5	2	7,943.4	400.395	5.04	400.395
18.	Melia Olga Pogis, J.	2	11	7,943.4	400.395	5.04	400.395
19.	Imp. Hayes Sweet Marjoram, G.	3	10	6,622.4	382.319	5.77	474.076
20.	Jessie, Gr. J.	1	11	7,234.2	336.601	4.65	387.091
21.	Alba, Gr. J. (eight months)	1	15	9,358.3	325.736	3.48	423.457
Owners of Cows: 1, 3, Stenzel; 2, 4, A. M. Baldwin; 5, 13, 14, Welch; 6, 20, Beebe; 7, 16, Bomberger; 8, Napa State Hospital; 9, 17, 19, Elliot-Brant Rancho; 10, 18, Copini; 11, 12, Miller; 15, Guise; 21, Bohnett Bros.							

The following are the highest producing cows in herds where individuals produced over 40 pounds of butterfat during December, 1917.



Alba Sadie Cornucopia Creetia, Holstein, seven years, four months, 303 days in milk, 1293.5 pounds milk, 3.74 per cent fat, 48.377 pounds butter fat, owned by A. M. Baldwin.

Irene, Grade Jersey, six years, 231 days in milk, 942.4 pounds milk, 6.00 per cent fat, 56.544 pounds butter fat, owned by Floyd Beebe.

Leda De Kol Ormsby, Holstein, four years nine months, 218 days in milk, 1366.7 pounds milk, 3.24 per cent fat, 44.281 pounds butter fat, owned by A. M. Bibens.

Tillie, Grade Holstein, seven years, 194 days in milk, 1126.5 pounds milk, 3.84 per cent fat, 43.261 pounds butter fat, owned by Bohnett Bros.

Pansy, Grade Jersey, five years, 242 days in milk, 717.2 pounds milk 6.00

per cent fat, 43.020 pounds butter fat, owned by J. M. Bomberger.

Little Surprise, Grade Jersey, five years, 219 days in milk, 663.4 pounds milk, 6.2 per cent fat, 41.131 pounds butter fat, owned by J. W. Coppini.

Golden Idella of Belle Vista, Guernsey, three years four months, 188 days in milk, 677.1 pounds milk, 6.43 per cent fat, 43.538 pounds butter fat, owned by Dr. J. W. Henderson.

Roan Cow, Grade Guernsey, seven years, 256 days in milk, 1094.3 pounds milk, 6.66 per cent fat, 72.880 pounds butter fat, owned by Iver Iverson.

Margaret Aralia De Kol, Holstein, five years six months, 195 days in milk, 1721.6 pounds milk, 4.53 per cent fat, 77.988 pounds butter fat, owned by A. W. Morris & Sons Corporation.

N. S. H. Monte 1st, Grade Holstein, six years, 244 days in milk, 1684.1 pounds milk, 3.86 per cent fat, 65.006 pounds butter fat, owned by Napa State Hospital.

President's Doris of Lewison, Guernsey, seven years, 249 days in milk, 1041.6 pounds milk, 5.03 per cent fat, 52.392 pounds butter fat, owned by Palo Alto Stock Farm.

Alice, Grade Holstein, five years, 265 days in milk, 1426.8 pounds milk, 3.92 per cent fat, 55.931 pounds butter fat, owned by F. Stenzel.

Juanita, Grade Jersey, two years eight months, 213 days in milk, 592.1 pounds milk, 7.7 per cent fat, 45.592 pounds butter fat, owned by G. E. Trigg.

Piertertje Lorene Korndyke, Holstein, four years two months, 224 days in milk, 1244.6 pounds milk, 3.71 per cent fat, 46.175 pounds butter fat, owned by University Farm.

Fern's Sylvana, Jersey, eight years six months, 180 days in milk, 795.0 pounds milk, 6.20 per cent fat, 49.290 pounds butter fat, owned by F. H. Van Derpoel.

Imp. Alcia of Linwood, Guernsey, four years eight months, 275 days in milk, 728.6 pounds milk, 6.16 per cent fat, 44.882 pounds milk, owned by A. J. Welch.

#### BRINGING FEED AND FEEDERS TOGETHER

The California Cattlemen's Association is making a great effort to be patriotic and produce more, but the rainmakers all seem to be in league with the Central Powers. However as a step in the direction of producing more good red meat, they are endeavoring to bring the feed to the feeders. Hence the following resolution:

Whereas, the rainfall throughout California this season is far below normal, and, as a result the feed situation has in certain sections become quite acute, and, whereas, the condition could be greatly alleviated, either by the shipment of feed from sources well known to us to cattle which are suffering, or by the shipment of cattle to portions of this and neighboring states which have a surplus of feed, and, whereas, a reduction in rates by the railroad companies, now in the control of the federal administration, for the hauling of both feed and cattle would make practicable shipments and save many cattle, which otherwise might not survive, and, whereas, in the present crisis it is more than ever imperative that every effort be made to conserve the meat products of the country, and, whereas, the United States food administration is in a position to authoritatively suggest remedial measures, therefore, be it resolved that California Cattlemen's Association in meet-

Continued on Page 159



## Keep Cow Troubles in the Background

Your dairy can be healthy and profitable with but little care and expense on your part—if you just exercise the same "first aid" principles as you would use in your own family. Do not wait until a cow is non-productive; the intelligent use of Kow-Kure will prevent the diseases that sap her life and vigor.

Cows frequently need medical attention, and in most cases you can supply the need yourself with the aid of KOW-KURE—just as thousands of the best dairymen have been doing for over twenty-five years.

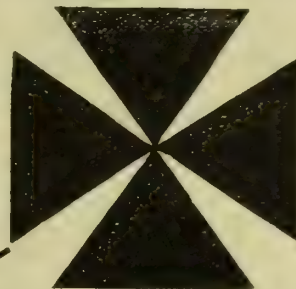
Kow-Kure has made many a poor milker profitable. Do you have a cow that is worth the expense of a package of Kow-Kure to prove for yourself what it will do? This well-known cow medicine has a positive action on the digestive and genital organs—a preventive of disease and a sure, quick remedy for such common cow ills as Abortion, Barrenness, Scouring, Lost Appetite and bunches. Used before and after calving, Kow-Kure is a sure preventive of milk fever and Retained Afterbirth.

Kow-Kure is sold by druggists and feed dealers; 55c and \$1.20 packages. Send for free treatise, "The Home Cow Doctor."

DAIRY ASSOCIATION CO., Lyndonville, Vermont

Santa Anita  
Rancho

Anoakia  
Breeding Farm



## REGISTERED HOLSTEINS

No greater conservation of feed, labor, and money can be made by the dairyman of today than by placing at the head of his herd the right kind of a herd sire.

A registered purebred Holstein bull of good breeding will get the kind of helpers that develop into profitable dairy cows, able to convert the feed they consume into profitable milk and butter production. The overhead expense, including labor, of handling a GOOD dairy cow is no greater than for a boarder, and the only way to breed GOOD cows is to use a GOOD purebred registered bull.

Right now we are offering a limited number of GOOD young bulls sired by

### MERCI LAD KORNDYKE BURKE

conceded to be one of the greatest individual Holstein bulls in the west, and as to his breeding—

He is sired by the noted individual and sire De Kol Hengerveld Burke, one of the greatest sons of De Kol 2nd's Butter Boy 3d, and his dam is that wonderful producer Winnie Korndyke Cornucopia De Kol, 31,034.14 pounds milk and 1201.06 pounds butter in one year, the first cow in California to produce over 1200 pounds butter in one year.

MERCI LAD KORNDYKE BURKE is siring a wonderful lot of calves. Come and see his beautiful sons and daughters and we feel sure you will decide to select one of his young sons to head your herd.

Inquiries or orders by mail will receive prompt attention.

SANTA ANITA RANCHO, Santa Anita, Cal.

W. H. Taylor, Supt.

Anita M. Baldwin, Owner

## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy

Perkins, Cal.

MAIN 1259

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## Rhoades & Rhoades

Expert Live Stock Auctioneers  
Pure Bred Stock Sales a Specialty

Sales conducted in all parts of California and Adjoining States. Twenty-five Years' Experience

BEN A. RHOADES, Auctioneer  
1501-3-5 So. Main St., Los Angeles, Cal

## Duroc-Jersey Hogs

AT

## IRELAND

Ranch at Owensmouth

City Office: 1219 Brockman Bldg., Los Angeles

Spring Boars by Orion Cherry King V (Reformer) For Sale

## AYRSHIRES

REGISTERED

Herd Sire, Dairy King of Arizona  
CHOICE BREEDING STOCK FOR SALE

A. MACMINN

Phoenix

Ariz.

## Saves Labor and Time Makes Work Easier

than when whitewash and other disinfectants are used in poultry houses, stables, dairies, piggeries, cellars, etc.

**CARBOLA**  
The Disinfecting White Paint

is used by many of the largest and most carefully conducted poultry, dairy and breeding farms, with the results indicated by the following letter:

#### COLT FARM

Papoosequaw, Bristol, R. I.  
"We are using Carbola in all of our wooden buildings and on cement walls and find it gives excellent results. The mites and insects seem to leave the building when Carbola is used. We find that it not only brightens up but also disinfects our buildings with one operation."

FRANK A. CHABB, M.D.  
Carbola comes in powder form and one pound and a gallon of water disinfects 250 square feet. Apply with brush or sprayer to wood, brick, stone or cement, or over whitewash. No disagreeable odor. Will not blister, flake or peel off. Dries a clear snow white. Not poisonous or caustic.

20 lbs. (20 gals.) . . . \$2.00  
50 lbs. (50 gals.) . . . \$4.00  
300 lbs. Barrel . . . \$21.00

Order today from your dealer or  
**Germain Seed & Plant Co.**  
Los Angeles, California

# TAGUS

## Holstein Friesians

(Officially Tested)

We offer for quick sale a mature registered bull for \$250 to first applicant.

Prices on application for breeding stock. Visitors invited to visit Tagus, just four miles north of Tulare.

(Dairy Dept.)

**Pacific States Corp.**

Tulare, Cal.

H. C. MERRITT, Jr., Manager

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco  
Carruthers Farms, Mayfield, Cal.


## ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.


Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the Lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. \$2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse Book 2R Free.

W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.






**PURE BRED**



**REGISTERED HOLSTEINS**



**Producing**

We herewith present the picture of  
**Sir Aaggie De Kol Acme 185724**  
**The Third of Our Famous Sires**

who is no less than the son of Aaggie Acme of Riverside 2nd, who recently finished her year with 1331.41 pounds butter, breaking the official world's record for butter production. Just think! **THE WORLD'S RECORD.** His sire is Aralia De Kol Pontiac Segis, son of Aralia De Kol, 1142.32 pounds butter in one year and the first cow in the world to make over 28,000 pounds milk in one year.

Summing up the three nearest dams of Sir Aaggie De Kol Acme we find their average records to be

Butter seven days	31.29 pounds
Milk seven days	642.60 pounds
Butter one year	1094.21 pounds
Milk one year	22,601.70 pounds


Wouldn't a good bull calf from such a sire be a real benefit to your herd and a money maker for you personally? Think it over. Don't go along in the same old rut, but improve your condition while a reasonable opportunity is at hand.

Below  
**Jane Korndyke of Riverside**  
 We will tell you about her next time.


**JANE GARDEN FARM**  
 SACRAMENTO — CALIF.

FRED W. KIESEL  
PROP'R.


C.W. YOUNG  
SUPT.



**Individuality**



**Everything**



**Guaranteed**

## We Offer:

### A Son of a 27.91 Pound 3 Year Old That Milked 98.6 Pounds in One Day

He is sired by **FINDERNE SOLDENE VALDESSA** who is being bred to our entire herd of carefully selected females, including five cows with records from 30 to over 33 pounds butter in seven days.

**FINDERNE SOLDENE VALDESSA** is by King Valdessa, son of the great producing and transmitting cow Valdessa Scott 2nd, 41.83 pounds butter in seven days, 164.29 pounds in 30 days, both world's records when made, and she is the dam of five A. R. O. daughters with records up to over 33 pounds butter in seven days.



Finderne Soldene Valdessa

The dam of **FINDERNE SOLDENE VALDESSA** is the world's record heifer Finderne Soldene Hengerveld, 35.34 pounds butter in seven days at first calving, and she is by the wonderful sire King Hengerveld Aaggie Payne who has three junior three year old daughters with records from 31.94 to 37.33 pounds butter in seven days, and four senior three year old daughters with records from 35.33 to 37.13 pounds butter in seven days. One of his daughters holds the world's record in the junior two year old class for yearly production with a record of 1200.64 pounds butter, another holds the world's record in the junior three year old class with a production of 1395.06 pounds butter in one year, and a third daughter made 1075.29 pounds butter in one year as a junior three year old.

**THE YOUNG BULL WE OFFER WAS BORN NOVEMBER 26, 1917. HE IS A NICE STRAIGHT CALF, AND HIS DAM AND SIRE'S DAM AVERAGE 31.62 POUNDS BUTTER IN SEVEN DAYS, BOTH RECORDS MADE AS THREE YEAR OLDS. HE WILL SELL QUICKLY AT THE PRICE WE HAVE PLACED ON HIM.**

## Toyon Farm Association

Office: First National Bank Bldg.  
San Jose, Cal.

Farm: Los Altos, Cal.

## Field Notes from the Live Stock Men

Alexander & Kellogg of Innisfail Ranch on Grisly Island report the following list of cows in their herd that have made the Record of Merit of the Shorthorn breed under official test for 1917: Eva, a three year old record of 6,910.2 pounds milk, 255.7 pounds butter fat in 309 days; four year old record of 9,604.2 pounds milk, 341.3 pounds butter fat in 295 days. Princess Clay, a three year old record of 7,609.9 pounds milk, 267.10 pounds butter fat in 322 days. Lady Starlight, a four year old record of 8,039.1 pounds milk, 332.17 pounds butter fat in 305 days. Buttercup, a three year old record of 7,039.1 pounds milk, 267.34 pounds butter fat in 297 days. Glenside Belle, a four year old record of 7,691.8 pounds milk, 315.19 pounds butter fat in 297 days. Flower Girl 2d, a three year old record of 9,059.2 pounds milk, 343.2 pounds butter fat in 330 days. Bellvue Daisy, a six year old record of 8,480.1 pounds milk, 322 pounds butter fat in 358 days. She nursed her calf a month before beginning test. Greenhill Caroline, a two year old record of 6,220.9 pounds milk, 242.4 pounds butter fat in 277 days. She is now producing with second calf 50 pounds a day. Six imported cows with records made in England as follows: Welfare 11th, 6,880 pounds milk with first calf; Gipsy's Maid, 7,287 pounds with first calf; Royal Rose 4th, 9,655.5 pounds; Lady Beatrice, 8,538 pounds; Favorite 4th, 8,360 pounds; Countess of Heggle 3d, 9,952 pounds. The owners write: "We are getting some splendid calves sired by our imported bull Kelmscott Viscount 19th. A young bull out of Greenhill Caroline, sired by him, weighed at one month and nine days 160 pounds. We are fortunate in having plenty of feed for our cattle and all are doing well. We have five cows on official test now and expect to have more in the near future."

Jane Garden Farm, owned by Fred W. Kiesel, Sacramento, is finding ready sale for the splendidly bred young registered Holstein bulls produced in the herd. One buyer recently took four of them in one lot, all that were on hand near service age, and several other buyers have recently found bull calves to suit them.

Miss Valley Mead De Kol Walker still continues her record breaking performance in the herd of A. W. Morris & Sons Corporation, Woodland. Not content with her record of 24.70 pounds butter in seven days, eight months after calving as a junior three year old, which exceeded the previous world's record by over two pounds, she has gone ahead and increased her record to 25.25 pounds butter, thus establishing a new California record.

The former record was held by Aralia De Kol at an even 25 pounds and has stood for several years.

Aralia De Kol Mead, daughter of King Mead of Riverside and Aralia De Kol, is now the California record holder in the seven day division of tests begun eight months or more after calving. She has been on strictly official yearly test for more than nine months in the A. W. Morris & Sons herd, and in seven days she recently made 25.51 pounds butter, thus exceeding the record made by Miss Valley Mead De Kol Walker only a few days previously. Both of these are still on official test and as both of them still appear to have something in reserve it is a nip and tuck race to see which one will first reach her limit in this test.

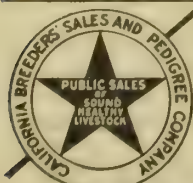
The Hollister herd of registered Holsteins, owned by The Lewis Company, is rapidly rounding out, the latest acquisition being several fine daughters of the proven bull Sir Skylark Ormsby Hengerveld, and three daughters of Dora Thorn Sir Josephine, including the 28.43 pound cow Oristeria Overton Mechthilde 3d and her beautiful heifer calf by a son of King of the Pontiacs. The owners of this herd are selling their dairy product to the Alpine Condensary at Hollister. The herd will be gradually enlarged and the farm of several hundred acres improved. The idea however, is to have the breeding establishment strictly on a commercial basis, and there will be a price on every cow, heifer, or bull on the place. Many of the females in the herd already have large official records and testing will be continued.

Mysie's Lady of Claremont, a registered Guernsey heifer owned by L. D. Smith, Berkeley, recently completed an official yearly record that is in many respects a remarkable one. At four months of age she went out on the Berkeley hills to shift for herself, and stayed there until within a short time of her calving at the age of two years and one day. During her year's test she rustled for her roughage in the dry hill pastures, and was fed a very limited supplementary ration of ground alfalfa, cocoanut meal, ground barley, and middlings, with no succulent feed. She carried twin calves 280 days of her test, dropping them 17 days short of a year on test, and she finished with the nice record of 9574.1 pounds milk and 494.88 pounds butter fat, equal to 582.21 pounds butter 85 per cent fat, and thus giving her third place in Class GG of the Guernsey Advanced Registry.

Pontiac Korndyke is now in the list of sires of 40 pound daughters, through the recent record of his six year old daughter Fairview Korndyke



A Prize Winner  
A fine sow on the ranch of F. A. Brush



## "The Best Managed Sale I Ever Attended"

is what a prominent breeder from out of the state remarked after the Guaranty Sale at Sacramento.

We give to every sale, big or small, the same efficient service that won the approval of the breeder above quoted, a service backed by an equipment and organization that has already brought about a new order of things in public sales of registered livestock in California.

If you want to sell your whole herd or consign high class animals to a consignment sale, let us go over the matter with you.

**California Breeders Sales and Pedigree Co.,** J. M. HENDERSON, Jr., Pres., C. L. HUGHES, Sales Mgr.  
211-212 Ochsner Bldg., Sacramento, Cal.

When writing advertisers, mention The Cultivator.



## CATTLEMEN!

Your cattle brand must be registered with the Cattle Protection Board before February 20, 1918.

Applications received after that date will be given only secondary consideration.

Persons using unrecorded irons will be liable to arrest.

### State Cattle Protection Board

Underwood Building  
San Francisco, Cal.

### Dutchland Sir Pietertje Creamelle

now has 14 A. R. O. daughters, his first three year old making over 30 pounds butter in seven days.

ALL OF HIS DAUGHTERS ARE NORMAL HIGH TESTERS, A CHARACTERISTIC WHICH HE SEEMS TO HAVE TRANSMITTED IN A MOST UNIFORM MANNER.

If you want to breed higher butter fat test into your dairy herd get one of his sons or a son of one of his daughters. We have a few out of good record dams for sale at moderate prices, two of them just reaching service age.

**F. STENZEL**

San Lorenzo California

### Holstein Friesians

Herd of over 200 head to select from headed by King Mead Acme, whose dam, Sadie De Kol Acme, made 885 pounds butter in one year. We breed for high production and high testers.

Will sell bulls that give satisfaction to the buyer and at reasonable prices.

**Frank Helm**

Fresno - - California

### HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

#### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

**Whittier State School**

WHITTIER, CALIFORNIA

### HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

**Frank Reed Sanders, Mesa, Ariz.**

**SANDYACRE FARM, Home of**

**Marsh's Big Type Poland-China Hogs**

"MODEL MAJOR" winner of three firsts and two Grand Championships is at the head of my herd of prize winning sows. My sows are the easy feeding, big litter kind that have quality. Now booking orders for June delivery of spring pigs. Satisfaction guaranteed or money refunded.

**H. I. MARSH, Modesto, Cal.**

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Meta who made 776.2 pounds milk and 46.71 pounds butter in seven days. This is the fourth highest seven day record to date in Holstein official records, and she is the twenty-third Holstein cow to make an official record above 40 pounds butter in seven days.

Dairymen in California are becoming more and more discriminating in the purchase of registered bulls to head their grade herds and it is not infrequent that a dairyman insists upon a class of sire that in former times would be considered only by a breeder of registered cattle. Thus we find two instances lately that show the trend of the times. A. W. Morris & Sons Corporation, Woodland, recently sold a young bull backed up by very high yearly records to a Portuguese dairyman for \$1000 and another to a neighbor of this same dairyman for \$500. At about the same time Henderson Company of Sacramento sold a young son of their most richly bred heifer to Moreing Bros. of Stockton for \$1000 and another well bred young fellow to the same people for \$500, both of these bulls going into a grade herd.

There is living in San Jose, at the present time a man who has the distinction of having been a pioneer in the introduction of registered cattle into the great Holstein state of Iowa. Charles Brenner is a booster for the breed in the most genuine sense. A man of attractive personality, it needs but a few moments of conversation to show that he has been a real success in the farming business. In Mr. Brenner's own words: "When I bought my first registered Holstein bull calf and paid \$200 for him my Norwegian neighbors in Iowa thought I was crazy. The next year they were falling over themselves to buy grade bull calves from this sire at \$75 each. It was the best investment I ever made in my life." Mr. Brenner is now retired and living on the fruits of his efforts which he has no hesitancy in saying were greatly increased through the Black and White breed. Realizing that he had an abundance stored up for the future he rented his prosperous Iowa farms and has come to California to make his home.

Things have begun to move in the high class herd of registered Holsteins recently established by J. T. Shanahan at East Aurora, New York. It will be remembered that after purchasing a considerable number of the very top females in the most select Eastern sales, Mr. Shanahan bought the six months old bull calf Majestic Rag Apple in the Dairymen's Convention Sale at Syracuse last December for \$35,000. He also selected as the man to develop the great foundation he had secured, Walter A. Salisbury who had made a very substantial success as superintendent of Brothertown Farms at Utica, New York. The first indication so far from the new establishment comes in the form of announcement of a 40 pound record. The maker is the junior four year old heifer Verona De Kol Beets and she has to her credit 720.9 pounds milk and 40.08 pounds butter in seven days, making her the twenty-fourth Holstein cow with an official record above 40 pounds butter in seven days.

Ed M. Walker who has a splendid herd of registered Holsteins in San Diego County writes that he has recently sold a number of good heifer calves at satisfactory prices and also recently sold five young bulls to go to Phoenix, Arizona. Mr. Walker has an excellent herd of cows headed by two exceptionally well bred bulls.

## King of the Black and Whites 83354

### The Greatest Producing Sire in California

Now has 30 A. R. O. daughters, a greater number than any other sire in California, and more coming right along.

He was the first bull in the world whose seven nearest dams averaged over 30 pounds butter in seven days, and this is only one instance of the remarkable uniformity of the great production records in his pedigree both for milk and butter.

He is transmitting his wonderful inheritance of large milk and butter production because there are no weak spots in his breeding for generations back, no throwing back to a low producing ancestor, and by every law of animal breeding his daughters, as they are already proving, will be uniformly great producers and his sons will hand down his good quality to their offspring.

### King of the Black and Whites

is being given a full opportunity in our herd where he is being mated with a large number of high record cows and highly bred heifers. We have none of his offspring to offer at present, but if you want to keep your herd in line with the march of production records it will interest you to visit our herd and get acquainted with these matings.

We have a limited number of grandsons of King of the Black and Whites and King of the Pontiacs for sale at moderate prices and terms.

We offer for sale some well bred heifers and cows, some of them in calf to King of the Black and Whites. Write us if you need one or a number.

### HENDERSON COMPANY

Sacramento Bank Bldg. Sacramento, Cal.

### KING KORNDYKE PONTIAC 20th



is not made great because we paid \$6500 for him at public sale, rather, our firm belief that he is one of the greatest young bulls of the breed today determined us to buy him at any reasonable figure and we consider the price at which we bought him reasonable.

Keep your eye on KING KORNDYKE PONTIAC 20TH in our herd. Visit our farm when convenient and see for yourself the quality of the females with which he is being mated and you will surely find something later on from these matings that will fit in with your own breeding plans.

And have you noticed how wonderfully Miss Valley Mead De Kol Walker, dam of KING KORNDYKE PONTIAC 20TH, is performing? Her

latest figures for butter in seven days eight months after calving are 25.25 pounds, thus exceeding the state record held for several years by the former world's record milk cow, Aralia De Kol, and she still seems to have still further increase in reserve.

RIGHT NOW we offer several young sons of our senior herd sire

#### PRINCE RIVERSIDE WALKER

son of Prince Gelsche Walker and Aaggie Acme of Riverside, also a few youngsters by other high class sires and out of highly bred dams with good records.

We especially invite the inquiry of owners of good dairy herds. We feel sure that we can suit you in breeding, individuality, and price, in the bull you require to head your herd.

OUR ENTIRE HERD IS TUBERCULIN TESTED

### Tulare Holstein Farm

W. J. HIGDON, Owner

Tulare, California

## Think Again!

And you will find it to be good business to not only see that your next herd sire is backed by great yearly record breeding, but that he is a grandson of that greatest of all long distance cows, Tilly Alcartra, who has produced a total of 123,351.3 pounds milk and 4519.12 pounds butter in five consecutive years under semi-official test and now comes back with a record of over 36 pounds butter in seven days at her sixth freshening. Her son

### Prince Alcartra Korndyke

heads our herd, and he is sired by that sterling sire Korndyke Queen De Kol's Prince. He is already a proven sire, for his first five two year old daughters to finish yearly test average 15,333 pounds milk and 675.92 pounds butter, placing him among the leading young yearly sires of the breed.



We offer a few of his young sons out of well bred dams with good records, at moderate prices.

The J. S. GIBSON CO.

Williams, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.



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### TREES

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Eureka Walnuts are the Best**—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alhambra St., Alhambra, Cal.

**Here is Your Opportunity to Secure A-I citrus trees.** We offer several thousand 2-year-old lemons: Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Inland, Cal.

**For Sale**—Fancy and standard varieties of Grafted Walnuts and Pecans. Largest variety of Walnut grafting wood in U. S. We are the oldest and most extensive propagators of walnut varieties in the U. S. Prices reasonable. Tribble Brothers, Lodi, Cal.

**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References: R. R. Morris, East Whittier, Cal.

**Placencia Perfection Walnut Trees** on black root. Still have a limited supply of first class stock. Scions used in grafting taken from trees showing a high record for crop and quality after seven years of careful selection. Hugh T. Thomson, Orange, Cal. Phone 502R1.

**For Sale: Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencia and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110, Los Angeles.

**Walnut and Almond Trees**—Mayette, Franquette, Concord, and Willson Wonder on Northern California Black root. Texas prolific and Drake seedling almonds on almond root. Stock is first class, cannot be better. Write for prices. Ekstein Nurseries, Modesto, Cal.

**For Sale**—5000 Royal Hybrid and Black Walnut trees, two and three years old, ½ to 1½ inch caliper, 3 to 8 ft. Also Grafted Eureka and Eureka grafting wood. John Miller, R. F. D. 4, Box 278, Lodi, Cal.

**Pear Trees**—Offer several thousand Bartlett, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton Ore.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell** is through classified advertisements in California Cultivator. The cost is only 8 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**For Sale**—1000 each Mission and Manzanillo olives ½ to 1½ in. caliper, strong vigorous, clean trees, 20c each, in nursery. Roy R. Mathews, Buena Park, Cal.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574. Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**My Olive Trees** are selected for bearing qualities, also avocados, feijoas, citrus and deciduous trees. Bishop's Nursery, Highland.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. T. T. Schwacofer, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**For Sale**—3500 Valencia, 2500 Eureka Lemons. Young trees. Select fruit buds. Reasonable prices. H. Clements, Glendora.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, La Brea Park Cal.

**Walnut Trees**—Placencia Perfection, selected grafts guaranteed stock. Wm. Pollard, South Pasadena, Cal.

**Fig Trees**—Thrifty, large Calmyrnas and Capris. Correspondence invited. C. A. Nelson, Exeter, Cal.

**apricots, Olives, English Morello Cherries and Arizona Ash.** First class trees. C. E. Moyer, Hemet, Cal.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsuragi, 23rd St., Upland, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### TREES

**Fine Lemon and Valencia Trees** at a very low price. Several have taken advantage of our special offer on this excellent stock and we suggest that if you desire any of them you should communicate with us at once. Trees are straight and clean with fine healthy foliage—are growing in sandy loam and give exceptionally good promises for producing fine groves. As we intend to dispose of our entire nursery this year this is a splendid opportunity to buy some A-1 stock at a reasonably low price, considering the quality. Future profits depend on the selection of the right trees. Phone or write us at once and we will arrange to take you to our nursery near Whittier to see these trees. Los Angeles Ice and Cold Storage Co., P. O. Box 643, Station C, Los Angeles, Cal. Main 8191; 10053.

**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**For Sale or Exchange**—5000 Eureka lemon trees selected buds inspected stock now located Riverside County. Submit best cash offer or advise fully what you have have for exchange. Chas. S. Brown, 1318 Santa Fe Ave., Los Angeles, Telephone A-9260, Main 7164.

**Mission and Manzanillo Olive trees**, all sizes and prices sure to satisfy. Write us at once for any amount. We want to sell. Imperial Valley Nursery & Seed House, El Centro, Cal.

**Pistache Scions** best imported varieties from bearing trees. Our pistache orchard largest in United States. Pecan scions finest varieties. Tribble Bros., Elk Grove, Cal.

**For Sale**—Eureka Walnut grafting wood. R. M. Fav. R. D. 4, Anaheim, Cal.

### SEEDS AND PLANTS

**Alfalfa Planters. Read This Pamphlet.** "Important Facts About Alfalfa Seed." Write for it before purchasing your seed. There are many kinds of alfalfa seed. For best results you should plant the one best suited to your conditions. Write today, describing your soil and moisture conditions and receive free pamphlet, samples and prices. Desk B, Bomberger Seed Co., Modesto, Cal.

**•• ORDER YOUR SEEDS NOW ••**  
 If you are going to need any seed for next season now is the time to render your order. It may be impossible for you to buy what you need later. V. A. Peterson Alfalfa Seed Co., Arbutus, Cal.

**•• ALFALFA SEED OUR SPECIALTY ••**  
**Alfalfa Seed**—Common variety, hairy and smooth Peruvian. Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

**Rhubarb Plants**—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00. Wagner's Giant Crimson Winter \$3.00. 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Rhubarb**—\$127.00 from one acre. A crop every month of the year. Write to me and I will tell you how you can do as well. J. M. Stone, Lodi, Cal. Route 4.

**Mitchells Everbearing strawberry** our specialty. \$1.00 per 100 plants, \$5.00 per 1000 plants. Primma Vista Gardens, Arlington.

**Soudan Grass Seed**—California grown and pure. For prices write undersigned and state quantity wanted. George Boock, Los Molinos, Cal.

**5000 Yellow Calla Bulbs**—Ellottiana. 5000 Asparagus roots. William Richard, Santa Cruz, Cal.

**R-O-S-E'S** 50 cents per dozen. Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

**New Crop Alfalfa Seed** now ready. Not the lowest in price, but high in quality. Geo. Turner, Yuma, Arizona.

**New Hybrid Alfalfa** everlastingly grows thicker (not thinner) with age. Write investigate. J. L. Lawson, San Jose.

**Strawberry Plants**—Everbearing Northern grown, strongly rooted. Price list free. F. I. Moffett, Ellensburg, Wash.

### MISCELLANEOUS

**Famous Hairy Peruvian Alfalfa Seed**—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

**Daily Demonstration of Distillate Vapor** Machine exterminating squirrels, gophers. Price \$20. U. S. Patents for sale at 643 S. Los Angeles St., Los Angeles, Cal.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**For Sale**—Bungalow, five rooms, two screen porches, pleasantly situated, Pomona City. Home for retired farmer. Address M. Everham, 725 Laurel Ave., Pomona, Cal.

**Quality Trees**, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

### WANTED

**Wanted**—Any kind of green grazing feed for sheep. Will pay 50 cents per head per month for good green feed. This is an opportunity for any good sized walnut, lemon, or orange grove owners who have cover crop in orchard. Sheep will be under herd so will not damage trees. Also can use dry feed if have plenty of water. Advise location and number of acres. Address Maurer Cattle Company, 912 Citizens National Bank Bldg., Los Angeles, Cal.

**Wanted**—Place as foreman. Advertiser is thorough in all lines of farming, irrigation, fruit growing and the care of livestock. Experienced in working all kinds of labor both tenant and wage system. Address Box P, Cultivator.

**Wanted**—Pure bred Toggenburg does, bred to pure bred Toggenburg buck. Must be registered with A. M. G. R. A. of Dayton, Ohio. J. C. Chadbourne, Suisun, Cal.

**Wanted to Buy cattle**, 70 head two year old steers preferred but will take good grade of stock cattle Durham. P. Herlick, P. O. Judson, Cal.

**Wanted**—A First Class dairyman and wife. Wife to keep house, \$75.00 per month to begin. Address, N. W. Tausig, Wasco, Cal.

**Wanted**—Apple pruner for orchard of 800 trees, full bearing. Unpruned for 2 years. Mrs. Kinevan, Dromard Ranch, Santa Barbara.

### FOR EXCHANGE

**For Exchange**—1000 acres, most of it well timbered with expensive woods. Republic of Panama, four miles from Atlantic Coast, for farm or stock ranch in Central or Northern California. E. B. Goodrich, 337 S. Hill St., Los Angeles.

### POULTRY

**Why My Chicks live and grow in the hands of my customers.** They are all hatched from fully matured stock on free range; bred right, mated right, fed right. I have the most up-to-date hatchery building in the country—five thousand feet of floor space. Built of brick with dead air space in wall giving a uniform heat that means strong, healthy chicks. No spoiled chicks from over heating. We use eggs from Hogenized stock only. We guarantee safe delivery and full count. Write for prices. Lasher's Hatchery, Petaluma, Cal.

**White Leghorn baby chicks.** We are hatching eggs from the best laying hens in Southern California mated to cocks from Humboldt County from the best laying flock in Northern California. We have had 12 years experience hatching and can promise you fine chicks, strong and hardy, easy to raise as good as the best at less money. We know a satisfied customer comes back. We would like to please you. Lyon Hatchery, Gardena, Cal.

**Baby Chicks**, Ancona, Rhode Island Reds, \$14.00 per 100, Barred Rocks, \$15.00. Quality White and Brown Leghorns, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. Agent for Poultrymen's Co-Operative Association. Incubators and Brooders. Send for catalogue. D. E. Doke, 743 So. Los Angeles St., Los Angeles.

**For Sale**—Pure Strains baby chicks from selected flocks, White Leghorns, R. I. Reds and Barred Rocks; hatches every week, order filled in rotation and shipped anywhere. Also Buckeye and Jubilee Incubators and Brooders. Stiles Poultry Supply Co., 645 G Street, San Diego.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Poultry Wanted**—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co. 607 E. Third St., Los Angeles, Cal.

**Huddleston Blue Andalusians**, great winning and laying strain, Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**Petaluma Hatchery**—Can ship day old chicks to points reached in three days. Why not have the best. We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

**Carneau Squabs**—Be independent and have your own squab dinners. Help Uncle Sam by producing more food. Raise big fat juicy squabs. Full information from Riverside Squabry, Riverside, Cal.

**Am Booking Orders for chicks from Barred Rocks, R. I. Red and White Leghorn stock for spring delivery.** Send for circular. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain) Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Baby Chicks (White Leghorns)** shipped on approval before remitting. No weak ones charged for. Scheilville Hatchery, Scheilville, Cal.

**Baby Chicks from Forney's famous heavy laying strain of Single Comb White Leghorns.** \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorcas, and Buff Orpington chicks with the Stevenson Hatchery, Watsonville, Cal.**

**Baby Chicks**—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

**White Wyandotte Eggs** for hatching. \$1.50 per 15; \$6.00 per 100. Flora Cox, Buena Park, Cal.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynier, Lathrop.

**Buff Leghorn Eggs** \$1.50 per 15; \$9 per 100. Mrs. H. W. McClure, Glendale, Ariz.

### POULTRY

**Order Now**, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh cut bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

**Big Profit Now Raising Our 200-290 Egg Leghorns**, Minorcas, Anconas, Rocks, Reds, Wyandottes, Orpingtons, Brahmas, Ducks. Thousands chicks, eggs, weekly. Reduced February. Laying pullets, hens. MALES HALF PRICE. Many repeat orders. Hundreds customers making money. One cleared \$305 on 48 hens, another \$617 on 110 last year. C. Beeson, Pasadena, Cal.

**Baby Chicks and Eggs**—Hogenized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks from my thoroughbred and carefully selected flock of S. C. White Leghorns.** Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Hatching Eggs Wanted for spot cash.** Barred Rocks, Buff Orpingtons, White Wyandottes, White Minorcas, Brown Leghorns, Anconas, Bronze Turkeys, Pekin Ducks, will accept all suitable eggs of above varieties each week. Advise how many you can supply and details of your stock in first letter. F. Lehman, 813 S. Los Angeles St., Los Angeles, Cal.

**For Sale**—Wyckoff & Son White Leghorn cockerels for sale \$3.00 and up, 3 Ancona cockerels \$3.00 and up. A few Wyckoff pullets \$2.00 and \$3.00. Eggs for setting from the following strain: Scramton R. I. Reds, Wyckoff & Son, Ancona strain Sheppard, 1 Buff Orpington cock won at local fair first. R. Keyland, East Bakersfield, Cal., Box 47, 431 Quincy St.

**Model Poultry Farm, White Leghorn Specialists**, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Baby Chicks**—All good strong youngsters. Hatches every week. White, Brown and Buff Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Baby "Chicks" and Eggs for Hatching** from pure-bred McFarland strain S. C. White Leghorns. Carefully culled and Hogenized for heavy egg production, not simply "CHICKS" but stock as well. Sonoma Valley Hatchery & Poultry Yards, Sonoma, Sonoma Co., Cal., R. D. 2, Box 48, E. J. Hansen, Prop.

**Spring Chicks**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

**Eggs for Hatching from R. I. Reds**, Barred Rocks, Anconas, White Minorcas and White Leghorns. Baby chicks after February 1. No better all-around stock. Live and let live prices. Hollway's Poultry Yards, 1435 Sycamore Ave., Glendale, Cal. Phone 682-M.

**East Side Poultry Yards** will hatch little White Leghorns from two and three year old stock. Quality and price will suit. The party that rears chicks this year is wise. E. J. Look, 255 S. 18th St., San Jose, Cal.

**For Sale**—Buff Orpington and Buff Leghorn cockerels and cock birds. Two fine matings of Buff Orpingtons. Eggs for hatching from excellent matings. Limited number of Buff Leghorn baby chicks. W. L. Bartholomew, Chino, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogen system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

**Hatching Eggs**—S. C. White Leghorns. Bred-to-lay hogenized birds from Pipe Tree Strain. Fertility guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns**, "Quackless" White Muscovy dux, White Embden goslings, stock, eggs and babies. Stamp for prices. White Star Hatchery, Kerman, Cal.

**For Sale**—200 Egg Breeding Cockerels, vigorous White Leghorns of the high egg producing type, \$3.50 or 3 for \$10. Only a few left. R. C. Gibson, Newhall, Cal.

**10,000 R. I. Red Baby Chicks Per Month**, first class stock \$12.50 per 100, 500 for \$60. We do not ship less than 100. Order early. Can ship every Monday. A. G. Rowe, Inglewood, Cal.

**Winter Laying S. C. Reds**, linebred from New York, Los Angeles and laying contest winners. Choice cockerels \$5 and \$10. Eggs \$3. W. M. Marquam, Bishop, Cal.

**"Eastman's Bred-to-Lay" Hogenized, Trapped, Barred Plymouth Rocks.** Spring Chicks, Eggs. Fairmead Poultry Farm, Fairmead, Cal.

**Buff Orpingtons, Buff Ducks, Bourbon Red Turkeys.** Hatching eggs; baby stock; mating list. The Ferris Ranch, S. Reservoir, Pomona, Cal.

**Trapped White Leghorns**—Ours were the only California 200 egg layers in 1917. All Northwest Egg Laying Contest. Hudson Poultry Farm, Escondido, Cal.

**For Sale**—A few choice White Orpington cockerels. N. H. Vogt, Vacaville, Cal.



HOGS

**The Billiken Brand of Chester Whites**—There is right now a big shortage of swine in California. The output of 1918 will show even a greater shortage unless the farmers of this state get busy and raise more hogs. Good breeding stock is scarce and hard to get. **THE BILLIKEN BRAND** represents the best obtainable; they are of that mellow type that mature early and are such satisfactory easy feeders. Get started with this strain and help out the Food Administration and your own pocket as well. Write me your wants—do it today. I can still furnish first class animals at reasonable prices. C. B. Cunningham, Mills, Cal.

**Grape Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more boars left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 27th, and a few bred glits. Our herd won the Premier Breeder's Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massave Orange. Watch for the sensational offering of sows bred to this great trio which sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal. W. Bernstein, Proprietor.

**Large Type Poland-Chinas**—The hog for the farmer if he wants to make money. I have the best lot of weanlings that I have ever seen and they are sired by my boar, Long Smooth Jumbo, and if he keeps on growing the way he is, his name will soon be too small. H. Christiansen, R. D. 4, Riverside, Cal.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Duroc-Jerseys**—Sold out of bred glits. Two service boars. One of them an outstanding individual for sale. Also Fall Pigs, both sexes. Twenty-three ribbons on 11 entries, including 6 championships, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open glits sired by Ames Rival 15, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Colton, Cal.

**PLW Durocs**—Eastern selections made by R. K. Walker in January. Peters, Lamson & Walker, Devore, San Bernardino County.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb Ceres, Cal.

**Should Like to Dispose of 1000 hogs**, or hog feeders, weigh 75 to 150 lbs. Address E. F. Sanguinetti, Yuma, Arizona.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Shasta County, Cal.

**Berkshires**—Sired by Star Leader, the \$1,500 boar, ready for service. Kounias Registered Stock Farms, Modesto

**Durocs—P. & L's Defender** by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

FARM LANDS FOR SALE

**For Sale**—80 or 120 acres in Northern San Diego County. New land, new buildings, best soil, running water, plenty timber, fine for fruit, hogs, etc. A bargain. Address owner, Chas. Meinzer, Fallbrook, Cal.

**For Sale**—160 acres \$3500. Make excellent hog, dairy, alfalfa, fruit, nut ranch. 60 acres level bottom, abundance water, \$2000 down, no traders. Fine climate, plenty rain. Owner Carl Dewlaney, Santa Margarita, San Luis Obispo Co.

**For Sale**—160 acres fully equipped dairy, 100 acres alfalfa, cow barn, horse barn, good dwelling, 40 cows, take small home in part payment. No agents. Enquire E. F. Slegfried, Orange.

**Arizona**—A few sections of Arizona school lands for sale on long time and easy terms. Cheaper than homesteading. Water conditions good. Particulars T. C. Davison, Box 101, Ontario, Cal.

**Oregon, California Government Lands**—Booklet Free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

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**Titan Batteries for Service**, get our prices before buying or having an old battery repaired. Call or write, Olive Street Electrical Co., 910 South Olive St., Los Angeles, Cal.

CATTLE

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies.** Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**45 Hereford Bulls (Weaners)**—All pure-bred mountain raised, priced around \$125.00 head. Not blowed up with fat and air to sell them but in their everyday clothes. You won't be disappointed when you see them as they are as good as lots of people will ask around \$300 for. C. B. Johnson, Raymond.

**For Sale**—Registered Guernsey bull calves out of high producing cows and sired by splendid bull. Reasonable prices and terms. Use a Guernsey bull on your grade cows and secure heifers that will produce butterfat at real profit. Elm-dale Guernsey Farm, P. J. Weisel, Santa Fe Springs, Cal.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

**D. O. Lively Stock Farm, Inc.**, 215 Hobart Bldg., San Francisco. Breeders of Hereford cattle. A few choice heifers for sale. We buy and sell live stock on commission. Farm at Mayfield

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**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Veramont Stock Farm**—Pure Bred Herefords. Only 2 pure bred and 2 grade bulls left. One 11 month Hampshire ram. Prices right. H. M. Barngrover, San Jose.

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**Ayrshires (registered)**—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Ariz.

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**Just One Grand Champion Sweepstakes** Special offered for the best pair of turkeys in the show at the California State Fair, 1917, and that prize was won by GOLD NUGGET STRAIN GIANT BRONZE TURKEYS. They again proved their superiority by winning at three great shows, California State Fair, 1917, Texas State Fair, 1917, Los Angeles, 1918. Gold Special Sweepstakes at all three shows. Each judge pronounced them the best in the show, all breeds competing.

Remember it was the Gold Nugget Strain that won at America's greatest turkey show, World's Fair, San Francisco. Three prizes on four entries.

Large turkeys can be raised at practically the same cost as small ones. My toms will give you an increased weight of five pounds the first year. Either stock or eggs will give you vitality, size and beauty. Address all communications to J. Will Blackman, 607 East Third St., Los Angeles, Cal.

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Grand Champion Sweepstakes Special, for best pair of birds in show. For size vigor and quick maturity, our stock are best, East or West. Stock and eggs in season, also Collie pups. Correspondence solicited. John G. Mee, St. Helena, Cal.

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**Giant Bronze Turkeys and Eggs**—Choice breeding stock. M. M. Reiman, Planada, Cal.

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**Registered Percheron Stallion** 7 years old, black, heavy bone, sound, gentle, broken to work anywhere. Price \$350. W. N. Bradbury, Escondido, Cal.

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**IMPLEMENTS AND RANCH SUPPLIES.** Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC. The Yellow Front. Established 1892 112-118 S. Los Angeles St. Los Angeles.

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**FOR SALE**—PUMPS, WINDMILLS, tanks, ranch tools, galvanized tanks, redwood tanks, heavy riveted and light wagon tanks.

**REDWOOD GALVANIZED** With or without heads We make new tanks Gallons 250 500 1000 1500 2000 3000 4000 5000 6000 10,000 20,000 25,000 on cars \$95.00 50,000 Used Tanks 1000 2000 3000 4000 5000 Any Size 18,000 Prices right

Tanks most all sizes from 20 gals. to 25,000 gallons, in both redwood and iron. Several mouldboard and disc riding plows, drills, tanks, pumps, sundries, single, two, three, four and five gang. Few snaps as follows: Single 14-inch Moline riding sulky plow, never in ground, \$58.50; two gang 14-inch new plows, \$78.50; two gang disc, \$58.00; three gang disc, \$85; four gang disc, \$95; five gang disc, \$95; drills, Beet, Bean, Grain—6, 8, 10, 12 ft. sizes. Several orchard cultivators and disc harrows, windmills, tanks, pumps, sundries too numerous to mention. Our experience in knowing how and what to buy, how to handle, where to sell, with our extensive advertising that has cost \$15,000 over a period of 15 years is why we succeed and give our customers more for less. DEMMITT CO., 120 N. Main St., upstairs, Los Angeles.

**For Sale Tractor Equipment**—Owing to partner being drafted the following good-as-new ranch tractor equipment is offered for sale at a bargain. Waterloo Boy tractor 12-24 H. P. now working, selling for \$1200 in Los Angeles new; 4 bottom Moline rotary disc Dutchman plow, selling for \$225, 8 ft. Mott's disc harrow, selling for \$95, 3 ft. steel lever harrow selling for \$27; 2 row Boston Bean, Moline planter selling for \$70. Call on or address E. D. Brown for Brown & Brown, 18 E. Commonwealth Ave., Alhambra, Cal. Phone 17.

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All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

WEISSBAUM PIPE WORKS, 169 Eleventh St., San Francisco.

**For Sale**—My new 20-40 C. L. Best Tractor, No. 464D. Built December, 1917. For particulars address H. P. Mohr, Amador Valley, Alameda County, Cal., Pleasanton P. O.

**For Sale**—Little Bull Tractor, 5 H. P. and John Deere Gang plow, 14 in. for tractor. Used one season, good as new. Cost \$600. Want \$450. E. M. Marquis, Berkeley, Cal.

**Gasoline Engines**, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**30-H. P. Rumley tractor** and 6 bottom Oliver mouldboard plows in first-class condition. Can be seen near Sacramento. Apply F. H. Daniels, 1350 Park St., Alameda.

**For Sale**—Gas Pull 15-30 Rumley Tractor plow, 5 ton tractor wagon, cook house, all good as new, cost \$2800, want \$1500. Chas. F. Thompson, Route B, Box 44, Bakersfield, Cal.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Disposal of Property

A man without wife or child dies leaving personal property; he has parents and a sister. What is the California law in this case and must the matter be taken into court?—Subscriber, Orange.

The estate will go to the father and mother in equal shares. No valid title can be passed to the personal property except under decree of distribution by the probate court.

Liability for Accident

An owner of an automobile takes a friend out for a ride. An accident occurs. Can the owner be held liable to the passenger?—Subscriber.

A private carrier with or without reward may be held liable for all such losses or injuries as may result from his negligence or that of his servants and while he is not an insurer of their safety he is bound to exercise ordinary care.

"Buyer Beware"

A lessee of a farm informed me that he had purchased all tools and furniture of his landlord. After staying a year he sold everything off and left the country. The landlord states that the lessee did not purchase all of the goods but did purchase a part. I purchased goods which the landlord states belong to him. Can I sell the goods and what can the landlord do

if I do sell it? Do I violate any law if I sell after I have been informed it belongs to the landlord?—Subscriber

The ancient and well established rule with respect to purchases such as the above is and always has been, "Let the buyer beware." In other words the buyer must see at his peril that the seller has title. This is modified by the rule that where the owner clothes another with the apparent power of disposition, such as the case of a commission merchant or other broker, a bona fide innocent purchaser for full value will take title. Whether the modification is the rule in any case is a question of fact upon the evidence adduced. The prudent man in the case stated, however, would have made investigation from the landlord as to the title before paying his money to a tenant as it is unusual to say the least for a tenant to purchase all the tools and furniture of a farm. If you sold now, after notice from the landlord, you could certainly be held liable for damages from your vendee and from the landlord for the further trouble caused in his pursuit of the property.

Employee's Insurance

I have employes on my farm. In case of accident, under the present law is a farmer responsible? Shall I have my men insured?—Subscriber.

The workmen's compensation act, as amended in 1917, excludes from the operation of the act any person whose employment is both casual and not in the usual course of the business or occupation of the employer and also any employee engaged in household domestic service, farm, dairy, agricultural, viticultural, or horticultural labor, or in stock or poultry raising.

We may add that many farmers prefer to elect to take advantage of compensation and carry with the state insurance enough to cover possible accident.

Terms of Lease

I have a lease on a farm for three years and six months; to insure payment of the rent I agreed to furnish a bond in the shape of a mortgage on certain city property; the landlord agreed to pay all expenses necessary for a title company to show this mortgage of record. The expenses were over \$10 and the landlord refused to pay and the delivery of this bond has been delayed for over a year. The landlord has accepted his rent to date and in fact is paid for some time in advance. He threatens to sue me for breach of the lease on the ground that I have not furnished the bond. Let me know if I am right or wrong.—Subscriber.

If the question as above re-stated is a correct statement of the facts, the landlord has waived all right to sue for the breach for non-delivery of the bond. First, he did not pay the expenses of the bond as he agreed and he cannot complain for the non-delivery has been caused by his own omission. Second, he has accepted rent with knowledge of the breach alleged and thus, under a long line of decisions of the courts, he has waived his right to claim any breach done prior to the acceptance of rent, as actionable ground for cancellation of the lease.

Stamp Tax on Deed

In order to disincorporate B executed a deed of a farm to A in 1916. A gave B a contract to sell to B for \$6180 and assumed a mortgage on the property for \$2800. In December, 1917 B obtained a mortgage for \$4500 with which he paid off the mortgage for \$2800, then gave a second mortgage to A for \$1900 and obtained a deed from A. These last three deals bear date the same day. How much revenue stamp tax should be paid? B claims an entire exemption while the recorder claims that \$6.50 should be paid.—Subscriber.

If at the time of sale the mortgage for \$2800 was on the property, then the stamp tax would be based on a valuation of \$3380 and your tax would be \$3.50; if the mortgage was removed from the records prior to time of sale then your tax would be \$6.50. It certainly could be no less than \$3.50, and unless such stamps are affixed to the deed at the time it is recorded some one is guilty of a misdemeanor and the recorded deed is worthless as conveying title.





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*Will start the baby chicks right.  
The best Mash feed and the best Grain  
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Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—"Your money back if YOU are not satisfied"—the guarantee that has stood for nearly 50 years.

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Costs no more than ordinary mash, but it's worth more because of the DRY BUTTERMILK added.

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GLOBE MILLS, Los Angeles

## BUTTER GLOBE MILK DRY A-1 MASH

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

## Rations for Baby Chicks

Written for California Cultivator by Jean A. Koethen

**T**HERE are as many methods of feeding baby chicks as there are people who raise them. Everyone, no doubt, thinks his way is the best, and so it is, for him. For it is only as we get beyond the need of following any particular formula and grasp principles instead of methods that we may count ourselves masters of the art of chick raising. The master or mistress—it is as often the one as the other—knows that the same end may be attained in a dozen different ways. The way I choose is the one that happens to be most convenient for me or best suited to my breed of chicks.

Chicks that are brooded artificially always require a little more careful feeding than chicks cared for by a hen. There is more danger of chilling and the indigestion that almost inevitably results. Given a good mother hen with a dozen chicks and plenty of clean range, you may feed them almost anything you will, within reason. Chick feed, rolled oats, bread and milk, chopped hard boiled egg, bran, pinhead oats, all are good, and it makes very little difference which the chick is started on so it is given a variety as it needs it. Eggs that have been tested out from under the hen the seventh or eighth day, boiled till they are mealy, and chopped with an equal amount of very dry bread crumbs, have been for many years a standard first feed. Now that we are Hooverizing we can hardly spare either bread or eggs, and it is not at all necessary. Where large numbers of chicks are raised such fancy feeds are out of the question, and it is just as well to start the chicks on the grains they will have to grow up on.

At the Connecticut experiment station, the first meal, which is given when the chicks are about 48 hours old, is sour milk which is just beginning to thicken. This is kept before them in shallow pans in place of water for the first ten days. The first solid food is chick feed. This is scattered rather sparingly in the scratching litter the first week so that the chicks may learn to eat and to scratch at the same time. The chick feed consists of the following grains: Cracked wheat, 15 parts by weight; fine screened cracked corn, 15 parts; pinhead oats, 10 parts; broken rice, 3 parts; chick grit, 5 parts, and fine charcoal, 3 parts.

After the first week the following dry mash is kept before them: Bran, 10 parts by weight; cornmeal, 5 parts; middlings, 5 parts; ground oats, sifted, 5 parts; beef scrap, sifted, 5 parts. If sour milk is fed only half the amount of beef scrap is used. Green feed is given not later than the second or third day, mangels cut into cubes being used. As soon as the chicks are old enough to be out they are given grass or clover range.

At the California experiment station at Davis the chicks are not fed for from 60 to 72 hours after the hatch is completed. When they are first put in the brooder a fountain of water is put before them and they begin to pick up the sand from the brooder floor. The first ration given consists of equal parts fine cracked wheat, fine cracked corn and steel cut oats, which is left before them in a wooden tray the first two days so that they may learn to eat. When they have learned, the grains are scattered, first on the sand, then over a light litter of cut

alfalfa or clover, and the chicks from this time must scratch for all their grain. On the sixth day a dry mash composed of two parts each of bran, middlings and beef scrap, one part corn meal or barley meal, one part powdered bone, and three parts powdered charcoal by weight is fed at 10 o'clock, and the grain mixture is scattered in the litter early in the morning and about 2 p. m. No further change is made till the chicks are two weeks old, when the dry mash is left before them a little longer each day. By the eighth or tenth week the mash is left before them all the time.

Sour milk is one of the best feeds for chicks of all ages. It is the best preventive, other than sufficient warmth, of diarrhea and the only known cure for coccidiosis. It contains protein in a more digestible form than meat or any of the meat meals, and its use is the most certain guarantee of health and rapid growth. How the present scarcity of milk is going to affect the baby chick industry I do not know. Perhaps the goat will help us out, but even goats must eat.

The above methods of feeding are followed more or less closely by most California poultrymen. One man, who has had marked success, follows the Davis schedule quite closely till the chicks are ten days old. After this time the mash, instead of being specially ground for the chicks, consists of the laying mash which is fed to his hens mixed with an equal amount of bran. This is mixed with cottage cheese until it is crumbly but never really wet. This mixture is fed at first twice a day, in the middle of the forenoon and the middle of the afternoon, but one meal is dropped after a time, the one daily feeding being continued till the chicks are three months old. Another man, a very successful fancier, feeds only commercial chick feed the first five days. At the end of the fifth day a hopper of plain bran is added. This is left before the chicks. After the eighth day corn meal (coarse), beef scrap and charcoal are added to the bran according to the following formula: Bran, two parts; corn meal, two parts; beef scrap, one part; charcoal, one part. When the chicks are three weeks old their scratch feed, which has so far been only commercial chick feed, is changed to a mixture of one part oat groats, two parts wheat and two parts cracked corn. After they are three months old the chicks are fed a mash consisting of 100 pounds laying mash and 100 pounds fine ground oats. The scratch feed about this time is changed to a mixture of equal parts cracked corn, whole oats, wheat and hulled barley.

Now that both wheat and corn are so expensive it is a question how these formulas may be modified to meet changed conditions and yet give the chicks the required nourishment. Bran and middlings are still within our means, and we are promised that corn may soon be. Ground kafir and broken rice are both fair substitutes for the grains we have been accustomed to use, and sprouted oats are a splendid feed for chicks. It may be we shall have to cut down the number we try to raise and depend more on green range. At any rate, the problem, how to raise chicks without wheat or corn, is one which may well engage our most serious attention. We cannot stop raising chickens, and they must learn to thrive on what we can give them.

An essential part of all chick feed-



ing is the delaying of the first meal until the chicks are really hungry. The day it hatches the chick draws into its intestines the yolk of the egg it is leaving, and this is sufficient food for from 48 to 72 hours. If more food is given before this is digested, digestion is interfered with and bowel trouble may result. Just how long this yolk remains undigested may perhaps depend on circumstances,

such as the vigor of the chick and the warmth and rest it gets. I have never seen any ill effects from feeding chicks at from 36 to 48 hours after hatching, but my chicks are usually mothered by hens, and this makes considerable difference. There can certainly be no harm in making the chick wait till it is at least 48 hours old, and much trouble may be saved by this precaution.

## Up-to-Date Poultry Ranch

Written for California Cultivator By M. C. Holman



IN a little valley just back of Benicia, nestled snugly in the hills, lies the extensive plant of the California Poultry Company. No cold from the ocean, no winds from the north can disturb the serenity of this ideal spot, for its natural barriers give it exemption.

For a long time California has depended upon an auxiliary supply of poultry from the East, but with prices and demand in excess of ordinary, poultry has not found its way to the West in sufficient quantity to relieve the market and the demand is still unsatisfied. With poultrymen killing their hens to avoid feeding them through the strenuous times of high prices, the condition of the market is likely to be further subjected to severe changes.

San Francisco is a city of delightful eating. It craves the best the market can produce and is willing to pay the price. This demand and willingness to pay are the primal motives for the establishment of the field branch of the California Poultry Company.

It is due to the foresight and genius for management of W. E. Coleman, the manager, that the plant has taken on its enormous proportions. The plant is composed of 159 acres. It contains five large brooder houses, each measuring 35 by 200 feet. Besides these there is the incubator house, the granary, with a capacity of 14 cars, the steam room, the cutting room, the water supply station and the additional houses which will be used as laying houses when the plant shall have been more fully developed.

It has long been a pet notion with hatchers that chicks cannot be made to pay when hatched through the year and that the spring is the one time to hatch chicks. This theory has been entirely exploded by the Benicia plant, for chicks hatched in the fall are just as good, grow just as well, sell for as much or more than those hatched in the spring, when there is an over production which causes prices to fall very perceptibly. This plant is the only one in the world where hatching is carried on all through the year.

Into the first of the five houses the

young chicks are placed. The number will be from five to twenty thousand at a time. At our recent visit we saw more than 15,000 chicks, all of the same age. The chicks remain in this brooder house for three weeks, when they are transferred to the second, or growing house. They usually fill two of these houses, for a little more room must be given them. They remain in their new house for another three weeks, being fed in the best possible manner and taking on flesh at a rapid rate. At the end of their allotted time they are transferred to the last of the chick houses, where they remain till they are old enough to be sent to market. This is at the end of the eighth week when they are just in the tender chicken age to be most palatable. They are then sent to the San Francisco house of the company to be fattened as rapidly as possible and slaughtered for food. About 50 dozen of these young broilers are shipped from the plant every day throughout the year.

Every modern convenience is afforded the young stock to attain the greatest possible growth. Temperature, food, sunlight, ventilation and running water are all provided, insuring health, vigor and rapid growth.

Cleanliness is the one feature of the plant that stands out prominently. A hatch is arranged for every four weeks. The chicks are transferred every three weeks, thus there is a week intervening from the departure of one lot to the arrival of the next. That time is put to good advantage. All sections of the house are thoroughly cleaned. Every hover and every board is removed, cleaned and thoroughly disinfected with a combination of crude carbolic acid and kerosene. Lice cannot live in such surroundings. Fresh, clean straw replaces the old, and everything is made ready for the new occupants. The steam heating plant is given a thorough test to see that it comes up to requirements so there may be no loss of chicks due to a fall in the temperature. Watchmen constantly patrol the plant at night.

The future of this company is particularly bright. With ample room to broaden out, with a market for all they can raise, with brains and ability back of the enterprise, there is every reason to think that within a few years the plant will have been more than doubled. It is also the intention of the company to have laying stock. Two large houses are now in course of construction for that purpose. Each house has a capacity of 5000 and is divided into laying units for from 200 to 500 hens each. Removable nests have been provided and everything awaits the arrival of the layers. Heretofore the eggs have been purchased in the open market, but with the advent of the hens in sufficient number to supply all demands, if this is ever possible, there will be a complete plant supplying the broilers from shell to market.

The outlying land is being prepared for the production of such green feed as the chicks may need. There is ample ground to raise everything in the green line that will be called for, and it will be served to the chicks thoroughly ground and fresh from the field.

What the California Poultry Company has done can be done by any similar combination of brains, ability and push. Visitors are cordially invited to inspect the buildings and grounds. Hours are from one to five every afternoon.

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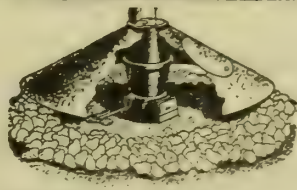
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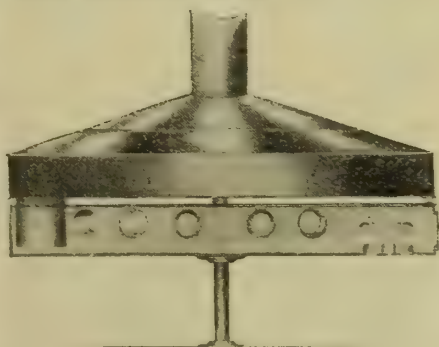
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Ventura County Fair Association finds cash balance in the treasury and is planning for another and better fair next fall.

## Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Testing Horses and Cattle

Does the law require horses and cattle to be tested or inspected for diseases when shipping from Los Angeles to Tulare County? If so, who does the work?—Subscriber, Whittier.

Make application to your county veterinarian.

### Making Will

If a person should wish to write his own will, is it necessary to employ attorney or to have witness?—Subscriber, Patterson.

One of the simplest documents to write and have legal is the will or testament, and no document has more trouble to get through the courts satisfactorily. It is not necessary to employ an attorney, although for so important a document it is perhaps wise, especially if the situation is in any way involved. Here is a short form given in the legal department by Attorney Payne in the columns of the California Cultivator of February 16, 1911:

"I.....give, devise, and bequeath to my wife.....an undivided one-half interest in and to all of my property of every kind and description wheresoever situated, during her lifetime, to have, use and enjoy the income therefrom during her natural life, and I hereby give, devise and bequeath all of the said property remaining at her death to my children equally." (Naming them.)

Mr. Payne added that it was not necessary to name the children, but it would be wisest to do so, that is, if there is no mention made of various heirs the courts might construe the matter as forgetfulness on the part of the testator, and that other heirs were entitled to a part of the estate. Where there are immediate heirs the names may be mentioned, and bequests of "love and affection" or \$1.00 or any other nominal amount showing remembrance of them would add to the security of the document.

### Bean Growers' Association

Where is there a bean growers' association which one might join in order to market his beans for a fair price?—Subscriber, Rosamond.

The Central California Bean Growers' Association has headquarters we believe in Sacramento. Would suggest writing to State Market Commissioner Weinstock, Sacramento, who can give information regarding that particular association. The California Lima Bean Growers' Association, while formerly exclusively dealing in limas, at one time considered enlarging its scope and taking in all producers of beans, so that, should you prefer, you might write this association at Oxnard, Ventura County.

### Salting and Curing Meats

What is the best method of salting and curing pork? — Subscriber, Etiwanda.

You will find an article in this week's issue on page 113 by Professor Cruess. We also refer inquirer to October 21, 1916 issue for an article on same subject.

### Warbles

Referring to our answer to question on the subject, "Grubs in Cow's Back" in the issue of the January 12, a Paso Robles subscriber writes:

"In your issue of January 12 a subscriber asks how to get rid of grubs or warbles. One application of sheep dip or mixture of that kind will do it. I used a dip called Caro Napholeum. One application killed the grubs. I made it strong, but I believe a weak mixture will do it. That is better than pressing them out which not only hurts the animal but is dirty work."

### Application of Lime

I was very much interested in the

article in your issue of January 5, "Lime, Its Value and Use," but there is one portion of it which I cannot see how it could be right, that is, under the subheading "Mining on the Farm," the last half of that part which says, "Sometimes hardpans are formed by the lime that has leached down, etc." The reason I do not understand that is that we often read, and under the subheading of "Physical Effect" this writer says "a small amount of lime will cause flocculation of clay, destroying adhesiveness, etc." If so I do not see how it could form hardpan as that is usually, if not always, formed in a clay soil. I am intensely interested in this as I have some hillsides which are a brownish clay, and the orange trees do not do much good on them, I believe because the soil is so compact that neither water nor air penetrate it sufficiently. I am considering liming it but do not want to make it any more liable to hardpan than it is as I consider it is the hardpan left after years of grain farming and particularly by the surface soil being washed away. Have also considered blasting it but think it would all run together again with the first winter's rain. It is surrounded by other orange trees so I cannot well plant anything else. I raise a cover crop of melilotus and burr clover every winter but it is not enough.—Subscriber, Whittier.

Dr. Snowden replies:

It is true that lime flocculates clay, rendering a stiff adobe more pervious to both air and water, thereby increasing the activities of the useful microorganisms and consequently improving the biochemic relations of the soil. Gypsum too possesses this virtue in a marked degree. When there is a considerable aggregate of lime carbonate in a soil and the rainfall upon it is light, the rain water containing, as it always does, carbon dioxide (in solution, carbonic acid) carries some of this lime as calcium bicarbonate, as far down as it goes; and if it does not reach the water table capillary action never brings it upward again. Evaporation inside the soil returns this water as vapor to the atmosphere while the lime remains below. This rise of moisture from the soil by internal evaporation is manifested in and proven by the hoar frost appearing on a cold winter morning in striated perpendicular columns, lifting a layer of the soil above it, and also as dew found under a board lying on the ground over night. Indeed, on account of the internal evaporation in the soil it is a fact that a meager application of water to the soil causes loss of soil water by increasing this evaporation. The continued repetition of the process of deposition of lime in the subsoil produces lime hardpan. In the humid soils the lime, instead of accumulating to form hardpan, passes into the drainage and is lost to agriculture. The hardpan of such a region is a combination of vegetable matter with the soil. Do not be afraid to put on lime if your soil needs it, for it is quite certain that not enough will be applied to form hardpan.

### Bleeding Walnuts

Have pruned a few of my walnut trees. They are bleeding badly. Will it injure, and should I continue the pruning?—Subscriber, Los Angeles.

The so-called "bleeding" of walnut trees has no effect on the trees other than to cause them to be a little later in putting forth leaves and blossoms in the spring, and sometimes this is a benefit if there should be late frosts. The flow of sap will be found strongest when cold nights are followed by warm days. If the weather is uniformly warm, both day and night, there will be no excessive sap flow, and the same holds true if the weather is cool. It is really never too late to prune walnut trees, but it is best to do heavy pruning before the buds open as there is less shock to the tree and no damage from breaking off new growth having the nut blossoms.—J. B. N.

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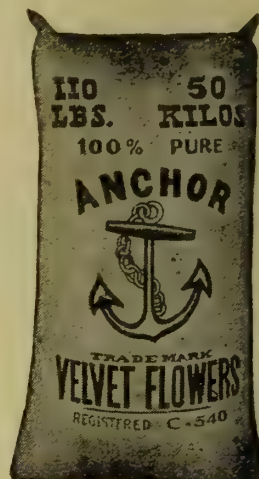
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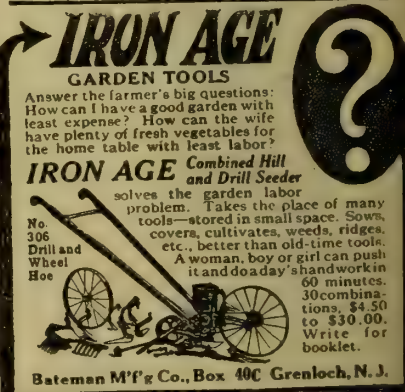
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Pattern Department  
California Cultivator  
Los Angeles

Household Department

YOUR LAD, AND MY LAD

Down toward the deep-blue water, marching to throb of drum  
From city street and country lane the lines of khaki come;  
The rumbling guns, the sturdy tread, are full of grim appeal,  
While rays of western sunshine flash back from burnished steel.  
With eager eyes and cheeks aflame the serried ranks advance;  
And your dear lad, and my dear lad, are on their way to France.

A sob clings choking in the throat, as file on file sweep by,  
Between those cheering multitudes, to where the great ships lie;  
The batteries halt, the columns wheel, to clear toned bugle-call.  
With shoulders squared and faces front they stand a khaki wall.  
Tears shine on every watcher's cheek, love speaks in every glance;  
For your dear lad, and my dear lad, are on their way to France.

Before them, through a mist of years, in soldier buff or blue,  
Brave comrades from a thousand fields watch now in proud review;  
The same old Flag, the same old Faith—the Freedom of the World—  
Spells Duty in those flapping folds above long ranks unfurled.  
Strong are the hearts which bear along Democracy's advance,  
As your dear lad, and my dear lad, go on their way to France.

The world rings out; a million feet tramp forward on the road.  
Along the path of sacrifice o'er which their fathers strode.  
With eager eyes and cheeks aflame, with cheers on smiling lips,  
Those fighting men of '17 moved onward to their ships.  
Nor even love may hold them back or halt that stern advance,  
As your dear lad, and my dear lad, go on their way to France.

—Rainald Parrish.

The Scourge of God

Germany's Business Is War, Paying As High As 10,000 Per Cent Profit.

The stories of oppression and cruelty by the Prussians in the present war have been so often questioned that, while there is no pleasure in the review, there is a satisfaction in knowing the truth. One of the best and most clean cut statements we have seen is that made by a noted divine, Newell Dwight Hillis, in an address at The War Convention at Atlantic City some weeks since.



WITH Germany, war is a national industry. Germany's agriculture pays six per cent. and finance pays eight per cent. Germany's war against Denmark, when she seized Schleswig-Holstein, paid her a thousand per cent. Her war in 1870 to grab the iron mines of Alsace and Lorraine paid her ten thousand per cent. Germany expected the war of 1914 to pay her twenty thousand per cent. "We have made no investment like our wars," said Bernhardt. "Let Belgium found steel plants at Namur and Liege—we will loot them. Let Nancy and Rheims and Arras fill stores with rich goods—and we will grab them."

This war had its origin in a meeting held in Potsdam Palace in 1892. On that occasion the Kaiser placed in the hands of his friends a confidential document; at the head of the document were these words: The Pan-German Empire. The second line read: "From Hamburg on the North Sea to the Persian Gulf." The third line was: "Our ultimate goal—by 1915—250,000,000 of people." The fourth line: "Our ultimate goal—the Germanization of all the people of the world." On the opposite page is a part of the Kaiser's address: "From my childhood I have been under the influence of five men: Alexander; Julius Caesar; Charles the Fifth; Frederick the Great; and Napoleon. All of these men dreamed their dreams of a world-empire—they failed. I have dreamed my dream of a world-empire—I shall succeed."

On the third page was a map of the old Roman Empire with Rome as the capital, Caesar Augustus as the war lord, and the once mighty states subdued, with Carthage and Jerusalem, Ephesus and Athens, reduced to the level of county seat towns. On the opposite page is the 1915-to-1925 world German map. Instead of the Roman Empire, you have the Pan-German Empire. Instead of Caesar Augustus, you have Kaiser Wilhelm II. And upon the countries once named: Russia, "Austria," "France," and "Great Britain," you have the word Germania, for Petrograd, Paris and London have become county seat towns.

The Kaiser told Ambassador Gerard that after this war was over, he would have no nonsense from the United States; by which he meant

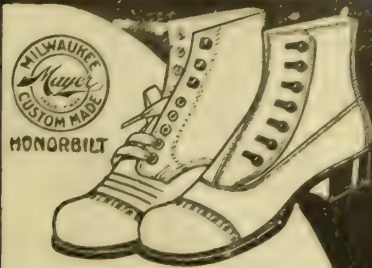
that Germania would be written across our country with the "G" on San Francisco and the "A" on Washington. To win this goal, the Kaiser has bent every energy, he has turned his whole nation into one military machine with which to conquer the world.

War as a National Industry

In his textbook on militarism, Bernhardt speaks of war as "a national industry." A good business man builds his plant, organizes his workmen, and pays dividends of ten per cent. Not otherwise, Bernhardt shows the German people how to make war pay large dividends, partly through money tribute and partly through territory acquired. This German teacher on the science of war has proved that Germany has never made better business investments than in her wars. Her war with Austria in 1866 was a profitable investment, yielding Silesia as a dividend. Her war with Denmark was good business—it yielded Schleswig-Holstein and the hope of the Kiel Canal. Her war upon France in 1870 was most profitable—it paid \$1,000,000,000 in gold and the iron mines of Alsace and Lorraine.

It was in 1894 that the Kaiser and his associates first put into the hands of their leaders the Pan-German scheme, with its motto, "From Hamburg to the Persian Gulf." In 1911 the Pan-German Union published a second series of maps, with military and political plans, bringing up to date the scheme for a German Empire beginning at Hamburg and ending at the Persian Gulf.

The maps and plans as given out in 1894 run the German frontier line around Denmark, Holland, Belgium, the iron provinces of Northern France, the German province of North Switzerland; they make Austria-Hungary to be an ally state of equal rank with Prussia, but in the plan as published in 1911, the Kaiser places German military heads in control of the Austrian and Turkish armies, while the southern lines of the Pan-German Empire include all the Balkan States, the Kaiser's sister's state of Greece, with all of Asia Minor and Persia. So carefully was the plan wrought out, so perfect were the details, that today should the war close, as some wish, nine-tenths of all the Pan-German scheme would have been achieved.



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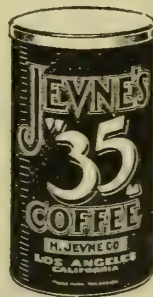
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MAKES HEAT AT HALF WHAT WOOD AND  
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Los Angeles.



I have in my possession an iron coin given as a token to each German soldier. At the top is a German portrait of Diety, and underneath are these words: "The good old German God." The Diety holds a weapon in his right hand; and the token bears these words: "Smite your enemy dead. The day of judgment will not ask you for your reasons." To this native characteristic Goethe was referring when he said, "The Prussian is naturally cruel; civilization will intensify that cruelty and make him a savage."

For three years German-Americans have protested that the stories of German atrocities were to be disbelieved as English inventions, Belgian lies and French hypocrisies, but that day has gone forever. On a battle-line four hundred miles in length, in whatsoever village the retreating Germans pass, the following morning accredited men hurried to the scene to make the record against the day of judgment.

#### Taking the Proof

The photographs of the dead and mutilated girls, children and old men, tell no lies. Jurists rank high two forms of testimony: the testimony of what mature men have seen and heard, and the testimony of children too innocent to invent their statements but old enough to tell what they saw.

The cold catalog of German atrocities now documented and in the government archives of the different nations makes up the most sickening page in history. These atrocities also were committed not in a mood of drunkenness, nor an hour of anger, but were organized by so-called German efficiency, and perpetrated on a deliberate, cold, precise, scientific policy of German frightfulness. The Germans slaughtered old men and matrons, mutilated captives in ways that can only be spoken of by men in whispers; violated little girls until they were dead; finding a calf-skin

nailed upon a barn door to be dried, they nailed a babe beside it and wrote the word "Zwei;" they thrust women and children between themselves and soldiers coming up to defend their native land; bombed and looted hospitals, Red Cross buildings; violated the white flag—while the worst atrocities cannot even be named here.

No one understands the German people as well as the Kaiser. Our President, in a spirit of magnanimity, patience, and good will, distinguished between the Kaiser and the Prussian government, and over against them put the German people. But Germany's Chambers of Commerce, Hamburg's Board of Trade, and certain popular assemblies, would have none of this, and in the fury of their anger passed resolutions, saying: "What our government is, we are. Their acts are our acts. Their deeds and military plans are our plans."

#### Personal Observations

During July and August, when I was in Europe, we went slowly from one ruined town to another, talking with the women and the children; comparing the photographs and the full official records made at the time with the statements of the poor, wretched survivors. In Gerbeville I heard the detailed story of a woman whose boy of fourteen was hung to a pear tree in the garden; and when the officer and soldier had left him and were busy setting fire to the next house, she cut the rope, revived the strangled boy, only to find the soldiers had returned; and while the officer held her hands behind her back, his assistant poured petrol on the boy's head and clothes, set fire to him, and while he staggered about, a flaming torch, they shrieked with laughter.

When they had burned all the houses and retreated, the next morning, the prefect of Lorraine reached that Gethsemane, and photographed the bodies of thirty aged men lying as they fell, the bodies of women stripped

and at last slain; while in the next village stood the ruined square belfry into which the Germans had lifted machine guns, then forced every woman and child—275 in number—into the little church and notified the French soldiers that if they fired upon the machine guns, they would kill their own women and children. After several days' hunger and thirst, at midnight, these brave women slipped a little boy through the church window, and bade their husbands fire upon the Germans in the belfry, saying they preferred death to the indignities they were suffering. And so these Frenchmen turned their guns, and in blowing that machine gun out of the belfry killed twenty of their own wives and children.

In a hundred years of history, where shall you find a record of any other race, who call themselves civilized, who are such sneaking cowards that they could not fight like men or play the game fairly, but in their chattering terror put women and little children before them as a shield.

During the January snows, a dear friend and noble surgeon, at the head of a hospital at the front, wrote me a letter which stays my heart as the anchor the ship in time of storm. The ground was deep with snow, many wounded men had been carried in from the field, but at midnight, when his work was done, the physician wrote me this letter:

"This war is of God. Sometimes it is peace that is hell. The soldier's life is a life of poverty, obedience, self-sacrifice; we know what the civilian's life is. But for the chastisement of this war, Berlin and Vienna, London and Paris, would have descended into hell within three generations. I once spoke in your church on the blessings of peace: if ever again I have that privilege, I shall speak on the blessings of war. I never dreamed that men could be so noble. For three months I have slept on the stone; for

three months before that in a tent; for six months I have not been in a bed; but I have never been so happy. I have acquired the fine freedom of a dog, and like a dog wear a metal tag around my neck so that they may know to whom I belong when it happens that I can no longer speak. And never was a man engaged in a cause so noble. I have seen Belgium; I have seen a lamb torn by the wolf; I am on the side of the lamb. I know the explanations the wolf has to offer—they do not interest me. I only wish you were here with me at this battle for your own good; for right here at this western front this war will be decided, just where all the great wars of history have always been decided. It is decided already, but will take the enemy some time yet to find it out."

#### CAN YOU HANG YOUR OWN SKIRT?

Written for California Cultivator  
By Ruth Dougherty

You can do it. It sounds too good to be true, but it is. This is the way: Take a common yard stick, a piece of tailor's chalk and a sharp knife.

Cut a wedge shaped piece out of the edge of the yard stick, of a size to fit the piece of chalk when it is slipped in with the broad edge next the stick. This cut for the chalk may be made where convenient for the user, for myself I make it at the 27 inch point.

Now to hang the skirt! Place end of yard stick on floor, holding carefully in vertical position, with chalk marker next your skirt. This brings the marker below the swell of the hips. Mark skirt with chalk; move a few inches, mark again; move along farther and mark; continuing all around the skirt, being careful to keep end of stick vertical, so that your chalk line will be at an even distance from the floor all around the skirt.

Now take skirt off and lay on bed or table. With your yard stick measure down from the chalk line and mark with chalk line for turning hem.



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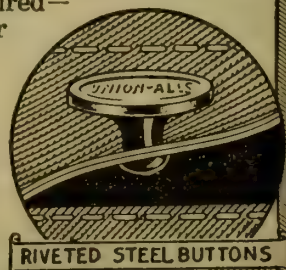
**FARMERS** everywhere are insisting on **Lee Union-Alls** when they purchase work clothing. The new suit is so much more practical and comfortable than the old fashioned overalls and *more economical*, too. No loose ends to catch in things, no suspender straps or binding belts. The suit covers you from neck to feet, keeping out dust, dirt and chaff. You slip it on in a jiffy either over your regular clothing or your underwear. Triple stitched seams, riveted buttons, reinforced strain points—workmanship the best, material the strongest. If your dealer does not supply you we will send your size direct. Write for descriptive booklet, telling us your chest measure and material desired—Blue Denim, Khaki, Stifel Stripe or Hickory Stripe.

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RIVETED STEEL BUTTONS

TRIPLE STITCHED SEAMS

REINFORCED STRAIN POINTS



For instance, if you wear your skirt six inches from the floor and your chalk marker is 27 inches from the floor, you will measure and mark the hem 21 inches from your first chalk line.

Now run basting thread through your chalked hem line; turn up hem and press and your skirt is all properly hung and ready for the regular hemming and you can wear it with the serene consciousness that it's straight around the bottom.

Does it sound a bit complicated? Try it and you'll find it simplicity's self. It really takes less time and bother than the time honored method of having somebody else get down on the floor before you and mark with many turnings and sightings from across the room. Then you can do it at just the minute you are ready, without waiting until somebody else can conveniently do it.

With our straight, narrow skirts coming back in style the hanging is very easy.

Tailor's chalk, by the way, is an indispensable. Two pieces, that will last for years, may be purchased at two for a cent and may be used for marking length of skirt, of sleeves, outlining cut for neck, for arm's eyes, marking button holes, tucks, oh! ever so many things—in fact it's almost as useful as a pin.

#### LEFT-OVER RICE

Although rice has remarkable food value, it has little individual taste and so takes on the flavor of the dish with which it is combined. This quality makes rice an excellent foundation for milk and cheese dishes, or combination with meat, chicken and fish in stews. Rice can be combined with any vegetable, made into a variety of desserts, used to thicken soups or mixed with wheat flour or cornmeal in bread making. Even a spoonful left over can be stirred into bread, mixed in chicken stuffing or dropped in the soup pot. Left-over rice may be browned in fat for breakfast or made into cakes by adding an egg, a little milk, flour to thicken and a teaspoon of baking powder. These rice cakes are delicious with syrup.

#### Rice Cornbread

Cooked rice can be used in any cornbread dough. It adds lightness to the bread. From the rice growers of Louisiana comes this recipe for rice cornbread:

Three eggs, one pint milk,  $1\frac{1}{2}$  cups boiled rice,  $1\frac{1}{2}$  cups cornmeal, two teaspoons fat, one teaspoon salt, one teaspoon baking powder. Beat eggs very light, add milk and other materials. Beat hard and bake in shallow greased pan in hot oven.

#### Rice Hash

Put in a pan one cup each of boiled rice, cooked meat cut fine, and hot water. Season with one teaspoon each of salt, chile pepper and chopped onion. Boil 15 minutes.

#### Baked Hash of Rice and Meat

Put in a stewpan one cup each of chopped meat, cooked rice and milk; two tablespoons of fat, one teaspoon of salt, one-fourth of a teaspoon of pepper. Stir for one minute, then add a well beaten egg. Turn the hash into a baking dish and bake 20 minutes.

#### Roast Goose or Duck Stuffing

Four onions, four apples, four leaves each of sage and thyme; fry these in two tablespoons of fat till brown; add boiled rice until of a desired stiffness. Season with salt, pepper and cayenne.

#### Codfish Balls with Rice

One pint of codfish, two pints of

potatoes, one cup of boiled rice, one tablespoon of fat, two beaten eggs, three teaspoons of milk. Mix together and make into balls and fry in deep fat. Serve hot.

#### Rice Stew

Boil together one can of English peas, one-half cup of rice, one teaspoon of salt, pepper to taste, one tablespoon of fat and one cup of sweet milk. Thicken with flour. Serve very hot in a hot dish. Cover the top with grated cheese before sending to the table.

#### CONSERVE COTTON

That nearly a bale of cotton is used every time a big gun is fired and that according to government reports there are 500,000 fewer bales of cotton this year than last, is the declaration of the women's committee of the national and state councils of defense in a plea made today for the careful conservation of all cotton products. Attention is called to the practice of using good towels, table cloths and napkins for scrubbing rags, for polishing metal and for other purposes which destroy their usefulness. The daily call from the Red Cross for material for surgical dressings and bandages is becoming heavier each day, and the available cotton supplied will soon be

needed for these purposes. Housewives and others are urged to make both cotton and linen products last as long as possible.

#### THEN SHE SAW STARS

Booth Tarkington was talking in Indianapolis about the stage. "There were two actresses in an early play of mine," he said, "both very beautiful; but the leading actress was thin. She quarreled one day at rehearsal with the other lady, and she ended the quarrel by saying haughtily: 'Remember, please, that I am the star.' 'Yes, I know you're the star,' the other retorted, eying with an amused smile the leading actress' long, slim figure, 'but you'd look better, my dear, if you were a little meteor'."—San Francisco Argonaut.

#### USELESS ECONOMY

"Economy has it pains as well as its pleasures," says a Washington preacher, "if the experience of an old dorky of my acquaintance in Virginia counts for anything.

"One spring, for some reason, old Mose was going round town with a face of dissatisfaction. When questioned, he poured forth a voluble tale of woe in these terms:

"Marse Tom he come to me last

fall and he say: 'Mose, dey's gwine to be a hard winter, so yo' be keeful and save yo' wages fast an' tight.

"An' I believe Marse Tom, yassuh. I believe him, an' I save, an' when the winter come it ain't no harship, and dere I was wid all dat money thrown on my hands."

#### PUNISHMENT WITHOUT CAUSE

An irascible father administered a sound thrashing to his son Samuel. After he had finished he thundered to the suffering victim:

"Now tell me why I punished you!"

"That's just it," sobbed Sammy "You nearly pounded the life out of me, and then you don't even know why you did it!"

#### NO OUTSIDE HELP WANTED

"What is your idea of patriotism?"

"Patriotism," replied Senator Sorensen, "is what inspires a man to point out many needs for reform in his country, but causes him to resent an indorsement of his views by a foreigner."—Washington Star.

#### BULL'S EYE AGAIN

"Why on earth don't men settle down after they marry?" complained Mrs. Gabb.

"Because their wives won't quit stirring them up," retorted Mr. Gabb. —Cincinnati Enquirer.

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**EASTMAN KODAK COMPANY,  
ROCHESTER, N. Y.**



## Los Angeles Market

Los Angeles, Jan. 30, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....51  
Dairy Exch. prices past week:  
Jan. 23 24 25 26 28 29  
'18 52 52 52 52 51 51  
'17 52 52 52 52 51 51  
Rets. wk. ending Jan. 29, 273,900 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. ....24  
Eastern Daisies .....28½  
Tillamook Trip .....27  
Domestic Swiss .....35

## EGGS

Exchange quotations. Prices to re-  
tailers 2 to 4 cents higher.  
Fresh extra .....51  
Pullet .....50  
Case Count .....50  
Dairy Exch. prices past week:  
Jan. 23 24 25 26 28 29  
'18 58 55 51 51 51 51  
Rets. wk. ending Jan. 29, 1827 cases.

## POULTRY

We quote to producers:

Broilers .....34@36  
Fryers .....30  
Hens—Leghorns .....27@28  
Roasters, 3 lbs. and up .....28  
Ducks, lb. ....20@25  
Roosters, old .....15  
Turkeys .....26@30  
Geese, lb. ....20

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning January  
30, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000 to 1100 lbs. 8.50@9.00  
Heifers, good .....6.00@6.50  
Cows, good .....5.50@6.00  
Canners .....4.50@5.00

Hogs—  
Av. 125 lbs. ....14.50  
Av. 150 lbs. ....15.00  
Av. 175-200 lbs. ....15.50  
Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent.  
Prime wethers .....9.50@10.00  
Ewes .....9.00@9.50  
Lambs .....14.00@14.50  
Yearlings .....10.50@11.00

## POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....1.90@2.00  
Russets .....2.00  
Sweet, sk. ....4.50@5.00

## ONIONS

Wholesale selling price:  
Brown .....2.60@2.65  
White .....3.50  
Garlic .....8

## VEGETABLES

Wholesale prices:  
Artichokes, doz. ....75@1.25  
Beans—String, lb. ....25

Limas, lb. ....20  
Ky. Wonder .....16@17  
Beets, sk. ....1.50@1.60  
Brussels Sprouts, lb. ....12½  
Cabbage, lb., 2½; sk. ....2.50  
Red, lb. ....5  
Carrots, doz. ....35  
Cauliflower, doz. ....1.00@1.10  
Celery, doz. ....80@90  
Cucumbers—Hothouse, doz. ....1.50@2.00  
Egg Plant, lb. ....12@13  
Horseradish, lb. ....15  
Lettuce, doz. ....35  
Leeks .....30  
Mustard, doz. ....20  
Onions, green, doz. ....25  
Oyster Plant, doz. ....40  
Peas, lb. ....12  
Peppers, lb., 26; Chili .....22  
Parsnip, doz. ....40  
Parsley, doz. ....20  
Pumpkins, lb. ....35  
Radish, doz. ....25  
White .....35  
Rhubarb—Strawberry .....1.25@1.35  
Romaine, doz. ....35  
Spinach, doz. ....30  
Squash—Crockneck .....70@75  
Hubbard, lb. ....2½  
Tomatoes, cr. ....1.35  
Turnips, doz. ....35  
Watercress, doz. ....35@40

## FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.50@1.75  
Greenings .....1.85  
Jonathan .....1.80@2.25  
King David .....1.75@2.00  
W. W. Pearmain .....1.50  
Spitzenberg .....2.25@2.75  
Y. Newton .....1.75@1.85  
Avocados, doz. ....10.00@12.00  
Bananas, lb. ....5  
Pears, Winter Nellis .....3.00  
Persimmons, lb. ....7@10  
Pomegranates, ½ bx .....1.75

## CITRUS

Lemons, 3.50@5.00; juice .....3.00  
Grapefruit .....3.00@3.25  
Limes, basket .....1.25  
Oranges—Navels, bx .....5.00@5.25  
Tangerines, lb. ....8

## DRIED FRUITS

These are not prices to producers but  
prices made by wholesalers to retailers.  
(25-lb. bx., faced, 50s, ½c less.) Apples,  
evaporated, 50s, 16; extra ch., 16½;  
apricots, ch., 18; extra ch., 18½; fy., 19;  
pears, 13; peaches, ch., 12; fy., 12½;  
peeled, 15; citron, 30 lb.; lemon peel, 25;  
orange peel, 25; prunes, 20-30s, 17;  
40s, 13½; 40-50s, 12½; 50-60s, 11½; 60-70s,  
11; 70-80c, 10½; 90-100s, 9½.  
Figs—Bulk, 25 lb. bx., blk. \$2.75, wh.  
\$2.75; Calimyrna, 10 lb. bx., \$2.25.

## NUTS

Almonds—Not growers' prices but prices  
of wholesaler to retailer.  
I. X. L. ....24  
N. P. U. ....23  
Nonp. ....26  
Hickory Nuts, lb. ....10  
Peanuts, raw .....16  
Pecans, lb. ....19  
Walnuts—Cal. Walnut Growers' Associ-  
ation named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20

No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size  
as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

## HONEY

Prices of wholesaler to retailer:

Extr. W. W., lb. ....20  
Comb, W. W. case .....5.00  
Light Amber, case .....4.75

## RICE

Wholesale quotations:

Cal. ....7.50  
Broken .....5.60@6.00

## BEANS

These are prices made by wholesaler to  
retailer.

Lady Washington .....13.0p  
Limas .....13.00  
Pinks .....8.75  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....13.00  
Blackeyes .....10.00  
Tepary .....9.00@10.00  
Lentils .....25.00

## HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.

carlots:  
Tame Oats .....28.00@30.00  
Volunteer Oat .....18.00@20.00  
Wheat .....25.00@28.00  
Barley .....27.00@30.00  
Alfalfa .....25.00@29.00

The Alfalfa Growers Association of  
Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where  
the \$1.50 freight rate applies, and \$29.00  
f. o. b. where the \$2.50 freight rate ap-  
plies.

## GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.

Alfalfa Meal .....2.10  
Alfalfa Molasses .....2.20  
Barley, Rolled .....3.35  
Barley, Recleaned Whole .....3.40  
Barley Hulled .....4.00  
Beet Pulp .....2.05  
Bran, (Light) 65 lb. sk. ....1.95  
Cocoanut Meal .....3.60  
Cottonseed Meal .....3.50  
Corn, Yellow .....4.45  
Corn, White .....4.55  
Corn, Cracked .....4.50  
Corn, Egyptian .....3.95  
Corn Feed Meal .....4.55  
Mixed Feed (80 lb. sacks) .....2.12½  
Milo, Maize, Field Run .....3.50  
Oat Chop .....1.90  
Oats, White .....3.60  
Oats, Rolled White .....3.65  
Oats Hulled .....4.75  
Oats Rolled Chicken Groats .....4.85  
Oats Eastern Red .....3.60  
Oatmeal .....3.75  
Red Dog .....2.65  
Rye .....4.10  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Buckwheat .....5.00@5.10  
Canada Peas .....6.40@6.50  
Charcoal, 50 lb. sk. ....3.40@3.50  
Clam Shell .....70@95  
Grit Granite .....75@85  
Hemp .....5.50@5.60  
Oyster Shell .....1.35@1.45  
Red Millet .....4.65@4.75  
Sunflower Seed .....5.15@5.25  
Soya Bean Meal .....3.50@3.60  
Scratch Feed .....3.90@4.00  
Scratch Gritless .....4.10@4.20  
Vetch .....5.10@5.20  
Rice Bran, ton .....40.00  
Middlings, ton .....45.00  
Rice Polish, ton .....49.00

## San Francisco Markets

San Francisco, Jan. 29, 1918.

## BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:

Two-pound squares, parchment wrap-  
per, ½c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.

Dairy Exchange quotations, lb.:

Fresh extras .....53  
Dairy Exch. quotations past week and  
year ago:  
Jan. 22 23 24 25 26 28  
'18 54½ 55 55 53½ 53½ 53  
'17 38 37 37 37 37½ ..  
Rets. wk. ending Jan. 28, 447,800 lbs.

## CHEESE

Dairy Exchange quotations:

Cal. Flats, 25½. Y. Am. ....26½@27½  
Ore. Young Am. ....27  
Jack cheese, full cream .....26@27  
Half skim .....14@17

## EGGS

Extra .....60  
Selected Pullets .....56  
Dairy Exch. quotations past week and  
year ago:  
Jan. 22 23 24 25 26 28  
'18 67 66 65 57 58 60  
'17 36 33½ 32½ 32 32½ ..  
Rets. wk. ending Jan. 28, 13,435 cases.

## POULTRY

We quote from producers, lb.:

Hens, large .....30@31  
Broilers, 1-1½ lbs., 45; 1½-1½, 40; 1½-2,  
32@36; 2-3, 30@33.  
Roosters .....30@31  
Squabs, doz. ....4.00@5.00  
Ducks .....17@24  
Geese .....19@22  
Belgian Hares, live, lb. ....20@22  
Turkeys, dr., 32@35; live .....28@30

## LIVESTOCK

Prices gross weight:

Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾c  
more.  
Steers, lb., 9@10½; undesirable, 6@8;  
cows and heifers, 7@8½; undesirable, 4@  
6; calves, 7½@10.  
Hogs—Hard grain-fed, weighing 100 to

140 lbs., 14½@14½; 140 to 175 lbs., 15@  
15½; 175 to 300 lbs., 15½@15½; 300 to 400  
lbs., 15@15½.  
Sheep—Wethers, 12@12½; lambs, 13@  
15;

## POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbank .....1.40@1.75  
River .....1.25@1.60  
Sweets .....4.00@4.25  
Yakima Gems .....1.40@1.75

## ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....1.75@2.00  
Bermudas .....2.75@3.00  
Garlic, lb., new .....4@5

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. ....40@75  
Jerusalem, 20 lb. bx .....75  
Asparagus, lb. ....17½@20  
Beets, sk. ....1.50@1.60  
Beans, string, lb. ....25@30  
Limas .....12½@15  
Brussel Sprouts, lb. ....5@6  
Carrots, sk. ....75@1.25  
Celery, cr. ....1.75@2.50  
Cucumbers, Hothouse, sm. lug .....2.25@2.75  
Egg Plant, lb. ....8@11  
Lettuce, cr. ....75@1.50  
Parsnips, sk. ....1.00@1.25  
Peas, lb. ....12½@17½  
Peppers, Bell, lb., 12½@17½; Chili .....11  
Pumpkins, sk. ....85@1.00  
Rhubarb, bx. ....1.75@2.00  
Squash—Marrowfat, sk. ....85@1.00  
Cream, lug .....1.00@1.15  
Hubbard, sk. ....1.00@1.75  
Tomatoes, cr., 1.00@1.50; Mex. ....1.75@2.50  
Turnips, sk. ....75

## FRESH FRUITS

Apples—Spitzenburg, 1.25@2.65; Red  
1.00@1.25; Newton Pippins, 1.00@1.75;  
Jonathan, 1.60@1.90.  
Pears—Winter Nellis bx., 2.00@2.50;  
winter pears, 1.00@1.50.  
Strawberries, ch. ....7.00@9.00  
Avocado, doz. ....1.00@3.50  
Bananas, Hawaiian, lb. ....4@5  
Citrus Fruits—Lemons, bx. fy., 4.50@  
6.50; ch., 3.50@5.00; lemons, 1.25@2.50;  
grapefruit, 2.50@3.00; ch., 2.00@2.50; Im-  
perial, 3.50@4.00; Tulare seedless limes,  
half orange bx., 1.00@1.50. Oranges: Bx.,  
Navels, ch. to fy., 3.00@5.00; culls, 2.25  
@2.75; mandarin oranges, half orange bx.,  
2.00@3.00; tangerines, half bx., 2.00@3.00.

## DRIED FRUITS

Not producers' prices but prices of  
wholesaler to retailer.

Peaches—Unpeeled, lb. standard, 9½;  
choice, 9½; extra choice, 10; fancy, 11.  
Figs—In 50-pound boxes, per pound  
White Adriatic, standard, 8½; choice,  
9½; extra choice, 10½; fancy, 11½; Cal-  
myrna, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 13½;  
ch., 15; extra ch., 15½; fy., 16½; extra fy.,  
17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—60s to 90s, 6½ basis; 50s to  
60s, ¾c premium; 40s to 50s, 1½ prem-  
ium.  
Apples—In 50-pound boxes, lb.: Fancy  
15½; ex. ch., 14½; ch., 14½.  
Pears—Bulk basis, lb.: Fancy, 10½;  
ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Steady. Loose muscatels, 9@  
9½; ch. to fy. seeded, 9½@10½; seedless,  
9@10½; London layers, 1.80.

## NUTS

Almonds—Cal. Almond Growers' Exch.  
Gross prices: Nonpareils, 21½; I. X. L.,  
19½; Ne Plus, 18½; Drakes, 16; hard  
shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts .....11@12½  
Pecans, lb. ....19@20  
Pine Nuts .....19@20

## HONEY

To the trade, per lb.: Comb, fy. white  
alfalfa, 20; do sage, 21; light amber, al-  
falfa, 18; do sage, 19; amber, 15@18.

## BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....12.60@12.75  
Bayous .....8.50@8.75  
Small Whites .....12.00@12.25  
Mexican Reds .....8.50@8.75  
Large Whites .....11.25@11.50  
Blackeyes .....8.00@8.25  
Pinks .....7.70@7.80  
Red Kidney .....13.00  
Cranberry .....11.75@12.00

## RICE

California rice, new crop, cleaned, 100  
pound head-rice, 6.45@6.65; brewers, 5.10;  
screenings, 5.37½.  
Rough rice, 100 lbs., 3.50@3.60 to grow-  
ers at shipping points.

## HAY

Under date of January 26, Scott, Mag-  
ner & Miller says:

Receipts past week, 1954 tons. Cars  
have been a trifle easier and more hay  
is arriving for general requirements, gov-  
ernment receipts being very small, show-  
ing that the orders placed by the quar-  
termaster's department are practically filled.  
The market in this city has been easy,  
with trade light, in the country districts,  
better, and much hay has moved to sec-  
tions south of San Francisco where they  
must have it to feed cattle.

Fancy Wheat Hay  
(light 5 wire bale) .....29.00@30.00  
No. 1 Wheat or Wheat and  
Oat Hay .....26.00@28.00  
No. 2 Wheat or Wheat and  
Oat Hay .....23.00@25.00  
Choice Tame Oat Hay .....27.00@27.50  
Other Tame Oat Hay .....23.00@25.00  
Wild Oat Hay .....23.00@25.00  
Barley Hay .....24.00@26.00  
Alfalfa .....24.00@27.00  
Stock Hay .....20.00@22.00  
No. 1 Barley Straw .....60@90

## GRAIN

Grain Exchange prices, cti.  
Corn, Cal. Yellow, cwt. ....3.25@3.50  
W. Egyptian .....3.40@3.50  
Brown Egyptian .....3.20@3.25  
Barley, Feed and  
Brewing, cwt. ....2.87½@2.92½  
Milo .....3.20@3.25  
Oats, Red Seed .....3.10@3.25  
Feed .....2.75@3.00  
New Black .....3.25@3.50



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For Price and Descriptive Matter Address

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Rye, Utah ..... 4.00@4.25  
Wheat — Government prices: Common white hard, base price is \$3.50 per cental, or \$2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft wheat, base price 2 cents per bushel less, or \$2.08 per bushel; white club (including Sonora), \$2.06 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, 3 cents per bushel reduction; if 56 to 58 pounds, 6 cents per bushel less; if less than 56 pounds, grain becomes sample grade and sells on its merits up to within 1 cent per bushel of 56-lb. wheat. Sacked wheat 4 cents per bushel more, less tare for weight of sacks.

**FEEDSTUFFS**  
These prices applicable to San Francisco, with \$1.00 less at Sacramento and Stockton, are for cash at the mill in carload lots, and include sackage, with an additional rate of 50 cents per ton in less than carload lots.  
Wholesale prices per ton. Prices fixed by food administration as San Francisco price; Sacramento and Stockton \$1.00 less on carlots at mill door:  
Bran ..... 34.00@35.00  
Middlings ..... 41.50@42.50  
Mixed Feed ..... 37.00@38.00  
Shorts ..... 35.00@36.00  
**SEEDS**  
Prices in round lots, lb.:  
Millet, recleaned ..... 4 1/2 @ 5  
Alfalfa ..... 20 @ 21  
Flax ..... 6 @ 6 1/2  
Rape ..... 2 1/2 @ 3

**Citrus Fruit Market**  
Los Angeles, Jan. 30, 1918.  
It has been a week of uncertain weather and uncertain demands. There is a large quantity of fruit injured in transit which has somewhat affected the market, but some sales at long prices have been made as stock was strictly fancy. Lemons have shown prices ranging from less than freight to \$7.00.

**Shipments**  
Shipments of citrus fruits from California since November 1, 1917, Southern California: Oranges, 3079; lemons 709; total, 3788. Last season same date: Oranges, 4831; lemons, 1191; total, 6022. Central California: Oranges, 1865; lemons, 95; total, 1960. Last year, same date: 3938, oranges; lemons, 140; total, 4078. Northern California, this season: Oranges, 202; last year same date: 824.

**AT THE AUCTIONS**  
**January 23**  
New York: No sale California fruit.  
Cleveland: 2 cars Nav. 1 Lem. Nav. \$2.55-\$4.40, Lem., Val. \$2.30-\$3.00, Seedlings \$3.65, Grapefruit \$1.00, Lem. \$1.50-\$3.35.  
Boston: 2 cars. Nav. \$2.45-\$2.55.  
Cincinnati: 1 car. Lem. \$5.15-\$5.45.  
St. Louis: 1 Val. 1 Lem. Val. \$2.70-\$3.25, Lem. \$2.60-\$4.15.  
**January 24**  
New York: 1 Nav. 2 Lem. Nav. \$3.80-\$4.55, Lem. \$2.00-\$3.65.  
Boston: 3 cars. Nav. \$3.55-\$3.80, Lem. \$2.40-\$3.00.  
**January 25**  
New York: 1 Nav. 2 Lem. Nav. \$3.80, Lem. \$2.70-\$3.00.  
Boston: 2 cars. Nav. \$2.40-\$4.65.  
Cleveland: 3 cars. Nav. \$1.90-\$5.00.  
St. Louis: 1 Nav. 1 Lem. Nav. \$2.85-\$1.05, Lem. \$3.90-\$4.70.  
**January 28**  
New York: 1 Val 1 Lem. Val. \$2.95-\$3.15, Lem. \$4.20-\$4.75.  
Pittsburgh: 2 cars. Nav. \$2.50-\$3.20; Val. \$2.90-\$4.15, Lem. \$5.20-\$6.00.  
Cincinnati: 1 car badly frozen lemons average 60 to 80 cents.  
\$5.80, Lem. \$2.15-\$4.35.  
Philadelphia: 1 Val. \$1.55-\$2.95.

**MARKET NOTES**  
Reports from the San Francisco market are in effect that bean-growers and bean handlers are confronted by a gloomy situation. However, federal purchasers say the situation is not so serious as it was and buying throughout the entire country is showing slightly more life. The federal buyers say: "The government continues to buy its supplies at fair and reasonable price. Quite recently the navy department commandeered at lot of lima beans in Southern California, for which it paid a price somewhere under the market, but one which showed the growers a considerable profit." In connection with this we may add that the federal agent who made the statement added: "With regard to both quality and condition, California beans are better than can be secured anywhere else in the world. They are finding a market and shipments are being made on account of this splendid condition and quality."  
Hawaiian bananas are arriving at San Francisco in large quantities.  
Petaluma is shipping a carload of eggs to New York City every day this week, and it is expected some days will see two cars going forward. In spite of these heavy shipments prices were forced down; in one day nearly eight cents per dozen, this because of heavy slump in the East.  
**WEATHER CONDITIONS**  
San Francisco, Cal., Jan. 28, 1918  
Rainfall.....Temp.  
Wk. Season. Norm. Max. Min.  
Eureka ..... .02 10.66 23.27 54 34  
Red Bluff ..... .00 3.78 13.44 72 31  
Sacramento ..... .00 2.15 10.15 84 36  
San Francisco ..... .00 2.36 11.89 64 44  
San Jose ..... .00 1.79 8.81 70 25  
Fresno ..... .00 .96 4.92 68 34  
San Luis Obispo ..... .00 1.25 9.73 78 32  
Los Angeles ..... .00 .59 7.41 72 44  
San Diego ..... 1.12 1.77 4.84 70 42

**FEED AND FEEDERS**  
Continued from Page 147  
ing assembled does hereby petition the United States food administration for California to take such steps as may insure the lowering of rates on shipments of feed to cattle and cattle

to feed, so that this may inure to the benefit of the producer and thereby greatly enhance the possibility of relief in the present situation and a continuance of his efforts to produce in the future.

**IRRIGATION SYSTEMS**  
We recently saw an immense picture of irrigation 100 years ago and now. The old pueblo zanja of Los Angeles was the source of the water used as shown by the ancient method. The modern method is to take the water from the ground by



Bee-keepers can obtain from the Apiary Department of the Diamond Match Company the finest quality of Bee-Keepers Supplies at fair prices. The Apiary Department, which is in charge of experienced Bee-Keepers, is one of the largest of its kind in the United States and maintains a constant excellence of product and unsurpassed service.  
Write for Catalogue and if a Beginner for Cottage Bee-Keeping, which will be promptly mailed free.

**THE DIAMOND MATCH CO.**  
APIARY DEPARTMENT  
CHICO, CALIFORNIA, U. S. A.

means of a pump and engine, thence to the irrigating ditches either through pipes or open flow. The picture hardly did justice to the idea, but it faithfully reproduces the conditions as they were over a hundred years ago and as they are now employed in Southern California. The original picture may be seen at the Smith-Booth-Usher Company Building in Los Angeles.

**BUY A HOG AND HELP WIN THE WAR**  
**FIFTH SEMI-ANNUAL SALE**  
OF  
**Kings' County Poland China Breeders Association**  
WEDNESDAY, FEBRUARY 20th, 1918, at  
**Kings County Fair Grounds, Hanford, Cal.**  
**80 HEAD Registered Poland Chinas**  
Bred Sows and Gilts to be sold without reserve from the best herds in Kings County. Come and make a bid on the Red Cross Sow donated by Mr. M. Bassett. She is one of his very best Sows.  
**CONSIGNORS:**  
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J. M. Berstein  
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For Catalog or Information Write  
**F. D. Ross** **Hanford, Cal.**

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and what kind of service does it give you while it is running?

These are the questions:  
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You can't throw money away faster than to buy that kind of a belt—besides, when it fails to do your work the need may be greatest. Buy a Test Special belt in the first place—it lasts for years. Write us.

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{ Steam Engine.....	{ Driven Pulley.....
{ Gas Engine.....	

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Straight.....  
Perpendicular.....  
Width of Belt..... Ply.....  
Distance between centers of Pulleys.....  
Rev. per minute of Driving Pulley.....  
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My dealer's name.....  
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YOU wouldn't feed a baby on "vittles" that satisfy a grown-up—would you? Then—why take chances, why experiment with the feed you give your baby chicks? Start 'em off right—that's the main thing. Give them Sperry Gritless Baby Chick Feed. Because—they thrive on it. It gives them a firm foundation on which to build *your* future profits.

It is clean, uniform, properly granulated and proportioned for the delicate organs of the baby chick. It contains the exact food values and constituents Nature provided for this purpose.

That's why thousands of chicken raisers are enthusiastic about it. They have proved that chicks fed—from the very start—on Sperry Baby Chick Feed develop into sturdy, healthy chickens.

Our booklet, "*Makes Hens Happy*," explains how you can prove this to yourself—tells how to increase your poultry profits. Send for it today—it's free.

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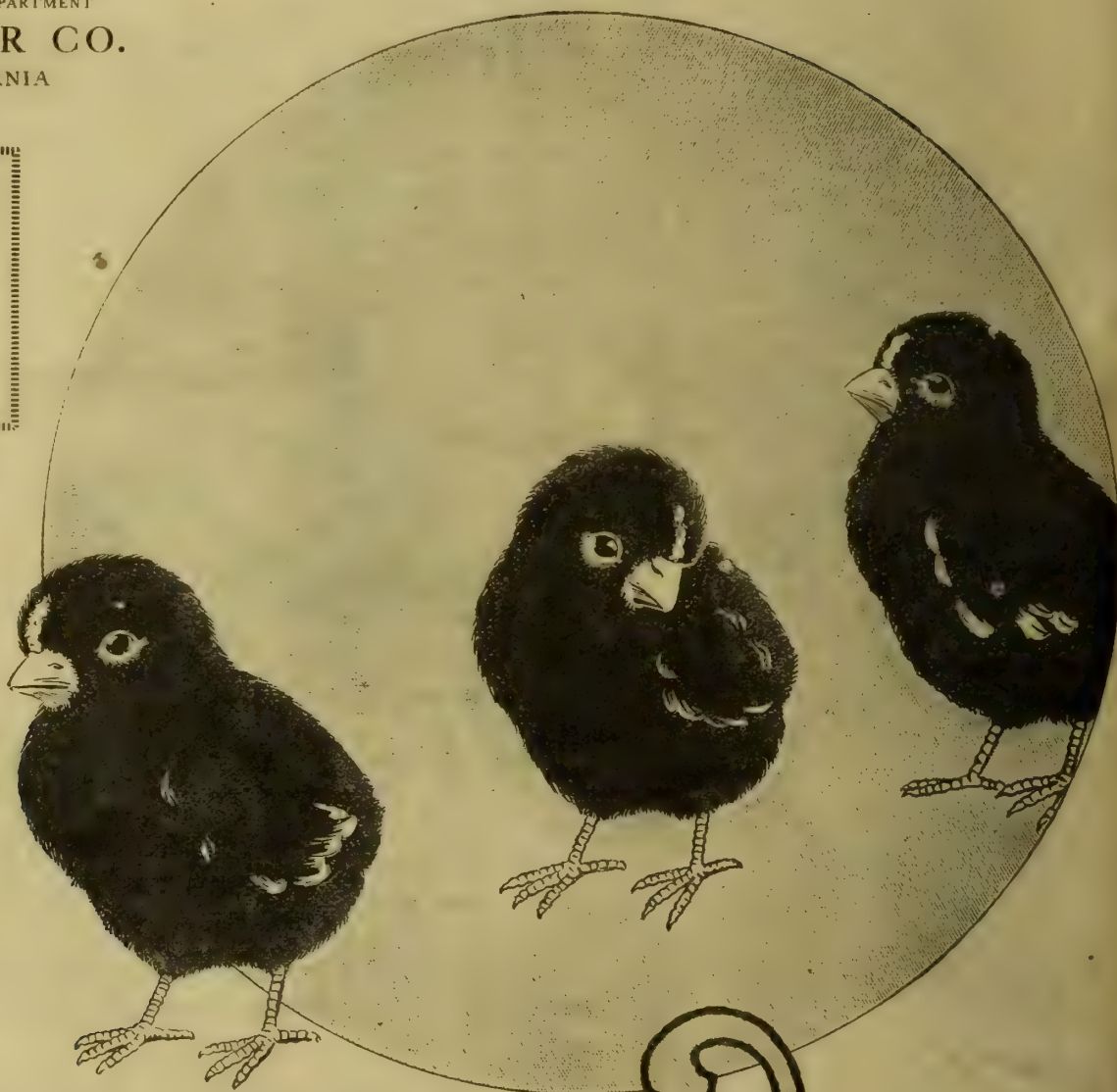
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booklet on feeding baby chicks.

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# CALIFORNIA CULTIVATOR

**THE LIVESTOCK** *Combined* **CALIFORNIA**  
*and DAIRY JOURNAL* *with* **CULTIVATOR**

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

February 9, 1918

SAN FRANCISCO



Irrigation, Good Insurance





## New Harvest Economy and Profit

**W**ESTERN farmers, always on the watch for improved equipment to save time and money in getting the crops off the fields, are paying a lot of attention to **Deering Harvester-Threshers** these days. Many of them have bought and are using these efficient machines. Their success and enthusiasm means a big advance in rapid harvesting this fall.

Modern grain handling means harvesting and threshing in one operation, turning the threshing expense into clear profit, doing away with the big threshing bill and burden, saving time and long-drawn-out labor.

The **Deering Harvester-Thresher** is a Western necessity. Get acquainted with it. The **Deering** cuts a 9-foot swath, harvests 15 to 18 acres per day, and threshes clean as any thresher. Requires 8, 10, or 12 horses, and one or two men, depending on attachment used. In most cases, an International kerosene tractor can be used to best advantage.

The **Deering** has proved that it is designed and built right in every particular—strong and lasting, simple, of light draft. It can be used as a stationary thresher, too, by adding cylinder and beater pulleys, which are supplied at extra cost. A 10-h. p. engine does the work. Capacity 30 to 50 bushels of wheat per hour. Write us for an interesting folder on the **Deering Harvester-Thresher**.

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It contains special chemicals. **Kilmol** fumes not only asphyxiate the squirrel or gopher, but eat away their lung tissues. Even should the animal reach fresh air, he can't survive. No other exterminator is as effective as **Kilmol**. That's why **Kilmol** costs a little more—but economy in labor warrants the advanced price. For best result use prepared waste balls saturated with **Kilmol**.

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With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a 40 inch log in five minutes. Write us today.

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# California Cultivator

Vol. L, No. 6

LOS ANGELES: February 9, 1918

One Dollar Yearly

## May Be a Crop for Waste Lands

Castor Bean Crop Still Discussed and it Appears That the State Will Produce Some for Federal Use. Not a Crop for Small Farmers but Planted in a Large Way May Help to Meet the Nation's Need

**T**HE Cultivator has been accused of being pessimistic as to castor beans being a profitable crop under California conditions, and until this week we have been unable to get any definite information as to government desires in this matter. Now it appears there is a demand for the oil in excess of present supply. Oklahoma and other states will plant largely, and the price suggested as one which will prevail for the coming crop is \$3.50 per bushel of 46 pounds, this to the contractor. The contractor is to sublet

beans on by means of horses. Care was exercised to keep a good thick layer of plants under the horses feet; the yield was from 1200 to 1400 pounds to the acre."

The Globe Milling Company of Los Angeles, which has for sometime been expressing quantities of oil from soy beans, may turn its attention to castor beans. We have asked as to contracts, and have the following:

"Regarding castor beans: The variety which is grown wild in this section seems to present interesting possibilities. We hope in the very near future to be able to demonstrate whether they can be pressed for oil

b. nearest railroad point to point of production. Government will furnish seed at cost, plus transportation charges, to be paid for in cash or out of first sales to the government as the contractor desires. Payments by government will be made on delivery."

"The above quotation is from a circular from the signal officer of the war department. We have a wire under date of the 14th from the war department saying that the government is contracting with responsible planters for growing castor beans. It is desired to plant approximately 5000 acres in Southern California, and is

er Mills of Butte County as having cultural information which would be of value to those contemplating growing castor beans, we wrote him and received his answer in effect that he had not seen the articles in question and knew nothing regarding the present campaign. He adds: "The only dope I have on this topic is that which I obtained about five years ago. At that time I had a brother living in Ventura County who wrote me and sent samples of castor beans which were growing in a semi-wild condition in a certain portion of that county. These apparently had been planted ten to 15 years previous, but the property owner finding no remunerative market for this crop had let them grow wild. My brother said he could obtain many tons of these beans merely for cost of harvesting, and was of the opinion that he could put a crew of men in gathering these beans and find a fair sale for them. But upon looking into the matter very carefully I found that although he would only be out the cost of harvesting that he would not be able to sell the crop for more than cost of gathering and in consequence advised him to let them alone.

"It is possible that the war may make a good market for castor oil during the next two years, but certainly no one could plant castor beans now and get much tonnage prior to the termination of hostilities, at which time the market doubtless would become sluggish as before."

If castor oil is needed in the operation of airplanes or any other equipment employed by the government, Californians may well consider it advisable to grow them, even if at a loss, but the fund of misinformation which has been given through the daily press is so extensive that the Cultivator feels it wise to warn producers of some of the factors to be considered, such as cost of harvesting, cost of removing stumps, possible limited demand and the further fact that castor beans are not a food staple.

On good California irrigated lands from an income standpoint staple foods would surely prove more profitable, but that our growers may have all the knowledge we can secure for them on the castor bean question we add a few cultural suggestions in addition to those contained in the Cultivator of January 26.

Prof. Rolfs of the Florida experiment station suggests that land preparation should be same as for other field crops; rows six feet apart, hills four feet apart in the rows. In planting drop two or three seeds to the hill. When six inches tall remove all but the most vigorous plant. The Indian bean runs about 1200 to the pound; the Kansas variety doubles this number. A bushel of the Indian variety will plant about nine acres. A corn planter is used. Ordinary cultivation of southern field crops is given in Oklahoma.

We may add that instructions give



Scene at the National Orange Show, San Bernardino

Bowers and Flowers and Beauties as they have appeared at other shows. We are assured this year's National Orange show will be the equal of any. The dates are February 20-28. This is Riverside's exhibit, 1917. This year she comes with a great battleship.

on contracts calling for around \$3.00 to the producer, for clean seed delivered to railroad. Henry S. Gane who assures us that he has contract for 5000 acres to be grown in California says that the yield is from 1200 to 1400 pounds per acre. Mr. Gane writes:

"About 40 years ago nearly 150 acres were grown in the Carpinteria Valley of Santa Barbara County. It was grown on what is now Lima bean land. The castor beans were planted about May 1 and the crop harvested in November or December. The plants were cut by hand with a sort of long handled hook, a man cutting two acres a day. The cut plants were then thrown in large piles and allowed to dry the same as Lima beans are. When dried a large canvas about 40 feet square was used to thresh the

without removing the outer hulls.

"There is a big demand for this oil for lubricating purposes. We are of the opinion that \$100 a ton for the beans hulled, delivered at the crushing plant, would be a conservative value to figure on. It might be possible to pay more, but we would not care to contract now for next fall's delivery."

We wrote Commissioner Hecke and from him have a copy of a letter which he had received from the state council of defense, signed by Vice Chairman Naftzger. From this letter we quote:

"I have to say that the government is prepared through the war department:

"To enter into contracts for the production of castor beans, guaranteeing \$3.50 per bushel of 46 pounds f. o.

not advisable to contract for less than 100 acres.

"Now, we have been endeavoring to get some information upon this subject and the indications now are that we are likely to find that castor beans ripen slowly and irregularly and that they are gathered by hand in the course of several pickings over the same ground.

"If this be true, it would be rather expensive, in view of the fact that labor is likely to be very difficult to get. However, we expect to have more information upon this subject."

Mr. Hecke adds: "It would appear to me, from the figures given in the enclosed letter, that castor bean culture would hardly be profitable in this state."

Sacramento Valley papers, having referred to Horticultural Commission-



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If one man is to farm more land than ever before, he must also cultivate more. With the Moline-Universal Tractor one man cultivates two rows at a time and does it better, quicker and cheaper than with horses.

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## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

## HAUSER PACKING COMPANY

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different distances; some preferring three by four feet, others, four by four, others five by five.

Again from a circular compiled by Mr. Gane we quote:

"A specially constructed machine is necessary for threshing the varieties which do not 'pop' by mere drying in the sun. In a homemade machine used in Oklahoma cylinders or rollers were so adjusted that the pods, when fed in a thin stream between the rollers, were crushed and the beans dropped out uninjured. A fanning mill is used to remove the hulls, chaff and

dirt from the beans, which are then sacked and stored ready for market.

"Estimates of yield vary greatly. In Oklahoma the average yield of the 'popper' variety is said to be 8-10 bushels per acre; that of the India variety, about 20 bushels per acre. Yields of 30-40 bushels per acre have been reported from California, Florida and Texas."

Under the contracts which the government contractors are making it is stipulated that the imported seed is to be used in planting. This seed will be furnished by the government, price not yet announced.

## Freak Weather

No Two California Winters Alike

No Two California Summers Different.

**C**ALIFORNIA optimists are chasing through weather reports of past years, hoping to find rainfall records, or rather drouth records, of the early part of the season which may encourage the hope that the latter part of the season may afford us a fullness of wetness.

Pessimists, on the other hand, are looking through the records expecting to show proof that we are doomed to a dry season. Both are succeeding, for California has had sufficient variety of seasons to enable us to prove almost anything. We are not certain, but we think it was Van Dyke who stated that California could be depended upon to show that it had no two summers different and no two winters alike.

When the season is over we will know as to its wetness. Meantime we are hoping the optimist will be the winner.

A bit of information is to be found in looking through old reports of the department of agriculture, and while engaged in this interesting pastime, we found, in the report of 1878, an article by Eugene W. Hilgard as to agriculture and soils of California. It covers many pages and is wonderfully interesting. From that portion of it touching upon the diversity of local climates up and down the state, upon its two seasons, and more particularly upon its rainfall, we quote:

When, moreover, it is understood that in a large portion of the region under consideration the average annual rainfall barely comes up to the minimum of ten inches estimated to be necessary for the growth of a crop, while in most of the remaining portion the average does not exceed (except locally) twice and a half that minimum, it will be readily conceived that the California farmer watches the rain-guage with the same feelings with which the Egyptian regards the nilometer; and as the latter counts his seasons by Nile-inundations, so the California farmer reckons his time by "seasons" instead of calendar years. It is of comparatively little interest to him how much rain has fallen from January to January, as exhibited in the usual form of meteorological tables; for the 40 inches of rainfall so shown as the aggregate of two consecutive years may have been so distributed as to leave him "high and dry" during one growing season, with an excess for the other.

In order to exhibit the "fat" and "lean" years of California, it is necessary to tabulate or plot the rainfall by "seasons"; and after some unsuccessful attempts to connect their recurrence with the 11 year period of the sun spots, a discussion of the observations of 28 years now on record, Prof. G. F. Becker of

the University of California seems to show the existence of a 13 year period between consecutive minima, the second minimum within the time of the American occupation having occurred in the season of 1876-77, with a rainfall of only 10 inches at San Francisco, where the average is 23½ inches; while in some portions of the upper San Joaquin Valley, as at Bakersfield, as well as in the region of the Mojave Desert, there was not rainfall enough to start vegetation at all, and no ground not irrigated was broken that season. In the autumn of 1877 much of that region resembled a well-swept barn floor. There is an Indian tradition that at one time toward the end of summer water was only found in pools in the Sacramento River, so little snow having fallen the previous winter that all streams ceased to flow. From information kindly furnished me by H. H. Bancroft, Esq., of San Francisco, it appears that in the records of the early explorers of California, the year 1805 is known as the "hungry year," the drouth having been extraordinarily severe; and nearly the same account is given of the year 1817. It will be observed that these dates indicate a period of 12 years between themselves, and that the interval from the latter date to 1877—for those drouth years as yet no date have been found—is also divisible by the same number. It is quite intelligible that as the result of several concurrent causes the period may vary between such limits as 12 and 13.

It has been suggested that a study of the growth rings of the ancient Redwoods and Sequoias might lead to the recognition of the laws governing the seasons through past ages, it being probable that the dry years would be represented by a smaller growth than the wet ones. Unfortunately, it appears that in California, as well as in other countries where there is no well defined season of rest for vegetation, the formation of several growth rings within the year is of frequent occurrence, so that even the estimate of the age of the great trees is thereby materially vitiated. I have seen on the face of a redwood plank eight feet wide groups of three, seven, 12 and even 30 closely contiguous rings, occupying spaces but little larger than the intervals between two rings elsewhere, making it appear clearly that the unravelling of their record requires more than mere counting and measuring. But whatever may be the precise period in general, the fact that the average rainfall in so many regions nearly approaches the minimum required for any crop, gives exceptional importance to the minor or annual as well as local variations of its amount and distribution. It thus happens that in each region experience has shown a certain average ex-



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12 " ..... 9.50 " " "	20 " ..... 15.00 " " "
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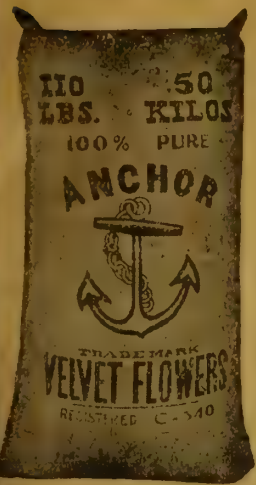
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Packed in barrels and double sacks are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVENING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

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624 California St., San Francisco, Cal.

## "THE BOSS" TREE PROTECTOR



Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

### Prices

Per 1000

10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

Yucca Manufacturing Co.  
1300 Willow Street, Los Angeles, Cal.

## Leonard Coates Nursery Co.

MORGANHILL, CAL.

New Catalogue is now ready. It will pay you to send for it. Our stock is unsurpassed.

## Fertilizer

Make your Ranch and Orchard produce this limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

Rogers Brown & Co.

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Highest Quality of  
Citrus and Deciduous Nursery Stock

at the Lowest Prices

SUSAN'S NURSERY

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## Budded Avocados

varieties endorsed by the Avocado Association; especially the FUERTE, best of all. May we quote you prices?

West India Gardens,

O. Popenoe, Mgr., Altadena, Calif.

## Orangethorpe Nurseries

Eureka Walnut Trees

RUFUS PORTER

FULLERTON, CAL., Pac. Phone 195W

When writing advertisers, mention the Cultivator.

pectation of successes and failures of unirrigated crops, which is taken into account by the farmer in his calculations. It is not, of course, easy to obtain perfectly impartial figures in this regard, the more as each valley may differ from its neighbor, and differences of crops, cultivation and soil come in for a large share of influence. Besides, the shortness of rainfall during one "season" may be materially supplemented and fair crops made when the preceding season has been one of abundant rain, it being popularly said that there is a chance for a crop whenever the moisture rising from below and that coming from above have met. This naturally happens much sooner in land kept tilled than in such as has been left to crack open, giving free access to the hot dry air of summer. In such soil in the San Joaquin Plains no perceptible moisture is to be found at depths of three and even four feet at the end of the dry season, while in deeply tilled land it may be reached at 12 or 15 inches. Again, a slow and gentle falling of a small amount of water will do as much good as a larger amount falling violently and largely draining into the streams; while, on the other hand, a few days' prevalence of a dry "norther" may completely wipe out the effect of spring showers that otherwise would have turned the scale in favor of the producer.

### BOASTING UNDULY

The spirit of the little kid who says; "My orange's better'n yourn" persists when he grows older, and the commendable California spirit which boosts for its own community is worthy further encouragement providing the boosting is within reason. The boosting for ourselves and the tearing down of "just over the line there" has been fairly well eradicated from California real estate methods, but we still will brag as to our own little community, and in the matter of oranges each little community is doing the best and each had the least injury and each has "the biggest" orange of all. The following is from the Riverside Press:

There has been quite a lively discussion regarding returns received on the first few cars of navels shipped from the Riverside district this season; and without undertaking to settle some of the points raised or indulging in any "invidious comparisons," the Press at least can safely say that the prices have been such as to bring joy to the heart of the grower who has any fruit. One private shipper in a confidential letter to the Press takes up another phase of the matter and discusses the tendency to report f. o. b. sales in such a way as to mislead the grower as to the amount of money he is to receive. In part he says:

I find a number of shippers, including the exchange, mislead the grower and mislead everybody in connection with the average business on prices. I have it on what would appear to be reasonable authority that today the exchange is quoting 64s and 80s at \$2.25, 96s at \$2.50, 100s at \$2.75, 126s at \$3.50, 150s and smaller \$4.25.

Now, this is the general quotations, yet they tell their growers that they are selling for \$4.25 f. o. b. You take the average car and figure it out size for size, and they are getting around \$3.00 to \$3.25 f. o. b. The first car I shipped I sold for \$3.75 f. o. b. straight. Figuring it out on the exchange prices, I would have received \$3.40 f. o. b.

It is misleading the growers to tell them that they are selling at \$4.25. It

## TEAGUE QUALITY CITRUS TREES

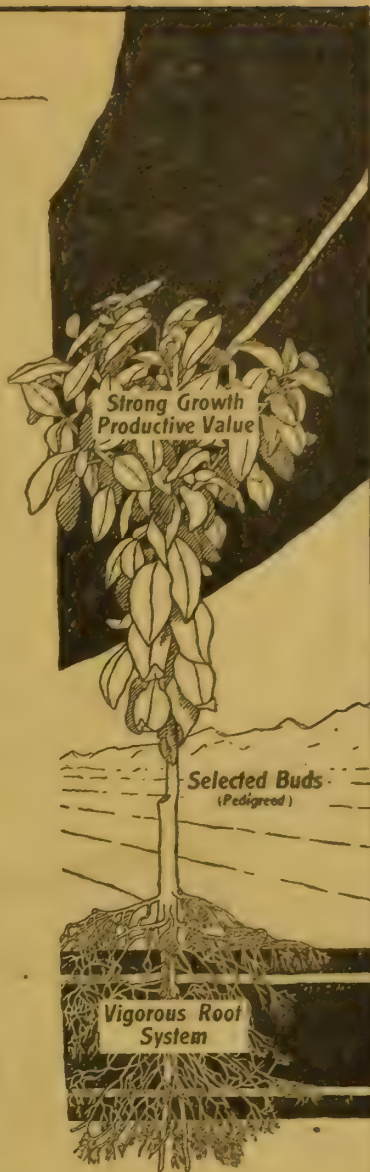
AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

## The R. M. Teague Citrus Nurseries

Box 67, SAN DIMAS CALIFORNIA

FOUNDED IN 1889  
AT IT 29 YEARS



## Persimmon Trees

Get Genuine Varieties Selected  
by Persimmon Specialist

Write for Suggestions

R. S. Fujii

"Experimental Farms in Tokyo and Shizuoka, Japan"

1918 Francisco St.

Berkeley, Cal.

Write  
for  
Catalog  
and  
Prices



## Citrus Trees

Budded on Sweet and Sour Orange Seedlings Those budded on sour seedlings are best adapted to the heavier soils. Let us know the location of your land, character of soil and irrigation facilities, and we will be glad to advise you. All trees delivered to customers in the best possible condition. You will find our catalogue of deciduous, citrus and ornamental trees and roses very helpful.

Fresno Nursery Co.

Address Dept. A

Fresno, Cal.

## Yamamoto Citrus Nursery

San Marino Violet Garden

Huntington Drive, San Marino, Cal.

Wholesale and Retail 250,000 Orange, Lemon and Grapefruit Trees 1, 2 and 3 years old. Florida Sour Seedling Stock—300,000 trees one year old. Trees Planted and Guaranteed on Contract.

Phone Alhambra 731-W

Mail Address: R. F. D. 1, Box 666

San Gabriel, Cal.

## First Class Sour Orange Seed Bed Stock

Grown at Laguna Bell Acres. Stock one year old. 200,000, 8 to 30 inches high, absolutely free from scale. Also first class Rhubarb for sale.

Locke Nurseries, C. H. Harle, Mgr., 27 N. Olive St., Alhambra, Cal.





"There is a Rex  
for every orchard  
trouble."

REX SPRAY materials are  
the result of 20 years of  
scientific investigation into  
orchard troubles and 20  
years of continuous experi-  
ence in perfecting products  
best suited for their control.

REX LIME AND SULPHUR SOLUTION  
— REX ARSENATE OF LEAD — REX  
BORDEAUX MIXTURE — REX MIS-  
CIBLE OILS — REX SOLUBLE OILS —  
REX MISCIBLE DISTILLATE — REX  
SOLUBLE DISTILLATE — REX SUL-  
PHUR PASTE — REX DISINFECTANTS —  
REX SOAPS — REX OIL EMULSIFIER,  
ETC.

WRITE FOR BULLETINS—to

**REX SPRAY CO**

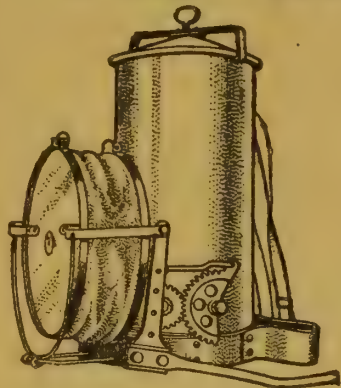
BENICIA, CAL.

**— REX SPRAYS — The Standard for 20 years**

## THE RED SPIDER

"That Insidious Pest"

can be easily and cheaply controlled  
by using the



**American Beauty  
Dust Sprayer**

—Ask Us How—

and how to destroy Aphids, Codling  
moth, Cabbage worms, Corn ear-  
worm, Tomato worm.

**MILDEW**

**Squirrels and Gophers**

Get it at your dealers or send us \$16.00 and we will send you one on a  
week's free trial.

Send for Booklet C

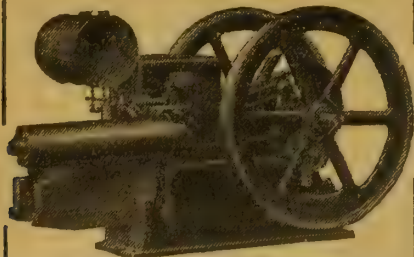
**THE CALIFORNIA SPRAYER CO.**

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### WITTE IRRIGATING ENGINES



**Kerosene - Distillate  
2 to 22 H. P**

Pump your water with a WITTE. All you need  
is a centrifugal and my Special Model Kerosene-  
Distillate Engine. I can lay your engine down  
at least cost. Save the middleman's profit—Get  
your engine NOW, while prices are still low.  
Have reliable power for all your work. Made in  
standard sizes—3, 5, 8, 12, 16 and 22  
H. P. Battery or magneto equipment. I am in a  
position to offer you the best prices and make  
immediate shipment. 90-Day Trial—5-Year  
Signed Guarantee. Largest exclusive engine fac-  
tory in the world selling direct to user. Cash,  
Payments, Bank Deposit or No Money Down.  
Suit yourself as to terms. Don't make a deal  
until you have investigated my offer.—Ed. H.  
Witte, President.

**WITTE ENGINE WORKS**

3101 Oakland Ave., Kansas City, Mo.  
3101 Empire Bldg., Pittsburgh, Pa.

Every ball of the YUBA  
TREAD kept at work at  
food production helps as  
much as a hundred balls  
flung into German trenches.

Write for the Catalog

**Yuba  
Manufacturing  
Co.**

Dept. B19

433 California St.

San Francisco

is misleading the public in general  
when they say they are selling at  
\$4.25. While it is true, they are not  
telling but half the truth, and it is go-  
ing to cause a good many sore spots  
when people go to get their money.

The same sort of criticism has been  
made to the Press by growers in Riv-  
erside. They have claimed that some  
shippers, in the exchange and outside,  
give out figures of the highest price  
received for fruit in a given car. No  
mention is made of the number of  
boxes which sold at that price; and in  
some instances the fact was that this  
top notch price was for only a few  
boxes of selected fruit. The total net  
return from the car and therefore the  
average price per box was no more or  
even less than that received by other  
shippers who refrain from the prac-

tice of slipping in a few boxes of more  
than "extra fancy" fruit. Of course  
these exceptionally high sales have a  
certain advertising value, but the fair  
and sound method of figuring returns  
is a basis that takes into account all  
grades and all sizes and gives the to-  
tal returns for the car.

The Press is very sure that what-  
ever criticism is coming regarding any  
of these methods of "padding the re-  
turns" should extend to private ship-  
pers as well as the exchange; and  
there is certainly difference of policy  
among various associations within the  
exchange. In the long run, however,  
the best policy is one of frankness  
that gives the grower information re-  
garding his returns on all the fruit he  
delivered at one time and not on a few  
boxes only of some particular size or  
extra fancy pack.

## Raisin Association Saved

**Strenuous Fight for New Contracts With Raisin Growers Successful and  
85 per cent of Raisin Acreage Now with Association.**



ERE it is officially, after a  
hard campaign extending  
over months:

February 1, 1918.

Fresno Clearing House Asso-  
ciation, Fresno, Cal.

Gentlemen—The crop contracts de-  
livered herewith to you, together with  
those previously delivered, number  
6980. They represent 131,530 acres of  
Muscats, Thompson, Sultan, Malaga  
and Feherzagos vineyard. This  
acreage is well over the 125,000 acre  
minimum required by our agreement  
with the signers, and you will, there-  
fore, please see that the contracts  
are delivered to the proper parties as  
soon as practicable. Yours very  
truly.

California Associated Raisin Company.  
by Wylie M. Giffen, President.

In addition here is a personal state-  
ment by President Giffen:

"It is, of course, with great pleasure  
that we announce the success of our  
campaign for 125,000 acres. The fig-  
ure given out by the Clearing House  
Association was 131,530. Our experi-  
ence in other campaigns has been that  
many contracts came in after the date  
set for closing, and undoubtedly the  
amount will be increased by these  
contracts within the next few days.  
We will not go into figures at this  
time, as our records are not complete,  
but undoubtedly we have better than  
85 per cent of all the raisins grown  
in California.

"Unquestionably we now have the  
strongest control we have ever had,  
and under the new contract the start-  
ing point is the lowest, as we lose  
nothing by the transfer of places, and  
every contract we now get adds some-  
thing to the percentage, whereas, un-  
der the old contract the starting point  
was the highest, as we continually  
lost more through the transfer of  
places than we were able to gain  
through our solicitors.

**Contracts Uniform**

"Even those of us who have been  
in close touch with this campaign  
hardly realize how much has been ac-  
complished. Our thoughts have been  
centered alone on the 125,000 acres,  
and though that is important it is not  
nearly all that has been accomplished.  
There are in the state of California  
10,000 growers scattered all the way  
from Marysville to San Diego. Of this  
number approximately 8500 have sign-  
ed our contract, and there has not  
been a single one in that whole num-  
ber that has a more favorable contract  
than every other one. We have un-  
doubtedly lost a few contracts by  
what some people think were arbi-  
trary methods, but it is a great source  
of satisfaction, and we believe, too,

has been a great source of strength in  
the campaign to be able to say to ev-  
ery one that there were no favors be-  
ing shown in the taking of these con-  
tracts. Not a single option has been  
stricken out, not a single contract has  
been taken that did not run with the  
land and not a single promise has  
been made to any individual that is  
contrary to the general policy that ap-  
plies to all.

**Stock is Increased**

"The contract itself guarantees to  
the stockholders eight per cent earn-  
ing on the money actually invested  
for the next six years, and by a sim-  
ple clause the stock is automatically  
increased from \$1,040,000 to \$2,500,000  
or \$3,000,000 in the next three or four  
years, and this in such a way that  
some stock goes into the hands of ev-  
ery grower without his feeling the  
burden at all. This increased stock  
will enable us to provide adequate  
packing facilities to handle the crop  
without the congestion and delay that  
has prevailed in the years past, and  
at the same time make to the growers  
who own it an earning of eight per  
cent.

"Our own solicitors are entitled to  
special commendation for the thor-  
oughness with which they have done  
their work, but the success of the  
campaign can only be attributed to the  
fine public spirit and excellent team  
work by which they have been sup-  
ported. In fact, an organization of  
this kind can only be a success when  
supported by the confidence of the  
public, and the moment it ceases to  
merit such support will be the begin-  
ning of the end. From this point of  
view this has been the most success-  
ful campaign that we have had, and  
without a single exception every  
civic organization, the ladies' clubs,  
the growers' committees and literally  
thousands of individual workers from  
every calling of life have done their  
part. So many have done noteworthy  
work that it would be impossible to  
pick out for honorable mention any in-  
dividual. Even the packers, in their  
frantic attempts to prevent our suc-  
cess, have furnished the spice which  
is invaluable to a campaign of this  
kind.

**Beginning of New Life**

"So much has been done, and the  
spirit has been so fine that it is im-  
possible for us to express our appre-  
ciation, and so that the people who  
have worked may not have worked in  
vain we here and now dedicate our  
lives anew to the task that lies before  
us. Yesterday it was the ambition of



our lives to bring this campaign to a successful conclusion, but already the ambition of yesterday is but the stepping stone for the ambition of today—to make the success of yesterday but the beginning of a new and better life for the Associated Raisin Company. No organization has ever been paid a finer tribute than has been paid to us in the last few weeks by the universal support given to our campaign—yesterday the crowning ambition of our lives was to succeed—today it is a higher and better ambition, which is to be worthy of your confidence."

#### EAT MILO

We are beginning to envy the chickens and the stock that eat California grown milo in their daily ration. It is wonderfully fine eating. We know, for we have been eating milo muffins, milo hot cakes, milo mush, and we are going to try some more.

The trying of this new feature of California diet was made possible by the sending to this office of home grown milo from Orland, Glenn County, presumably Glenn grown milo. Macy's Poultry Farm, of which W. H. Macy is proprietor, ground the milo. Regarding the method Mr. Macy writes:

"We have attached a bolter to our feed mill and make good palatable meal out of any of the sorghum grains. I have our county farm adviser a sample and he has taken it with him over the country. Already as many as 20 different parties have brought us a sack or more of grain to be made into meal for them. Many have come for small quantities, and for hot cakes, muffins, hot corn bread and mush, nearly all report it excellent. One man came in 15 miles and got a sack ground. His neighbor, having tried it, was here for a sack yesterday.

You will receive a small package of this meal which is made from the most common of these grains here, the yellow milo maize. Try it in muffins or old fashioned corn bread with one-third white flour."

The milo sent by Mr. Macy was liberal enough so that it has been tried by several of the Cultivator force, and all unite in saying: "It's good."

The milling people have been trying to get us to grow more good yellow and white corn that we may have freshly ground corn meal in our California diet. We hope more of the corn will be grown, but if it is not, let us all consider eating more of our home grown grains. Try milo. Many a farm has the grinder. Do as Mr. Macy has done, put on the bolter, have your meal fresh, and eat something that is exceptionally good. Send us in the recipes for things made of milo.

We may add that we are informed by a large milling concern that milo meal and milo flour will soon be on the market.

#### PRUNING GRAPES

Every grower of grapes in California should avail himself of the ability of Professor Bioletti of the state university. His life work has been with vineyards and for many years with the vineyards of California. He has written many works upon the vine and its handling. His latest is Circular 191 which is being mailed out by the state university. It is "Pruning the Seedless Grape." To California vineyardists it is invaluable.

#### AGAIN IN ACTION

Farm Adviser Essig, recently appointed to Ventura County, writes that the old officers are automatically reinstated and the county farm bureau is again in action and directors' meetings are already being held.

Committees at once placed in action are: On Projects: J. D. Culbertson,

George D. Reid, Wilbur Stiles; Labor: James N. Proctor, L. C. Ramsauer, J. H. Hitch; New Crops: George Willett, J. N. Thille, Thomas McCormick; Meetings: E. W. Gerry, Clarence Hawley, A. Everett; farm bureau monthly editorial committee: Henry H. Neel, L. C. Ramsauer, J. H. Hitch.

#### IMPERIAL AGRICULTURAL ASSEMBLY

The third annual agricultural assembly of Imperial County will be held at Holtville, February 14. This is one of the most important agricultural events of the Imperial Valley.

At last year's assembly the people of Imperial gave a barbecue at which hundreds were fed Imperial produced beef. We understand there will be no barbecue this year but the ladies of Holtville will serve mid-day dinner. The Holtville band will render musical selections and there will be other musical numbers. There will be an agricultural movie showing work of the department of agriculture in aiding farmers.

Other features of the program are:

Morning Session, 10 O'clock

Early Vegetables, by Thomas Elliott, commercial agent Wells Fargo; Drainage Problems in Imperial Valley, with pictures, by Prof. W. W. Weir, of soils department, University of California; Rural Planning, by Prof. Wal-

ter E. Packard, assistant state leader of farm advisers.

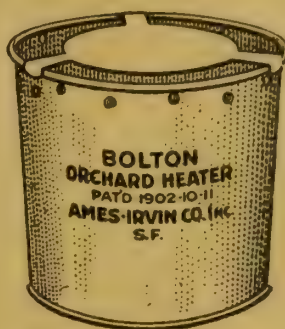
Afternoon Session, 1:30

Food Products and Their Conservation; Pima Cotton Cultural Methods; Selection of Profitable Dairy Cows, by Prof. Van Norman; Marketing Problems, by Harris Weinstein, state market director; Milk Producers Association, by J. M. Henderson, Jr., presi-

dent Northern California Milk Producers' Association; to be followed by plans for organization in Imperial Valley.

Women's Section, 10 A. M.

Practical Talk on Food Conservation, by Miss Lillian D. Clark, state leader of home demonstration agents, and Mrs. Della J. Morris, emergency district home demonstration agent.



## Prepare For Frosts!

You can't afford to risk the loss of your crop by frost. The nation needs every pound of fruit and vegetables you can produce. Insure a full crop by installing the

#### "Bolton" Orchard Heater

Most effective means of frost prevention offered to the grower. Cheapest to operate. Quickly started. Distributes heat evenly. Burns long time on single filling of fuel oil. Lasts for years.

#### SEND FOR BOOKLET "C"

Tells you how to save your crops from frost. Filled with valuable information for the grower.

## Ames-Irvin Company

Irrigation Pipe, Orchard Heaters, etc.

8th and Irwin

San Francisco, Cal.



Stark City Roots—Heavy, Wide-spreading, Full of Vitality

## Plant Stark City Roots For Quality Fruits

Success with fruit growing is well started when you have chosen the best strains of fruits, and have planted strong, sturdy trees, with healthy, vigorous root systems.

None but the best varieties of fruits are propagated at Stark City, and none but the best trees and plants that are grown here are offered for sale—the rest are burned. This assures you the highest grade nursery stock.

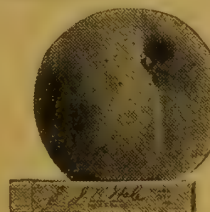
#### Read What Growers Say:

Stark City trees are grown in an ideal climate and a rare soil of highland limestone and grit formation. These natural advantages, plus our scientific methods of propagation and training, produce trees with exceptionally heavy, wide-spreading roots, thick, strong bodies and well formed tops. Such trees quickly establish themselves, when transplanted, make unusually rapid growth and reach the fruiting stage earlier than ordinary stock.

"All of your trees and vines are the best I ever planted."—John Rapelye, New York.

"My trees are making rapid growth, proving the result of setting your well-grown, well-rooted stock."—J. M. Carter, Texas.

"I have received nursery stock of various kinds from you and invariably found it well-rooted and EXTRA VIGOROUS GROWTH."—L. R. Johnson, Professor of Horticulture, Missouri.

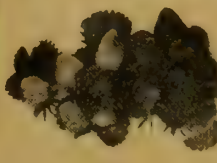
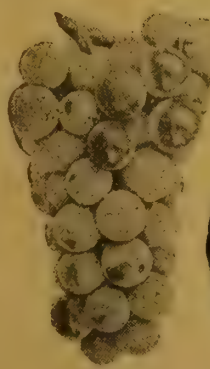


#### Stark City Trees are Guaranteed

—to be true to name—to live and make satisfactory growth—to reach you in prime condition. This guarantee is the first-hand responsibility of this Nursery. We sell direct—no agents or other middlemen represent us. This also assures you getting the genuine, original Stark City Trees.

## Wm P. Stark Nurseries Stark City Mo.

Address and name both the same



#### Get These Books

##### "Inside Facts on Profitable Fruit Growing"

A complete instruction book on successful fruit growing. Tells how to prepare the ground, plant, prune, spray, cultivate, etc. "Send me 12 copies for my foremen in charge of my various orchards," writes Senator H. M. Dunlap, Ill. "Just the advice and information I've been hunting for but knew not where to find."—Ivan White, Kans.

##### "How to Beautify Your Home Grounds."

Shows how to lay out your home grounds, how to plant and care for ornamentals, etc. "While I receive many more expensive books, yet none in which the subject is treated as interestingly and practically, as you have done in your book."—W. S. Forbes, Mass.

## Catalog FREE

It outlines the principles and methods of successful fruit growing. Describes and illustrates the best fruits—color, quality, ripening season, hardiness, growing habits. Tells which are best varieties for your section, planting distances, etc. Apples, pears, peaches, plums, quince, cherries, grapes, bush fruits, everbearing strawberries. Also choicest ornamental shrubs, roses, shade trees. Write, or mail this coupon.

To William P. Stark Nurseries, Box 62, Stark City, Mo.  
Please send books as checked: I am interested in planting:  
1918 Catalog Free ☐ For Big Markets ☐  
"Inside Facts" ☐ For Local Markets ☐  
(10c enclosed)  
How to Beautify Your Home Grounds ☐ For Home Use ☐  
(10c enclosed)  
Approximate Number of  
Trees ..... Plants .....  
Name .....  
Address .....  
(Give County, and Street, or R.F.D. No.)





## Ornamental and Fruit Trees

We have for sale this season a magnificent stock of Fruit and Ornamental Trees, Climbing Plants, Shrubs, Palms and Roses.

Write for prices on Cherry, Walnut, Citrus and Olive Trees, and Resistant Grape Vines.

Send for Illustrated Catalog and Price List.

**California Nursery Co.**  
Niles, California.

P. O. Box 406

### FRUIT TREES

FRENCH, IMPERIAL and SUGAR PRUNES on Myro., almond and apricot roots; CHERRIES, ALMONDS, BARTLETT PEARS and a full assortment of Fruit and Nut Trees, Plants and Vines.

Catalog and Price-Lists free upon request.



### SHADE TREES

EUROPEAN SYCAMORE, AMERICAN SYCAMORE, TEXAS UMBRELLA, TULIP TREE, HAWTHORNS, PALMS, PEPPERS and ACACIAS and a

most complete stock of Deciduous and Evergreen Trees and Shrubs, Roses, Cannas, etc.

**Crow's Nurseries, Gilroy, California**

RIGHT NOW

## NITROGEN

is a soil necessity to insure the setting of fruit and the production of an abundant crop.

### Nitrate of Soda

supplies this necessity at a minimum cost  
Mention crops interested in when writing for free information and literature.

**Nitrate Agencies Co.,** 321 Stimson Bldg. W. S. Sparr, Agent Los Angeles, Cal.

Corys

## THORNLESS Blackberry

Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

**Ekstein Nurseries**

Modesto

California

## Krogh Manufacturing Company

206 No. Los Angeles St.  
Los Angeles, Cal.

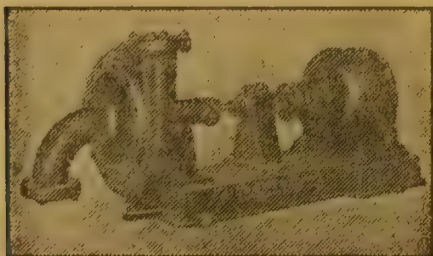
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**No End Thrust Possible**  
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Krogh Direct Motor Driven Pump



## Preparation and Care of Hot Beds

The hot bed should always be placed facing the south where it will receive sun all day, and in a sheltered spot if possible. One should be able to get to it from all sides, for convenience in giving care. Of the two types of hot beds, the raised and banked kind is better for wet locations, since it is not so likely to be flooded with water. Otherwise, dig a pit deep enough to bring seed bed to ground level. The hot bed should be started as early in January as possible, and only fresh and somewhat strawy horse manure is suitable for it. Pile the manure compactly near the bed and supply it with sufficient water to insure strong heating. When the latter is accomplished restack the material, getting the outside well mixed with the interior. When hot the second time, spread in the bed layer upon layer until finally it is from 12 to 15 inches deep, the more strawy portions at the bottom. Be sure to pack the material firmly and evenly as it is put in; the edges and corners especially. When this is done put on an even layer of good garden soil, mixed with leaf mold or well rotted manure, about four inches deep. Then put on the sash, first inserting a soil thermometer, or a dairy thermometer may be used instead. Make this test when the sun is not shining upon sash. In a few days, the temperature will fall to 90 degrees, and the bed may then be planted as usual.

After sowing the seeds, one has to exercise care to prevent the temperature from rising above 70 degrees or falling below 50 degrees. This is accomplished by allowing an opening along the top ends of the sash to carry off any excess heat. This requires careful attention every day, the sash being lowered somewhat every afternoon (if warm), and closed each

night to retain the warmth. Some advise always leaving a small chink at the upper end of one sash to do away with any possible injury to the plants from too close air.

The proper care of a hot bed requires considerable attention and good judgment, but if the venture is successful it pays well. When the small plants of tomatoes, pepper or egg plant seem well established they will do better on warm days if given plenty of air. That will make them more stocky and hardy. When of sufficient size they should be transplanted to develop better root system and a greater vigor, to prepare them for setting out in the open.

Be careful not to over water,—a common fault in caring for a hot bed. That would make the plants exceedingly liable to disease, and so soft as to make them almost worthless. Watering should be done in the morning, as a rule. If necessary to water at night, the water should have the chill taken off. On the coldest nights the heat would be conserved by throwing some sort of cover over the sashes; the glass radiates the heat rapidly after sunset.

Some sow seeds in the hot beds in rows; we advocate broadcasting as more economical of space and better for our purposes.

When the time comes for transplanting the plants from the hot bed to flats, they should be hardened off in the hot bed for a few days, by exposure to the air, and the amount of water given should be lessened to toughen them. After plants are transplanted and hardened off they should again be protected by glass or oiled cloth covering from rain and wind. C. F. Palmer, Supervisor of Agricultural Department, Los Angeles City Schools.

## Cutting Flowers

Written for California Cultivator By Ernest Braunton



IF ONE were to ask me which I preferred, flowers in the house, or flowers in the garden, I could have but one answer. They would remain in the garden, and there is no indecision possible. I am not extremely fond of flowers in a vase; not that they are not beautiful, not that they are altogether out of place, yet I do not like their associations; or rather the lack of proper associations.

But another phase of the matter here enters. There is no doubt but flowers brighten any room except it be overful of grossly gaudy articles and objects, and then, strange to say, they act as a neutralizer and subdue and simplify the contents of the room as a whole, being the only natural and really beautiful object (perhaps) present. Thus they are never quite out of place in the house except too many or too many colors are used. So we will admit that cut flowers are always admissible if number and colors be well balanced and harmonious.

Comes then another consideration. The garden should be so full of flowers that those taken into the house will never be missed. A garden may have too many flowers for the size of it, but it would have to be very crowded indeed before such an impression would strongly appeal to the casual observer. But let us grow such an abundance of flowers that any quantity plucked for the house would not

rob the garden of anything needed therein. This plan or procedure will not necessitate any considerable expense for we will grow plenty of good common sorts that cost but little outlay in money or time in care.

And now, as the old-fashioned parson was want to say, we come to our fourthly (and let us hope the last?) Do not some plants, as well as some gardens, have too many flowers? Before cutting, give the garden a good "look over;" see if there is not a part, or a plant or plants that have too many flowers. If so, and we take some of them we thereby benefit the garden as a whole. Really, the plant that is literally a mass of flowers is more or less of a monstrosity and is seldom as beautiful as one where many flowers nestle down in settings of appropriate green foliage. For too many flowers, like hope deferred, "maketh the heart sick." Wealth of bloom is not always a wealth of beauty. For it is not quantity alone that gives you great joy; there must be quality. As a group of precious stones needs an appropriate setting (though one alone may require none) so do jewels in flowers need surrounding masses of appropriate foliage. Also please remember that some plants require to be systematically and continuously robbed of flowers or the latter will very quickly pass into seeds and the plant will cease to bloom and put forth its whole effort in perfecting



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This season when hay will be worth big money how can you be sure of the alfalfa seed you use?

The answer is easy:

To get a heavy stand that yields extra-tonnage cuttings, plant Morse's Seed.

If your soil and moisture conditions are favorable, you can depend on this seed for a satisfying, big-profit stand.

Morse Alfalfa Seeds are of every standard variety. Each is government approved for purity. Each has passed a severe germination test at our seed testing station.

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is a big tonnage variety—not a freak—not an experiment. Long-lived, steady-yielding, quality-proved. Produces heavily in all climates and altitudes. "Leaves" abundantly—hence is rich in food value.

Now then—The supply of Morse's Extra Recleaned Alfalfa and other varieties is not overly large this year. Prices will advance. Get your order in now. Write for prices today.

C. C. MORSE & CO.

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# MORSE'S Alfalfa

its seeds. For in the latter lies its only chance of reproduction, toward which the supreme effort is aimed.

### Tinning Tree Trunks

Where small hollows occur in tree trunks and the strength is not thereby impaired it is not necessary to fill same. All rotting and dead tissue should be removed and the interior thoroughly sprayed or painted with something that will kill any insects therein, arrest decay, and if possible cover with a solid coat every inch of exposed surface. A metal plate, preferably of zinc, may then be fitted into the opening against a ledge or lip cut around the edge of opening, and a quarter-inch wide. This should be cut out of the solid wood and must be deep enough so that the edges of the metal sheet will be inside the cambium layer or inner bark or the edges of the zinc will be rolled back as the cambium grows. When the plate is well fitted into place nail thickly all around with galvanized or coppered nails. Then paint the metal with a good paint that will last. If job is well done the cambium will cover the nail-heads in one year and the opening is sealed forever. For long openings, use several sheets, lapping like shingles.

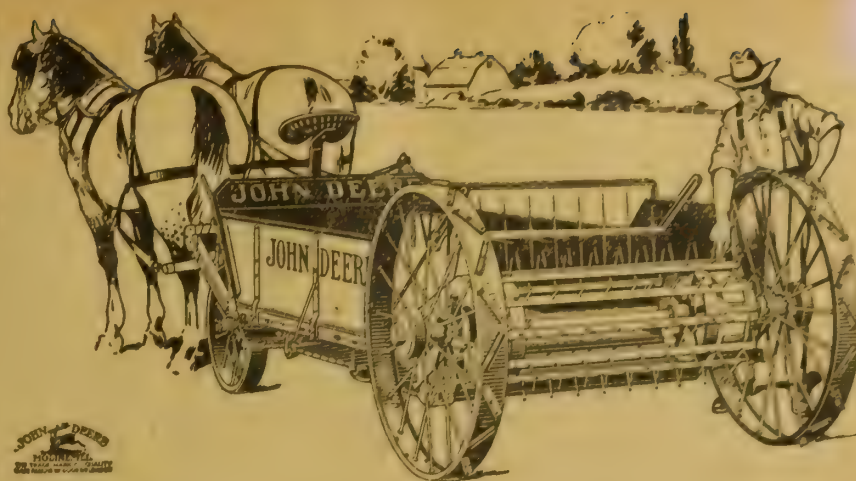
### Most Beautiful Eucalypt

Eucalypts are not, as a rule, chosen for their ornamental value, and even those that are may not be considered beautiful by the possessor, that is attractive to a point in advance of the average tree. But do we have species of eucalypts that have strong claims to beauty? Well, we grow at least one species locally that is in strong demand with florists, who use the sprays because of their ornamental value. Whether or not that is sufficient, proof I will not say, for to me the tree is strikingly attractive, almost curious in its departure from the type of ordinary eucalypts. How hardy it is I do not know but I have never seen a plant harmed by frost in a range from San Diego to Santa Barbara. Its leaves are round as a coin; its color is not any shade of green for the leaf surface is covered with a bloom or powder that is almost milk-white. Its name is Eucalyptus pulverulenta and it should be called the powdered eucalypt.

### The Evergreen Wistaria

This vine is in every respect an evergreen wistaria although the botanist calls it Millettia megasperma because of slight structural differences, mainly in the seed pod. The flowers come in large heads or panicles of spikes a few inches long. The writer has heard of its being for sale at but three places in California; Niles, Modesto, and Morgan Hill. The color of the flowers is a rosy purple and these last longer than do the common wistaria flowers. The plants are not so robust in constitution as the common sorts and I have heard much complaint on this point, not alone from the layman but from professional nurserymen who have been unable to make grow more than one-half the plants purchased from the introducers. This description therefore carries with it no recommendation of purchase, but the plant is believed to be one of sterling worth after of blooming size as it is then past the danger size. In any event it is a rare and interesting plant.

System is an excellent servant but a terrible master, and we want to be able to lay aside or change the plan, however efficient as a general working principle, when something more important than plans or systems is to be considered.



"The beater on the axle construction saves dollars for me in time, labor and cost of upkeep."—An excerpt from a user's letter.

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Mounting the beater on the axle is the keynote of this better spreader. With this exclusive construction there follows distinctive savings that can be gained in no other way—advantages that mean more years of service, lower cost of maintenance, greater ease of handling and better quality of work.

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**EASY TO LOAD** from the front to the rear—only 38 inches to the top of the box. You see where every forkful goes. A boy can load it.

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**THE BEATER DRIVE** is durable and strong. It has the same principles and is as simple as the triple-gear horse power. Gears are enclosed in a dust-proof case. They run in an oil bath. No dust or dirt can reach them.

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half the castings on it necessary on other spreaders. No clutches or chains. Main working parts mounted on the rear axle. They can't get out of line, cause binding, heavy draft and breakage. **A BOY CAN OPERATE IT.** Tell him where to set the feed lever and he only needs to put the machine in and out of gear. That's all there is to it.

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## Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Gypsum

Where can I secure gypsum, and what is its cost? How much per acre will be required to kill alkali?—Subscriber, Stratford.

We think any dealer in fertilizers advertising in the Cultivator can supply you. The amount per acre to "kill alkali" depends. If the alkali is what is ordinarily termed white alkali,

no advantage is to be had from the application of gypsum. If however it is the carbonate of soda or black alkali, then gypsum applied changes the black to white and permits its leaching out of the soil through heavy rains or irrigation, and in this way corrects to a degree the alkaline conditions. As to whether this should be one or three tons, or even more, as is sometimes the case, per acre, depends upon the soil and degree of alkalinity.

### Cooperative Bean Selling

A San Joaquin Valley subscriber

asked information as to best opportunity to market his beans. We wrote to the California Lima Bean Growers' Association as to whether it had opened its membership roll to other than Lima growers, and Manager R. L. Churchill answers recommending that any bean grower in the San Joaquin Valley write to the Central California Bean Growers' Association at Stockton, through which organization he can probably handle his beans. He further adds:

"In reply to your inquiry as to whether our association is open to membership to other than Lima bean growers, will say that some three months ago we amended our articles of incorporation and by-laws so as to permit us to market other than Lima beans, and under this provision we are accepting into membership two local associations of growers in the San Fernando Valley, one at Garden

Grove and one in San Diego County, each of which will contain some members who will grow other varieties than Limas, to be marketed through our association. This will enable us to care for the requirements of some of our Eastern customers in other varieties of beans, particularly in the shipment of mixed cars. We shall probably confine our activities to Southern California, particularly in view of the recent organization in Central California. We have had a gratifying increase in membership during the past two months, amounting to about 60 per cent as compared with our 1917 membership, and we are anticipating further substantial gains before our 1918 pool closes in the spring."

### Corn Smut

Please tell me if there is a treatment to prevent smut in corn?—Subscriber, San Jose.

Smut of oats and corn is not benefited by any treatment of the seed. Neither is the disease so serious as is the wheat or oat smut. The only treatment is preventive, i. e., by destroying all the smut spores, which should have been done when first beginning to show on the grain or ears. This may be done to a lesser degree by burning the field of stalks which may afford lodgment for spores which were scattered some weeks or months ago.

### Persimmons

How many are the varieties of Japanese persimmons? What are most successful? Are there any commercially successful orchards in this state? What soils are best adapted to growing persimmons? Can they not be raised with less water than most fruits?—Subscriber, Exeter.

There are scores of varieties. As to the most successful there is such diversity of opinion that we hesitate to select them. There are commercially successful orchards in the state. Presumably the demand will be rather limited, although with the curing of the paste, which we understand is a great commercial proposition in Japan, it is possible there may be great development in the industry here. There must be sufficient moisture at the roots, and with the fruit remaining on the trees until late in the fall this condition must be maintained the entire season. The tree is hardy and will withstand serious drouth. For more explicit information would refer to an article in the California Cultivator of June 11, 1914, by J. W. Mills and a more general one in the Cultivator of January 28, 1915, by I. J. Condit of the state university. In that article are illustrations of the Savuroza and the Yeddo Ichi varieties. Other information as to persimmons may be had in United States Journal of Agriculture, Vol. 1, No. 8, March, 1914. This has to do with the processing of fruit. A new and most desirable variety was illustrated in the Cultivator, issue of December 22, 1917, page 630. Another variety we have tasted and know to be good is called the Whepley.

### Transplanting Sycamore

When may one transplant a sycamore tree and how large may they be safely reset?—Subscriber, Paso Robles.

We have taken even seedlings at end of first growing season from almost pure sand in the wash, this was planus occidentalis, and had them grow favorably. We have also taken husky stick, used for an alpenstock during part of a day's tramp, stuck it in the ground, and in three years had a tree nearly as large as the thigh. The sycamore grows readily from cuttings. We have also replanted the oriental plane in midsummer when in full growth. Ordinarily however, sycamores should be reset when dormant. In other words, at once, as to this season.

### Sweet Potatoes for Feed

Are sweet potatoes and tops good milk producing food for cow? Is it dangerous to feed either of these in very large amounts to horses?—Subscriber, Pomona.

In Henry's Feeds and Feeding Dodson of Louisiana is quoted as saying that he considers sweet potatoes the best root crop for hogs for fall and winter grazing. Connor of Florida

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## CHERRIES

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## PEACHES

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## NECTARINES

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## APPLES

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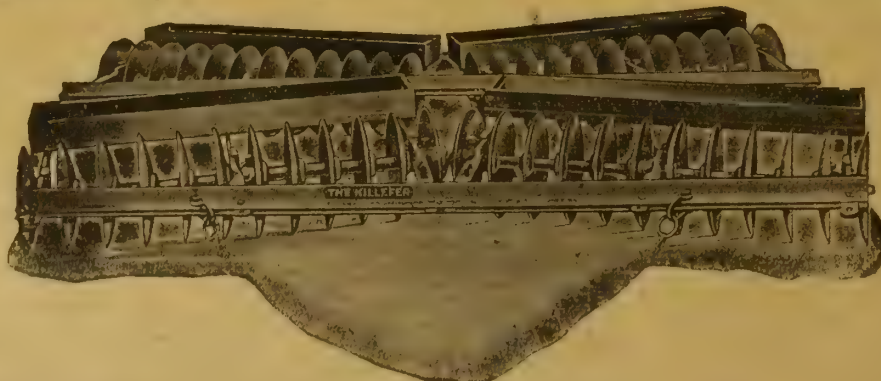
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says: "Sweet potatoes may successfully be substituted for half the corn in the ration of working horses; three pounds of sweet potatoes replacing one pound of corn." Another feeder found 100 pounds sweet potatoes as useful as 150 pounds of corn silage for dairy cows. While more valuable, sweet potatoes are also far more expensive to produce than corn silage. The vines, though difficult to gather because they trail and take root at short intervals, are often used in the green state for feed.

Vetch on Alfalfa

If vetch is planted with alfalfa will it fertilize or induce heavier growth, especially if it is disked in? How much should be sown per acre with barley, and where can seed be had?—Subscriber, Hickman.

We would prefer very much to have alfalfa seed used in connection with barley which might be grown for spring crop, but in fall the vetch could be sown and give good winter growth providing plenty of winter moisture is secured. Seed may be had of any seed house advertising in the Cultivator.

Ants in Apiary

Have a few stands of bees which are doing well, only ants are bothering them. Have hives on a stand and the legs in pails of water but the ants still get to the hive. Will bees eat ant paste?—Subscriber, Upland.

There is a difference of opinion as to the injury done by ants. However, they may be controlled by use of carbon bisulphide. Pour down the holes which should be plugged up with moist earth as soon as the application is made. Even gasoline or distillate or strong solution of cyanide are sometimes used with excellent results. The poison formula given in a recent issue of the Cultivator might prove as deadly to the bees as to the ants. Some prefer to make the application by using a steel bar and making a hole, say, a foot deep, and pouring the distillate or bisulphide in this hole and plugging.

Rats

Would like to know of successful ways of getting rid of rats, water rats, I think they are. — Subscriber, Dos Palos.

A good steel trap will accomplish the work most safely. There are rat poisons, however, but a trap made along the same line as the small ordinary five cent mouse trap, though much larger, is good. Also, with rat infestation it is always wise to clear out any old buildings or any place where rats can locate and breed, in other words, give the fox terrier and the big cat free chance at them, and it will aid materially in reducing the pest.

Shrinkage of Hay

An Inyo County subscriber inquires as to shrinkage in baled alfalfa. A serious loss was observed, in fact on a 400 ton shipment a shrinkage or difference of 15 tons between hay baler's weights and receiver's weights over railway scales was noted. That particular hay was reshipped however, and, of course, lost with the extra handling. The subscriber did not tell us how long an interval there was between baler's weighting and the final. We have asked the California Alfalfa Growers' Association as to observations in the matter of shrinkage and have reply from Manager Farrar: "Our experience in shrinkage of hay here has been that after baling it out of shocks in the field and storing it for six months there is a shrinkage of 200 or 300 pounds per ton." This is a much heavier loss than that suffered by the inquirer. It must be borne in mind however that length of time and other circumstances must be considered in making estimate of such loss.

Chestnuts

Would chestnuts do well in this locality? Would nurserymen handle chestnut trees or would it be all right to plant the nuts and grow seedlings? Does the tree shed its leaves?—Subscriber, Tulare.

The small sweet Eastern chestnut does not bear well in this state excepting in favored coast sections, but the large Italian or Spanish type has done well, though not bearing exceptionally

large crops. They make very ornamental, large growing tree. Some plant them as seedlings, but the grafted varieties are safer. They may be had for from 40 cents to a dollar each. The Japanese Mammoth, a small growing tree, bears earlier and produces very large nuts. Any nurseryman advertising in the Cultivator can supply you. The trees are deciduous.

Well for Cesspool

Adding to our former suggestion regarding the use of an abandoned well for a cesspool, the matter was submitted to the state board of health with the explanation that there were two wells, one to be used for a cesspool if it could be done without danger to the other. L. B. Mallory, assistant secretary, writes that owing to the liability of contamination it would be very unwise to make such disposal of the sewage.

Pruning Prunes

I have prune trees five years old which have never been pruned back. What is best method of handling these trees?—Subscriber Chino.

To condense five years pruning into one is impossible. It is most unfortunate that trees are allowed to go from planting time without the help which may be given by the pruner, for such trees have a habit of becoming top heavy, and the first full crop bends and breaks the tree, sometimes entirely ruining it. In the first three years of a prune tree's life it should be cut severely, simply building a foundation to carry the load of branch and fruit of later years. But this is no time for a preachment as to the five years of non-pruning. It is impossible to give very good advice in such a case without seeing the trees, for presumably many of the trees, if given a severe pruning which will give a fairly good tree for the future, would have taken off practically all this year's crop, which is a thing few orchardists care to do, so about all the long distance advice we can give is to cut back, so far as possible, some of the big strong growing leaders which will throw out strong summer growth and give opportunity another year of shaping tree so as to carry its future loads. Save this year's fruit as much as possible, bearing in mind that this will come on small fruit spurs along fruit bearing laterals.

Drying off Cow

Have a Jersey cow that gives about five quarts of milk a day six weeks before she becomes fresh, and I have some difficulty in getting her dry. Would you feed her well and milk her on through or would you dry her if possible four weeks before coming fresh? If you dry her how would you proceed?—Subscriber, Glendora.

There is difference of opinion as to "drying off" a cow. Many think that six weeks or two months rest should be given. Others boast of the continued production of the cow which milks up to calving time, then takes up her new duties apparently without injury. It depends largely upon the cow. When one wishes to dry cow off it is best, say, six weeks before calving, to not milk out clean for a few milkings, and then, if possible, drop to one milking a day. But some very persistent cows will not permit this.

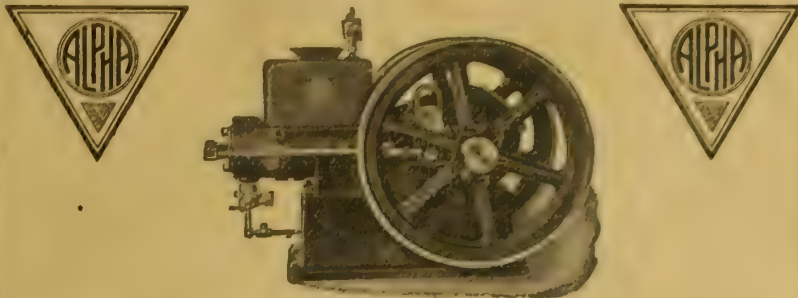
Loans Refused

A subscriber writes regarding inability to secure loan from the federal loan bank at Berkeley, enclosing with his statement letter from the secretary of the land bank in which he says that: "I have looked over the appraiser's report and find that he did not make a recommendation." Our subscriber writes us: "We have been told that this federal land bank would give to farmers cheap money and help them in producing more. We now find that the farmers who need help the most cannot secure a cent from this bank. I have a good well and irrigate from it and know that the appraiser sent here did not wish to help the farmers. He appeared to look at it from the standpoint of the money loaner."

The Cultivator appreciates the feeling of the subscriber, but it also understands the situation in which the management of the bank is placed.

War has come and complicated the financial situation, and funds which would have been used to loan to American farmers have been turned into other channels. Besides that, were the conditions normal, it must be

borne in mind that banking is strictly a business proposition. The federal land bank is not a branch of the government for paternalism, but under the act of congress it must be managed. Continued on Page 183



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Will the tractor you buy turn in a 10-foot circle (5-foot radius) pulling as strong on the short turns as on the straight away—and will it do that without straining one side or one wheel? That's of vital importance! Many tractors work well when pulling straight—it's on the turns that you will get good or poor service from your tractor.

The Bean TrackPULL Tractor is the only small orchard-and-vineyard tractor made that delivers full power on 10-foot turns and it turns without straining one side, pivoting, or doing anything else that a tractor shouldn't do.

This remarkable machine is built on patented FRONT-DRIVE principle—you steer with the single track which does all the pulling whichever way you go. You can turn it back down the same row (see illustration above) without lifting out the tools making as short a turn as with a team!

Absolutely no other tractor acts so like a team while doing three times as much, is so handy, so efficient, so staunch, and so protected against over-strain!

You'll want the TrackPULL eventually—go see it now. Send coupon at once for catalog, complete description, and name of nearest demonstrating agent.

Don't buy a tractor that does less. Don't do without one that does so much. Send the coupon now.

BEAN TrackPULL Tractor

With Invaluable Patented Front-Drive



Don't buy a tractor until you have mailed the coupon.

Bean Spray Pump Co. 1212 W. Julian St. San Jose, California 1131 No. Los Angeles St. Los Angeles Cal. Send me catalog and full information without obligation on my part. Name..... Street..... City..... County..... State..... No. of acres..... Kind of crops grown.....



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WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Frenos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

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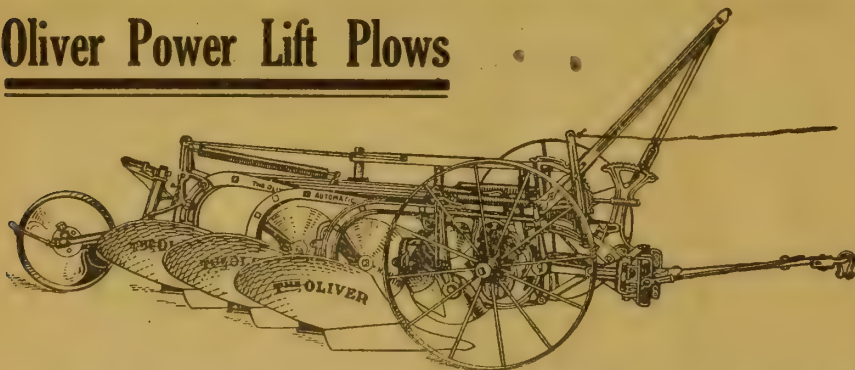
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503-A Market St.

San Francisco, Cal.



Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

## More About Foods

Graphic Statement Made by Member of Food Commission. Will Appeal to Every Loyal Citizen to Do His Utmost to Conserve and Produce



HIS statement was given out January 25 by the United States food administration: The food situation in Europe has become steadily more difficult and larger demands have now been made upon us than ever before. On January first we had already exported the 10,000,000 bushels of wheat which comprised our normal surplus from the last harvest. The latest cable from Lord Rhondda, who speaks on behalf of the wheat control of the French, English and Italian governments, needs no added word from me:

"Unless you are able to send the Allies at least 75,000,000 bushels of wheat over and above what you have exported up to January first, and in addition to the total exportable surplus from Canada, I cannot take the responsibility of assuring our people that there will be food enough to win the war. Imperative necessity compels me to cable you in this blunt way. No one knows better than I that the American people, regardless of national and individual sacrifice, have so far refused nothing that is needed for the war, but it now lies with America to decide whether or not the Allies in Europe shall have enough bread to hold out until the United States is able to throw its force into the field. I have not minced words because I am convinced that the American people, if they know the truth, will not hesitate to meet the emergency."

We have replied: "We will export every grain that the American people save from their normal consumption. We believe our people will not fail to meet the emergency."

In addition to this amount for the Allies, we must find 15,000,000 bushels for the Belgian relief, or these people whom we have supported all these three years will starve; and we must also furnish some 10,000,000 bushels for Cuba and other neutrals, upon whom we are dependent for other foods in return. We estimate the American people have saved as much as 30,000,000 bushels out of last harvest, and if we are to meet the increased demands we must rigidly reduce our wheat consumption to 30 per cent below normal until next harvest.

In addition to wheat, we are shipping large quantities of corn and other cereals with which to mix in their bread, but Europe must have a wheat foundation for the loaf just as ourselves.

In beef our pre-war exports to the Allies averaged less than 1,000,000 pounds per month. During the last two years we have averaged about 22,000,000 pounds per month. They are sending their boats to load an average of 70,000,000 pounds per month during the next three months. Our own Army apparently uses about 10,000,000 pounds per month more than normal to these same men. Our cattle have not increased. We can only provide these drafts upon us by reducing our consumption. As we eat more meat than we need to preserve health, this will do no harm. Our production averages roughly 650,000,000 pounds per month, and these demands represent a little over ten per cent of our consumption. Our own domestic beef consumption has increased from about 70 pounds per person per annum to about 80 pounds during the past five years. The public health has been

no better during this last period. If we could get back to our pre-war meat consumption we should solve our present problem. The meatless day has made it possible for us to maintain these exports for the present.

In pork products we exported to the Allies about 50,000,000 pounds monthly before the war. We have shipped them about 100,000,000 pounds per month during the past two years. During the next three months they are asking for over 150,000,000 pounds monthly. Our hogs have decreased since the war began. Our own consumption is far above our health necessities and we can easily save this amount. Our average monthly production of hog products is roughly 750,000,000 pounds. We need to export an increase over pre-war averages of 100,000,000 pounds, and, as our supplies are below normal, we need to save at least 20 per cent until such a time as our hog supply increases.

If the Cuban sugar crop yields as estimated, we will need to save from 200,000 to 400,000 tons of sugar from our normal consumption if the Allies are to be supplied—about ten per cent.

Not only the increased demand, but also the sharp and distressing reduction in rations amongst the Allies are evidence enough of the acute situation we must meet.

The president will tomorrow issue a program for food conservation. The program in many particulars is of necessity largely voluntary but in some particulars it can be enforced under the food bill. In any event no measure that has not the loyal support of the majority of our people can ever succeed. The results of voluntary conservation during the last six months abundantly prove the desire of the vast majority to make the sacrifice necessary to feed the Allies and our own soldiers. There is, however, a national risk that we fail to secure the necessary conservation through opposition of a minority disheartening the majority. We should like to have the authority to make the minority bear its share of the burden. The situation does not bear delay and we propose to do the best we can on a voluntary basis, plus what authority we do possess.

It would be easier for us to ask less than necessity demands. What we do ask are not large percentages, there is no privation in them. In any event we have no intention of exporting more than our savings, for we must and will protect the food supply of our own people. Therefore the fullness with which we can meet these demands is determined simply by our monthly saving. We have abundant other foods which we can substitute for the exports wanted and if we could only eliminate all waste and all unnecessary consumption it would solve the problem. A large number of our people are not in a position to reduce consumption. Their daily life is of necessity one of continuous economy and saving. The responsibility and the burden of these savings must, therefore, fall in a large degree upon those more fortunately situated. Those who have most must save most.

Under new food regulations, the Swiss people are allowed only a pound of sugar per month per person. The butter ration is one-fifth of a pound per month.



### COMPENSATION FOR USE OF TOOLS

The neighborly farmer is one of our country's greatest assets. Many a young farmer starting in has had great help in his shortage of capital because of ability to secure occasional use of tools or implements from a neighbor, and fortunately he is usually in a position to make return and show fullest appreciation for these favors.

Again there are those who are professional borrowers. They are the bane of civilization. A careful man, the "good neighbor," returns the tools borrowed as good as when secured or the wear replaced as far as is possible, and, further, he returns them promptly. The other man, however, has created a situation which calls for correction, and one of the farm centers of the Napa County bureau has suggested the placing of loaning on a strictly business basis. Adviser Baade took up the matter with the University Farm and Professor Davidson suggests:

"The only carefully worked out data of this kind that we have is published in the United States Department of Agriculture Bulletin No. 338. This bears the date of January 18, 1916:

"Grain drill—Average cost, \$72.00; cost per day, \$1.71.

"Mower—Average cost, \$41.00; cost per day, \$1.90.

"Land roller—Average cost, \$24.00; cost per day, 57c.

"Sulky plows—Average cost, \$42.50; cost per day, 59c.

"Data is not given for other machines.

"We are inclined to think that for California conditions this cost would be increased at least 50 per cent.

"The cost of operating depends upon the size of the machine, and the daily cost varies very much with the amount of work performed each year, but these suggestions should be of some interest, at least, in this connection."

Before such a plan can be worked out in all its details, there will be still opportunity for expression of the old neighborly way of being neighborly, but the Cultivator appeals for consideration of justice in the matter and especially for the return of the tool or implement as soon as its mission is performed. This borrowing and making the owner call for his own does not lead to neighborly feeling.

### GOVERNMENT WILL SELL WHEAT

Farmers with last year's wheat still on hand, and for which there is no immediate market, may secure aid in disposing of it by getting in touch with the Food Administration Grain Corporation, the zone agent of which in this state is R. A. Lewin, San Francisco. The department says:

"In cases of disagreement between farmers and local buyers or between country dealers and millers as to grade, the zone agent of the food administration is empowered to settle differences and will render this service when a two pound sample is sent him for examination."

### SAN QUENTIN GRAIN BAGS

Warden Johnston makes the following announcement as to San Quentin made grain bags:

The price fixed is 20 cents a bag, to remain in effect until April 1. In order to distribute fairly the quantity of bags that it will be possible for us to manufacture, the prison directors have decided not to accept an order from any one farmer or consumer for more than 10,000 bags. Bags are standard size, 22x36 inches; they are

packed in bales of 500 each. Those ordering are cautioned that bags may be purchased for their own use only and not to be sold to others.

Any grower who desires to order bags from San Quentin prison may secure copies of the law and rules governing and forms for ordering by applying to J. A. Johnston, Warden, San Quentin. All orders must be accompanied by deposit of ten per cent of amount of order, with the understanding that deposit will be forfeited if the bags are not taken. Farmers are asked to state at time of ordering the latest date at which they can accept delivery of bags.

Don't wait, do it now! Buy war savings stamps!

### DEPARTMENT BULLETINS

"Ever Bearing Strawberries," by Darrow, Farmers Bulletin, 901.

Bulletin issued by the Department of Agriculture, Washington, D. C., "Killing Hogs and Curing Pork," by Ashbrook and Anthony, Farmers Bulletin 913.

U. S. D. A. Bulletin 538, "Increased Cattle Production on Southwestern Mountains." This is by Jardine and Hurtt.

U. S. D. A. Bulletin 596, is a professional paper having to do with feeding dried potatoes to swine.

A state bulletin of particular interest at this time, when there is so much discussion on the application of nitrogen, is by New Jersey agricul-

tural experiment station, New Brunswick, New Jersey. This is "Use of Fertilizer," Bulletin 172, and gives the results of experiments with nitrate of soda.

### GLENN COUNTY FARM BUREAU SCHEDULE

Bayliss, February 1, night meeting. February 1; Ord, 4-5, night meeting 5; Larkin, 7-8, night meeting, 8; Cordora 11-12, night meeting, 12; Jacinto, 14-15, night meeting, 15; Orland, 18-19, night meeting, 19; Plaza, 21-22, night meeting, 22; Elk Creek, 28, 2 p. m.

The regular meeting of the Board of Directors will be held on Saturday, February 23, at 10 o'clock in the High School building at Willows.



## "You Can't Beat It"

"That orchard of mine is the best in the country. This year it's bearing a crop of fruit that would break the branches if they weren't propped up. And it's only five years old at that."

"How did I do it? That's easy. Learned to use my head and

## HERCULES DYNAMITE

"I've not always had that kind of an orchard. I'll admit it. Mine used to be only average or below average, instead of way above average as that one is. It's because I used to plant my trees in spade-dug holes—holes with hard root-resisting sides. Now I blast the holes with Hercules Dynamite. As a result the holes have soft walls, ready to welcome the roots. Also the ground around each hole is shaken up, gets sort of an internal ploughing."

"Sounds too simple to make such a difference in the orchard doesn't it? And yet, when you think of it, there is a very good reason why the difference is there."

"The roots of a tree are the only part that doesn't show but they are the most important part at that. The entire life of the tree depends on them. If you prepare the ground so that they can grow twice as fast, become twice as strong, as under ordinary conditions, you're going to get a tree that's twice as good, aren't you? Why of course you are! And that's what Hercules Dynamite does."

"There's a book about the use of dynamite for orchards that you ought to read. It's called 'Progressive Cultivation' and it's sent free on request. Write for it today."



### HERCULES POWDER CO.

690 Market St.

San Francisco

California



Hercules Powder Company,  
690 Market St., San Francisco, Cal.

Gentlemen:—Please send me a copy of "Progressive Cultivation." I am interested in dynamite for.....

Name .....

Address .....





Established 1877

Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established  
 1901, Combined with California  
 Cultivator 1916

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Saturday, Feb. 9, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against  
 loss through dishonesty of any adver-  
 tisers in the Cultivator. We do not at-  
 tempt, however, to adjust trifling differ-  
 ences between subscribers and honest,  
 responsible advertisers, nor will we pay  
 the debts of honest bankrupts. Notice  
 of complaint must be sent us within 30  
 days from date of the transaction, and  
 the subscribers must have mentioned the  
 Cultivator when writing the advertiser.

## THIS WEEK'S COVER

The winter irrigator will get a  
 hunch this year from the weather.  
 Many have for years proceeded upon  
 the plan of giving heavy winter irri-  
 gation, no matter how heavy the rains,  
 to fill the ground with moisture to  
 carry through the long dry season.  
 Others have imagined that perhaps  
 this heavy irrigation in a rainy season  
 might so fill the soil that it would  
 leach away fertility, especially ni-  
 trates. But that argument is certain-  
 ly without justification this year.

A hint is given in the cover illu-  
 stration this week. The grape grower is  
 there filling his soil and securing prac-  
 tical assurance for the summer's crop.  
 Should there be no heavy rains with-  
 in the next six or eight weeks disaster  
 will come to many a vineyard and or-  
 chard which is not given winter irri-  
 gation.

## BEET COMMISSION

Hoover's sugar beet commission  
 is in action. Three members were ap-  
 pointed; Prescott F. Cogswell of Los  
 Angeles County, Merle Rogers of Ven-  
 tura County, John Perry of San Joa-  
 quin County. Mr. Perry was unable  
 to be present at the hearing in Los  
 Angeles for the first two days. The  
 other two commissioners are receiv-  
 ing the evidence. The start has been  
 made with evidence as to cost of grow-  
 ing beets; later cost of manufacturing  
 will doubtless be taken up. The beet  
 growers are represented by Attorney  
 Bishop of Orange County; the factor-  
 ies by Attorney John D. Fredericks.

## ORDER EARLY

The forehanded farmer, in these  
 days of transportation gluts, if an im-  
 plement or machine is needed months  
 hence, should give earnest considera-  
 tion at once to the matter, even order-

ing with request for immediate ship-  
 ment. The transportation situation is  
 being cleared as rapidly as possible,  
 but it appears the coming year will be  
 one of the most strenuous in the his-  
 tory of the country, and rolling stock  
 will be demanded for military uses,  
 which will make all transportation  
 slow.

If we need fertilizers, implements,  
 machinery, seeds, especially seeds,  
 we should anticipate the need by  
 weeks or months.

## ESSENTIALS

Time was when the food admin-  
 istration, or an official connected with  
 the food administration, ruled that the  
 greater percentage of California's pro-  
 ducts were non-essentials and called  
 for little consideration on the part of  
 the federal government in the matter  
 of transportation or labor. This seems  
 to have been premature, at any rate  
 orange producers and producers of all  
 kinds of fruits are now given assur-  
 ance that plans will be perfected  
 whereby adequate transportation for  
 all farm products will be secured. As-  
 surance as to the labor question is not  
 yet so complete, in fact, it is even  
 probable it is beyond solution which  
 will be entirely satisfactory to all pro-

duced to the minimum. There was an  
 abundance of food; it was well cook-  
 ed; all ate heartily; the conservation  
 practiced did not display the best  
 judgment.

A year ago one of the scarcest arti-  
 cles of food in America was the po-  
 tato; at the time of this luncheon,  
 however, a hundred million bushels  
 in excess of former production is  
 somewhat embarrassing. But pota-  
 toes are the best of good eating and  
 in high favor in this country and  
 bulky shippers, therefore we have the  
 privilege and it is our duty to eat po-  
 atoes, saving the cereals, especially  
 rice, which are in demand for export  
 to European countries. At this lunch-  
 een, while we were given war bread,  
 made with the minimum of wheat, no  
 potatoes were served, but rice was  
 used to replace them.

Those having in charge the manage-  
 ment of this affair are patriotic in the  
 extreme, but it seems to us they were  
 shortsighted.

## PLANT POTATOES

Potatoes are holding fairly firm  
 in the markets notwithstanding a  
 bumper crop was raised last year. The  
 total production of 1917 in this coun-  
 try was 442,536,000 bushels, or nearly

## THE MILITARIST'S TRINITY

Here is a Prussian creed which is supposed to drive the German peo-  
 ple to the utmost obedience to the ruling class. It was written by  
 Schlunsen in Morgenpost.

"There is only one God—fear. There is another God—annihilation.  
 Expediency is the intercessor and completes the Trinity. Germany's  
 one hope lies in that Trinity. All hope in invisible intercession must be  
 put away. Fear of the doom that awaits them must be inspired in the  
 breast of all who oppose Germany. In that lies her salvation. She must  
 trust in no other. The struggle for unity would be its own compensation.  
 When that is accomplished, Germany can dispense her favors and can  
 defy her enemies—and the invisible God."

ducers. But fruit has taken its true  
 place as a necessary feature of the  
 world's diet.

## BAD BREAK

Live stock men have a most ser-  
 ious problem in trying to meet  
 weather conditions. Their stock is  
 dying of starvation, and even where  
 they have funds, it is almost impossi-  
 ble to carry feed to the stock or carry  
 the stock to the feed. So the stock-  
 men appealed to Washington for re-  
 lief from the meatless, or at least the  
 beefless, feature of meatless day, and  
 this relief was finally granted.

This situation was unfortunately  
 taken advantage of by other parties  
 in an ill advised statement placed in  
 Eastern papers, inviting Easterners  
 who liked beef to come to California  
 where beef was served seven days in  
 the week. In these times of war it  
 caused no little comment, for it seems  
 an appeal to what many consider the  
 slacker spirit.

Coast live stock men are up in arms,  
 and while it is admitted that it was  
 merely a case of poor judgment in  
 wording the advertisement, it is most  
 unfortunate, and so far as possible  
 the state should endeavor to correct a  
 wrong impression given to Eastern  
 people of the true California spirit—  
 one of fullest support to our country.

## EAT POTATOES

We recently were one of a  
 bunch of a few hundred men at a  
 noonday luncheon at which things pa-  
 triotic, such as war savings stamps,  
 income tax, food conservation, etc.  
 were discussed, yet one of the fea-  
 tures of the meeting was the eating,  
 and there food conservation was re-

100,000,000 bushels in excess of any  
 preceding year. Notwithstanding,  
 prices from the beginning to the  
 present time have held steady and  
 better than any preceding year. The  
 question now is how the season will  
 end with this abnormal supply. Eu-  
 rope would like to help us eat it, but  
 it is impossible to get it to her.  
 America should have dehydrating  
 plants which will handle this excess,  
 not only this year, but succeeding  
 years. We believe that before an-  
 other crop will need to be stored  
 there will be, to an extent at least,  
 means provided for handling the ex-  
 cess.

But in any case, let not the present  
 situation discourage future planting.  
 Some sections of California are al-  
 ready planting, but this is simply for  
 the out of the season crop at long  
 prices. The greater portion of the  
 crop, not only in northern states, but  
 in California, will be planted much  
 later.

Let potato growers take for their  
 own the motto of a large Eastern  
 grower: "The successful grower  
 plants every year, especially does he  
 plant heavily in the year of low prices  
 caused by heavy crops the preceding  
 year." His idea of planting in the  
 low-price year is that the shortsighted  
 planter acts upon the impulse of the  
 moment and almost always prefers to  
 pay long prices for seed when pota-  
 toes are high without stopping to  
 think that thousands of others will  
 think along the same lines.

## CHISEL TEETH

"There will come that day when the  
 world will say: 'This America that we  
 thought was full of a multitude of con-  
 trary counsels now speaks with the great  
 volume of the heart's accord, and that  
 great heart of America has behind it the  
 supreme moral force of righteousness and  
 hope and the liberty of mankind.'"

## This Week's War News

A two-ounce bread ration has been  
 ordered by Hoover in all restaurants  
 and hotels.

Swiss laborers are becoming resis-  
 tive and demanding demobilization of  
 the Swiss army.

Germans announce that they will  
 have the entire control of their west  
 front within the next six months.

All supplies of fuel oil in the Unit-  
 ed States have been placed under  
 control of the fuel administration.

The Italians and allies are continu-  
 ing to make the Italian front more  
 safe and even continuing advance.

Spain is vigorously protesting at-  
 tacks on Spanish ships by submarines  
 and demanding reparation for their  
 sinking.

The war is costing the United  
 States a cool billion dollars a month.  
 Four billions have been loaned by  
 America to its allies.

The president is still opposing the  
 war cabinet suggestion, and members  
 of congress are still insisting that it  
 will prove a means of speeding up the  
 war.

The chaotic condition existing in  
 Russia gives no immediate promise of  
 improvement. Conferences still con-  
 tinue at Brest-Litovsk. The Bolshe-  
 viki have succeeded in several attacks  
 upon the Ukrainians.

Washington has announced that any  
 brutality or unjust treatment toward  
 American men captured by Germans  
 will be met with swift retaliation upon  
 German prisoners in this country or  
 in the hands of American troops.

American artillerymen on the  
 French front were given a severe test  
 during the last few days, and, as near-  
 ly as can be learned, their effective  
 marksmanship and barrage fire pre-  
 vented attack by masked German  
 troops.

The Leviathan, formerly the Vater-  
 land, the largest vessel afloat, with  
 consorts of war vessels and accompan-  
 ied by nearly a score of other trans-  
 ports, has arrived in France with a  
 great force of American soldiers. Not  
 an accident occurred on the trip.

From rumors and best information  
 which can be had both by way of  
 Switzerland and Holland, the German  
 strike in munition plants and factor-  
 ies has been a most serious affair for  
 the German militarists. Many dis-  
 turbances have been shot, a strong hand  
 is being taken, and the city of Berlin  
 is under martial law.

The long heralded drive on the  
 French and Belgian fronts is still in  
 anticipation, although artillery actions  
 are becoming more frequent; the pres-  
 sure is increasing and the line tight-  
 ening; and it is anticipated that the  
 first satisfactory weather conditions  
 will give signal for the greatest mili-  
 tary action of all history.

The message sent by Berlin to the  
 German ambassador in 1914, which  
 specifically gave order to publish ad-  
 vertisement warning Americans in ef-  
 fect not to sail on the Lusitania has  
 been made public during the past  
 week and shows that Ambassador  
 Bernstorff had full knowledge, not-  
 withstanding his great "sorrow" at the  
 time.

The Germans have been given some  
 of their own medicine. That is, pre-  
 ceding the Italian drive the Italian  
 army was flooded with copies of pa-  
 pers which weakened the fighting  
 spirit of the Italian soldiers. It is now  
 said that leaflets have been scattered  
 by airmen over Germany, especially in  
 Berlin, which have aided in the recent  
 uprising of the German people.



# Agricultural News Notes of the Pacific Coast

## Northern California

Yolo County squirrel campaign started February 1.

A new cannery is to be erected at Martinez, Contra Costa County.

J. A. Teagarden has been named food administrator for Placer County.

A Placer County stock feeder has found excellent results from feeding rice straw.

Butte County planters are contemplating extensive plantings of cotton, largely experimental.

Ferndale, Humboldt County, is planning for a bigger and better agricultural fair to be held next fall.

The annual meeting of the California Grape Protective Association is to be held this week in San Francisco.

Gridley, Butte County, claims to be the largest live stock shipping point between Sacramento and Ashland, Oregon.

Truckee, one of the principal fruit icing stations on the Central Pacific, is having a most satisfactory harvesting season.

Experts of the pomological division of the University of California recently gave pruning demonstrations at the University Farm, Davis.

El Dorado County is organizing agricultural clubs in its high schools, two new ones having been recently formed at Goldville and Camino.

The main canals of Sutter and Butte Counties have been filled with irrigation water since late January and the earliest irrigations in these two counties are under way.

University farm management has shown belief in cooperation by uniting with dairymen of that section and reducing number of wagons or trucks hauling milk to creameries.

One of the largest sheep raising ranches in the state is to be installed near Chico, Butte County. Seven thousand acres have already been leased and nearly 10,000 sheep will be handled.

Eureka and other Humboldt County sections are appealing for more general road work, and the state commission now gives us to understand particular attention will be given to that county.

The Grange of Napa County has formally resolved: "We are unalterably opposed to the importation of Chinese labor. We favor such legislation as would result in forcing all idle men to assist in farm harvest."

The state colonization board is still appealing for cheaper, high quality land. Prices of all parcels submitted have been so high the board feels success of the farmers on the colony lands would be handicapped.

Contractors for the war department have been purchasing Sacramento Valley rice straw, contract for 4000 tons being the first signed. Another for 7000 tons will be made later. Some of this will be used in bedding for soldiers in Camp Lewis.

The post office department, or rather the postmaster at San Francisco, made a ruling that fish and game might be received by postmasters, mailed as parcel post. This was contrary to the state law, which contained a clause prohibiting such shipments. The matter has been taken to the supreme court, and ruling has been made that the California law stands.

## Central California

San Joaquin will plant between 5,000 and 7,000 acres of cotton.

The farm center at Armona, Kings County, is discussing live stock sales.

Porterville, Tulare County, is planting largely to deciduous fruits this season.

Fresno farm bureau is discussing a Patriotic Rally to be held late in February.

Notwithstanding keen demand for cotton seed in various valleys of the state, Commissioner Hecke is watching every shipment.

Railway people are appealing to orange growers who may need shook or other supplies any time during this season to make immediate orders.

A German has been arrested in San Francisco and held because of threats to dynamite controlling works of the Lindsay-Strathmore irrigation system.

The Kings County farm bureau is completing its organization and plans, as one of the first steps, to organize a series of community stock auction sales.

Stanislaus County Milk Producers' Association has commenced suit against dairymen for violation of contract. The concern is asking for \$15,000 damages.

County horticultural commissioners of various parts of San Joaquin Valley recently met and discussed with State Commissioner Hecke various aspects of cotton growing in the San Joaquin.

Merced County will materially increase output of beef for the next three years. One step in that direction is the recent purchase by large cattlemen of nearly 10,000 acres to use for live stock grazing.

Officials of the food administration are conferring with live stock men regarding securing cheaper feed. A series of meetings with food administrators are being held in various parts of the valley.

Fruit growers of California propose to fight to a finish patent claimed by a Michigan concern, the claimant for which demands immense tribute from the California fruit industry, because of the lye peeling process.

Farm center meetings are being held in various Fresno County sections to discuss "whether or not an irrigation district should be formed in the area covered by consolidated canals."

Farm Adviser Jungerman, Stanislaus County, announces meetings: February 6, Mitchell and Jennings; 7, Denair; 8, Tegner; 13, Thalheim; 15, Orange Blossom; 16, Fairview; 18, Wood Colony; 20, Hughson; 21, Patterson; 25, Keyes; 27, Claus.

The food commission has established as standard weights, 196 pounds net for barrel of flour, 49 pounds for a fourth of a barrel; and ordered that shorts shall be packed in containers with net of 80 pounds, bran net of 60 pounds, and rolled barley net of at least 75 pounds.

San Joaquin County farm bureau has organized a cream pooling association, cow testing associations, agricultural clubs, farm loan associations, Sudan growers associations, bean growers associations, milk producers associations and has investigated anthrax and some other troubles, to say nothing of holding jack rabbit drives and demonstrations.

## Southern California

Pomona is contemplating establishment of a large dehydrating plant.

It rained, very, very little in some sections of Southern California last week.

New olive processing plant has been established at La Mesa, San Diego County.

Riverside County farm bureau is getting into line with a marketing organization.

Los Angeles County farm bureau will investigate grain sorghums and cultural methods.

Riverside's display at the National Orange Show will consist of an immense battleship made of oranges.

Fumigators of citrus orchards are closing the season feeling that most satisfactory results have been secured because of favorable weather conditions.

J. M. Davison of Arlington has been made president of the Poultry Producers' Association of Southern California. This association is now capitalized at \$100,000.

Ventura County livestock men are discussing feed propositions and looking in every direction to secure rice straw or any feed which will carry stock over the drouth.

Yucaipa, San Bernardino County, people are beginning early on next fall's Southern California apple show. Directors are to be elected at the annual meeting this week.

The California state highway commission insists that trees along the state highway shall not be cut or mutilated unless written permit is secured from the commission.

At the meeting of the Orange County Producers' Association last week the old directors were reelected and a new year begun with over 500 acres additional cabbage signed up.

The Riverside County Fair Association has elected C. L. Lewis, president and Robert L. Taber, secretary for the coming year. Plans are in the making for a great exhibit in the fall.

The Riverside Mutual Fire Insurance Company expects to increase its insurance amongst farmers next year at least 300 per cent. A. E. Cox is president and C. P. Carl, secretary and manager.

Hemet, Riverside County, is looking ahead to next canning season and laying plans for sufficient help to handle the crop of apricots. The cannery is being enlarged to handle increased output.

Farm Adviser Parker of Riverside County has taken work with a large ranch in the eastern part of the valley and will be succeeded by A. L. Paschall, formerly farm adviser in Cochise County, Arizona.

Hemet, Riverside County, has a fruit industry and a cooperative cannery which are prime factors in the prosperity of the section. The people are now holding mass meetings and discussing housing and caring for the large number of helpers required in the canning season.

Bean shippers are concerned over the shortage of bean bags. Prices for coming season's delivery are 18 cents for 80 pound bags and 22 cents for 100. These are double the initial prices of '17. Spot price for today's delivery is 23½ cents. The association has not yet contracted.

## The Coast and General

Arizona produced 9,000,000 pounds of beans, mostly Teparies.

Farmer's week is being observed this week at University of Idaho at Moscow.

The entire wheat crop of France has been requisitioned by the French government.

Idaho hog men in session at Idaho Falls, appealed to the food administration for cheaper stock feed.

To prevent devastation from floods, farmers of Cowlitz County, Washington, are organizing a dike district.

The Farmers and Housekeepers meet at University of Arizona was a success, with 255 families registered.

Long staple cotton grown near Yuma, Arizona, was declared to be superior to that grown in the Sea Islands.

The executive board of the Northwest Livestock Association has decided to hold the 1918 show November 7 to 13 inclusive.

Only the very poor and men and women doing the hardest kind of work may have more than seven ounces of war bread a day in France.

The Farmers Union Mill and Grain Company, Tacoma, Washington, is constructing an elevator with a capacity of 75,000 bushels to cost \$10,000.

French war bread comprises all the elements of wheat except bran, with a heavy admixture of flour from other cereal grains. This admixture is obligatory.

Six cars of apples recently billed from Yakima, Washington, are under observation of department of agriculture experts who are testing various shipping methods.

British Food Controller Rhondda declares, "The food position of England, and as I understand it in France also, can now without any exaggeration be described as critical and anxious."

The Colorado State Beekeepers' Association recently met at Fort Collins and discussed the honey industry and elected W. P. Collins, president, Wesley Foster of Boulder, secretary.

A cow testing association with headquarters at Stillaguamish, Washington, shows an average of milk per cow during December of 550.7 pounds and of butter 26.73 with an average cost of feed of \$7.79.

About October 1, 1917 butter was selling in Berlin at \$2.25 per pound, sugar at 56 cents per pound, and ham and bacon at \$2.11 per pound. This information was received by the United States food administration through a reliable source.

With storage for hides more than filled, and with profiteering in tanned leather such that reports insist that more than 400 per cent increase in profits is secured, the wearer of shoes is forced to form the resolution that he will go barefooted.

An organization of members of the Grange, Farmers Union and labor organizations was recently formed at Portland. It is proposed that the state legislature shall be reduced to 30 members; that the state's natural resources shall be used for the common good; that there shall be established an effective state marketing system, with other features such as anti-injunction, compulsory compensation for all labor, etc.





## The Heart of The Milking Machine

**THE** pulsator is the heart of any milking machine. It controls and regulates the action of the teat cups on the cow's teats.

A man with a weak heart would not be accepted for military service. You should not accept any milking machine with a weak heart. The Perfection has the heart of an athlete. His heart beats are strong and steady. He can stand lots of work and thrives on it. The Perfection pulsator is simply a piston working back and forth in a brass cylinder, no cog wheels, weights, levers or "clock work." It does not easily get out of order, and with ordinary care it should outlive any other piece of machinery on the farm. The Perfection milks as the calf does, with a gentle suction, a downward squeeze, followed by a period of complete release. The pulsator can be instantly adjusted to suit either a hard or easy milking cow. This point is a very

important one. Not all cows milk alike and the Perfection recognizes this fact.

The action of the Perfection on the cow's teats, which is nature's way, and the possibility of adjusting the machine to suit different cows are two of the many points in which the Perfection excels all other milking machines.

Newman Bros., Elk Grove, Cal., write:

"As you know we produce certified milk and would not be allowed to use any machine that would injure a cow's teats or udder or adversely effect the bacteria count. We have milked entirely by machine for about two years with perfect satisfaction to all concerned, including the cows. One man with ordinary intelligence is doing with the machine what it required three men to do in the old way. We would convict ourselves of being either philanthropists or fools were we to go back to the old way. We are familiar with most makes of milking machines and have tried out several of them. The Perfection is superior in several respects. First: Both suction and squeeze can be changed instantly and adjusted to the individual cow. This is a mighty good thing, as any milker ought to know. Second: The Perfection will milk more cows in a given length of time. Third: The Perfection pulsator is more simple; has fewer wearing parts and is easier to adjust. Fourth: The teat cup rubbers last much longer than on one other machine which we tried. I cannot understand the dairyman, who modern in every respect, will go on milking by hand when he could cut expenses and make dairying more attractive, to say nothing of sanitation, by using a Perfection Milking Machine. When we need more milking machines, the order is yours."

Write for free illustrated catalog. It contains valuable information.

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# PERFECTION MILKER

## Kings County Breeders' Directory

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Won Grand Champion Sow at State Fair  
Won Reserve Champion Boar at State Fair

Won Grand Champion Sow at Hanford  
Won Grand Champion Boar at Hanford

**Wm. Bernstein**

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32 Females

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CHOICE BULLS FOR SALE

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## Poland Chinas, Medium Type

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize winning strain. 12 firsts, Junior Champion and Reserve Grand Champion Boar, Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

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Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

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## Mohair

By Geo. W. Barnes, Arizona Livestock Specialist



**BY** FAR the most important goat industry in the state is the Angora grown under range conditions for the mohair. The fine long, white, silk hair was at one time used exclusively for the manufacture of ladies' fancy dress goods and in the manufacture of plushes. By being so largely used for this purpose only, the price of mohair depended to a large extent upon the fashions and the price thereof fluctuated greatly from year to year.

At the present time it is used in the manufacturing of various articles such as belting, wings for aeroplanes and in various forms of cloth.

The price per pound depends upon the length, strength, freeness from kemp or coarse hair, and fineness of the fibre. Fifteen inch fibre has been known to sell for from \$8 to \$10 per pound. The average length for mohair raised under range conditions will average between eight and ten inches and brings from 50 to 75 cents per pound. The demand at the present time for mohair in the United States for manufacturing purposes is far in excess of the amount produced.

In growing Angora goats for mohair the does should be 15-16 Angora and to still improve the value of the offspring and product pure bred bucks should be used, for the price of mohair depends to no small degree upon the length and fineness of the fibre.

Methods usually suggested for building up a band of Angoras is to purchase pure bred bucks and cross them upon the common white goat. Any other color is quite objectionable. Those who have had experience in this work report that the short hair

ones are to be preferred because the long coarse hair continues to be transmitted to the offspring, which greatly decreases its value. By the use of first class bucks the breeder should receive a 100 per cent kid crop because many of the common goats will have twins. They reach maturity when about 18 months old, but will breed when six months of age. The first crop of kids received will be half Angora; by crossing these kids to pure bred Angora bucks the offspring will be three-quarters Angora, and about the fourth cross one may expect to secure a good grade of mohair.

Upon further examination of this method of securing a producing band, it is found to be a slow process and more expensive than would appear at first, because many years are being taken to secure this fourth cross animal. Out of the 100 kids which are secured from the 100 does, 50 no doubt will be males; this leaves only 50 half breed females to secure the three-quarters bred animals, and 25 of the offspring from them will only be three-quarters blood, and so on until the fourth cross there will be only about six or seven females. In many cases this will be the only way to secure a start, and the band during the developing period will have three or four different grades, but by keeping

Angora goats are useful in cleaning up brush land. The flesh is palatable and nutritious. The price for mohair is good and the demand great. On the forest reserves they are being used to clear the forest of underbrush, browse and weeds which cattle do not eat.

## How to Correct Bitter Milk

Two Cultivator Subscribers Describe Their Methods

I have been reading the Cultivator since I came to California 14 years ago and always welcome it to our home every Friday. I have got lots of suggestions from the contributors; so far I have given nothing back. Now I have just read of the dilemma of subscriber at Hynes with that bitter milk. I will be brief and say I don't know what causes it but I can tell how to remedy it.

As soon as you bring in your milk strain it in any vessel large enough to contain it. Set it on the fire and heat it until it is uncomfortable for your finger in it, then strain it in the pans and put it in milk house for cream to raise. If the cream is crinkly you had

it hot enough, if not make it a little warmer next time. This kills the germs in the milk that give it the bad taste. Keep stirring the milk while you are heating it. You can use your own pleasure about washing your finger before you use it as a thermometer.—C. P. Emerson, Gardena.

We noticed in the Cultivator of January 26 a question regarding cause of bitter milk. We wish the inquirer might know how we overcame the trouble of making poor butter from such milk.

Last winter we had similar trouble and it was renewed again this winter. We solved the problem by straining



A Steybrae Ayrshire





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A leader which has added to the Santa Anita Berkshire quality.

the milk and at once heating it over the fire to the scalding point, or 150 degrees Fahrenheit (using a dairy thermometer to test it. Even if it runs higher than that it will do no harm. Then remove from the fire, pour in pans or crocks and set to cool uncovered. When ready to churn the cream will not need to be soured but

butter will come quickly. However, there may be white flakes of milk or curd among the butter, but this will all wash out readily and the butter will be sweet and good. At least that has been our experience. As soon as warm weather comes we find the trouble is over, and we no longer heat the milk. — Mrs. J. F. Delzell, Lindsay.

## Venadera Herd R. M. Cows

Guy H. Miller of Modesto writes: "I wish to report yearly authenticated tests recently completed in Register of Merit testing in Venadera Herd of Jerseys.

"Zama of Venadera started test at 23 months of age; for the year she gave 7,575 pounds of milk, average test five per cent, making 378 pounds of butter fat; was milked 359 days. She is a daughter of Belle of Venadera, Register of Merit test 462 pounds of fat. Martha of Venadera started test at 23 months of age; for the year gave 5,450 pounds of milk, average test of 5.75 per cent, making 315 pounds of butter fat. Martha is a daughter of Annette of Venadera, Register of Merit test 429 pounds of fat in 357 days. Annette is on test again and will finish in a few weeks. She is one of the seven Register of Merit daughters of Anita of Venadera, who holds the world's record for cows in number of Register of Merit daughters with yearly records. These two heifers, Martha of Venadera and Zama of Venadera, are sired by Owl of Belleview, a bull of the noted Owl and Oxford Lad families that was used in

Venadera Herd before being purchased by Professor True to head the Jersey herd at the University Farm at Davis. Owl of Belleview now has five daughters that have qualified for the Register of Merit as two year olds in Venadera Herd. Goldie of Venadera, one of our native cows, recently finished third yearly test. For the year she gave 12,195 pounds of milk, average test 499 per cent, making 598 pounds of fat, equal to 704 pounds of butter 85 per cent fat. Goldie has a Register of Merit test of 469 pounds of fat in a year, made as a three year old, and another of 534 pounds of fat made as a five year old. Like the other cows that have been tested in Venadera herd, she was milked and fed twice daily while on test. She was also taken to the state and county fairs while on this test, winning grand championship at Modesto fair. Goldie is one of the 14 Register of Merit daughters of the grand old bull Marigold's Exile King that headed Venadera Herd for several years, and her dam is Margery Golden, Register of Merit test 459 pounds of fat, dam of two daughters in the Register of Merit.

## Grazing Privileges Must Not Be Sold

The secretary of agriculture is notifying all holders of permits for grazing livestock on the national forests that the payment of any bonus or allowance for waiver of the grazing privilege in connection with sales of livestock or ranch properties will be cause for revocation of the permit.

Owing to the great demand for use of the forest ranges, which is now in most regions far beyond their capacity, the grazing privilege is of large value. In the view of those in charge of the national forest grazing business it would be entirely unfair for the public to forego a maximum return for the value of use of its property and then allow those granted the privilege of use to collect this value from others as the price of surrendering their privileges.

As Secretary Houston says in warning the range users that the payment of bonuses or the giving of any consideration to secure the filing of a

waiver of the grazing privilege is prohibited, "such a payment would be a consideration for a privilege the granting of which is wholly within the discretion of the government and for which no one is entitled to receive compensation." Therefore any such payment will be "sufficient cause for the revocation of permit or forfeiture of all grazing preferences based upon the purchase of permitted stock."

### DAIRY COMPETITION FOR CALIFORNIA CULTIVATOR PRIZES

Prof. F. W. Woll, in charge of the State Dairy Cow Competition, sends the following report of December performance of herds competing for the Cultivator three \$100 prizes:

Herds of 10 to 25 Cows		
Owner	No. Cows	Ave. Lbs. Butterfat
Floyd Beebe	18	40.03
J. W. Coppini	21	29.96
C. Darnell (10 cows entered)	5	57.56
Herd of 26 to 50 Cows		
Iver Iverson	37	44.45
W. Terkelsen	50	24.91
G. E. Trigg	35	29.40
Herd over 50 Cows		
Coppini & Coppini	57	22.16
John Hansen	95	30.03

Aux Ambort reports that his rec-

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are all sold. We have on hand a grandson of Imp. Galaxy's Sequel, a grandson of Langwater King of France, and a fine Glenwood yearling. All are moderately priced.

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Col. Ben A. Rhoades, Auctioneer, Los Angeles

### Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy

Perkins, Cal.



ords were completed with the November test; in case of the tests in the herds of L. Hess and D. J. Sullivan and Son, it is still doubtful whether the records can be completed on account of the fact that their respective cow-testing associations are still without a tester.

## Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

### Spinal Meningitis

A mare seemed to have dis-

temper in a light form, from which she seemed to have recovered. Next I noticed her breaking down in the fetlock joints. She was very nervous but ate and drank. She lay flat most of the time and could raise her head only enough to drink out of a pan. Running sores formed on the side of the head and on the shoulder. She lost her colt after being down about five days and at the end of 14 days she was so bad we had her destroyed. What was the trouble? Was it contagious and could it have been cured?—Subscriber.

The trouble is known as spinal meningitis or forage poisoning. It is due to a fungus or mould on the grass or hay. Isolated cases are seen over the country and occasionally there

are epidemics when many horses will be lost in one county or state. It seems to produce some change in the system that causes congestion of the coverings of the nerves and spinal cord. By continuing to eat the same feed the disease is increased, besides, when once introduced into the stomach and bowels it seems to increase there. As you noticed, the animals remain conscious and rational, only losing control of the muscles. When the disease is first noticed there should be an entire change of the feed and the bowels thoroughly emptied. Probably the best remedy to use in emptying the bowels is salts and nux vomica. By mixing three pounds of epsom salts, one pound of common salt and one ounce of the powdered nux vomica, dividing this into ten powders and giving one powder every eight hours until the bowels become very loose you will not only remove the trouble from the system but at the same time build up the nerves and spinal cord.

The horse should be kept on his feet by supporting him with slings because when once down they seldom recover. One case on a farm indicates the presence of the fungus on the grass or hay and careful watch should be kept on the other horses to stop further loss. Half dram doses of the iodide of potash in the drinking water twice a day also helps to drive the trouble out of the system.

### Growth in Cow's Teat

About three months before cow came fresh she developed something in one of the back teats that retarded the milk from coming down freely. At the first stroke in milking the teat emptied and it would take a minute for it to fill up again. The milk seemed near normal at first but is getting a little thin now. The calf can not get the milk and the quarter is getting a little hard and tender. What can be done for it?—Subscriber, Fresno.

There is a growth in the teat just where it leaves the udder that nearly closes the duct. No one knows the cause of such growths, but they are found frequently, and sometimes they close the duct. You should use a milk tube and draw out all the milk twice a day until the swelling and soreness has entirely subsided, then the growth should be cut by passing a small instrument that has a concealed blade in it through the opening in the teat, and when the growth is reached the blade can be pushed out and growth cut in pieces. This is a delicate operation and should be done by one who knows how to handle the instrument. This usually results in clearing the duct and restoring the teat to normal, but sometimes it sets up an increased inflammation and makes matters worse and the quarter may be lost. If left as it is the quarter will surely be lost. You will have to decide whether you will try it or not.

### Influenza

My horse has had a cold for about ten days. He coughs and runs at the nose very badly. He eats and the bowels and kidneys act but not as freely as usual. He hangs his head down and stands quietly. Have given him two tablespoons of tincture of ginger in a cup of hot water and rubbed a teaspoon of tar on his tongue twice a day. Have kept him well blanketed at night but he does not seem to be improving. What remedy would you

advise for him?—Subscriber, Long Beach.

Probably it is a case of influenza. In cases of that kind it would pay to employ a veterinarian because the same remedies will not do in all cases of influenza. Delays are dangerous and if neglected it may become a case of pneumonia, and that requires careful treatment that you could not give. We believe it best not to suggest remedies in such cases as this.

### Sow with Sore Teats

We have a sow with nine young pigs nearly ready to wean. The sow's teats are very sore, inflamed and swollen. Her breasts are scabby and she gives very little milk so the pigs are very poor. What is best to do about it?—Subscriber, National City.

Wean the pigs at once. They will do much better if fed sweet or sour milk with some middlings in it. Bathe the sow's teats once a day with warm solution of permanganate of potash, one ounce to the gallon of water.

### Abortion

Last July I purchased a cow that I was told was about four months with calf. She came in heat and was bred on September 16 and on November 19 she aborted twin calves. She was bred again and aborted again. What can I do to prevent this trouble and do you think the man I purchased her from should be held responsible for my loss?—Subscriber, Santa Ana.

This is rather an extreme case. The man who sold you the cow may have known something about the trouble and may not. He justly should bear part of the loss; but he may not think so. It may be contagious abortion or may be caused by tuberculosis. First we would advise having her tested for tuberculosis. If that is the trouble she is not worth breeding again. If she is free from that then let her rest for a few months, and in the meantime give one ounce of the tincture of iron in the feed for two weeks and also try some of the remedies recommended for curing contagious abortion.

### SAUSAGE RECIPE

A writer in Home and Farm of Des Moines gives suggestions to those who wish to work up a fancy sausage trade in town. Under farm conditions, for farm consumption, sausage is generally made out of the waste meat, in which there is considerable fat. The surplus sausage is generally fried down in crocks or else smoked. However, during the winter, sausage will keep at a moderately cold temperature, with no other treatment than mixing with salt, pepper, etc., as suggested.

Sausage is generally made from the lean parts of the shoulder and neck, and the lean trimmings of the rest of the body. Practically the whole hog may be ground up into sausage if desired, but it is generally found more profitable to eat the tenderloin fresh, and to cure the hams and bacon. To make a high grade of sausage, it is wise to use only the leanest meat, which has been well cleaned of fat, sinews, tendons, etc. There is a great difference of opinion as to how much fat should be added to the lean meat. For the very best sausage, it seems to be customary to use only one pound of fat for each 15 or 20 pounds of lean; but in ordinary sausage, they often use one pound fat for each three or four pounds of lean meat. The fat and lean are finely chopped in a mincing machine, and then seasoning is added according to the taste. It is wise to add only a little seasoning at first, and try out a little of the mixture on the stove, to see if it is about right. As a preliminary, we suggest that for each ten pounds of sausage there be used four ounces of fine white salt, one ounce of ground black pepper, one-fourth ounce of whole pepper, one-half ounce of sage, and possibly a half ounce of sugar. Sometimes other spices than those mentioned are also added. After mixing in the spices, some grind the sausage again, in order to secure a more intimate mixture. To make the very best sausage, some claim that only the lean pork from old hogs should be used, the flesh of pigs eight or ten months old not being firm enough to make the best sausage unless some beef is mixed with it.

## Jersey Cattle Breeders of California

### Young Jersey Bull

of excellent breeding at a fair price. Write for particulars to

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Member Orland Jersey Cattle Club.

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A fine straight one, bred right, priced right

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Herd Headed by You'll  
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to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynlyn.

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Young bulls from proven dams in Register of Merit

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ALL MY RECORDS

are made under ordinary dairy conditions. The farmers cow is

### The Jersey

YOUNG BULLS FOR SALE

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### Young Jersey Bulls

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One at the head of your herd will pay big dividends on his cost. Write to

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Senior Sire: Imp. You'll Do Circus  
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Offers Young Bull Ready for Service.  
Registry of Merit Dam  
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The dairy rancher has long since learned that the cow is a sensitive animal, and anything that adds to the comfort and the cleanliness of her surroundings invariably shows up in the profits at the end of the season.

30% to 40%

Increase in Production

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Big 112-page book of Modern Barn Plans containing scores of diagrams and illustrations—and the complete Catalog of Louden Barn Equipment.

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800 Cows and 50 Bulls Best of Breeding Show Winners  
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves.  
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4000 Head Both Sexes Same Breeding as Registered Herd  
We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.

Elevation 3000 Feet



## Second Sale of Holstein Bulls at Gonzales

In January, 1917 California Breeders Sales and Pedigree Company held what is believed to have been the first sale of registered Holstein bulls ever held in this country, at Gonzales, a district almost entirely farmed by Swiss-Italian dairymen. At that time 19 well bred, carefully selected, fully guaranteed bulls were sold at public auction at an average of \$206 per head, a very large percentage of them going to dairymen who had never before owned a purebred sire.

Another sale of similar character was held by the same company at Gonzales on January 19 this year, when 24 good young bulls from the herds of The J. S. Gibson Company, Williams, Toyon Farm Association, San Jose, Henderson Company, Sacramento, Palo Alto Stock Farm, Palo Alto, Dr. E. J. Weldon, Sacramento, and A. W. Morris & Sons, Woodland, were sold for an average of \$143.50 per head. Quite a number of

dairymen who were buyers last year were buyers this year, and again a considerable number of bulls went into herds where a purebred sire will now be used for the first time.

Estimating results by the immediate returns from this sale, it was not a profitable one for the breeders who consigned. Nine of the bulls were under one year old, and the other 15 were yearlings, and considering the fact that the expense of conducting a sale of this kind is unusually high the net returns are hardly attractive.

The community in which these bulls were sold stands to benefit in a large way through the use of these better sires, and it not unreasonable to figure that the benefits to be derived in the future will more than offset the low returns to breeders in this particular sale.

It was a very noticeable fact that interest in the bulls was even greater than last year, many dairymen who did not buy in either sale going over the bulls carefully. Another feature of the event came the day before the sale when Principal Bert H. Carner of Gonzales Union High School invited Sales Manager C. L. Hughes to appear before the agricultural club of the school to make a short talk on Holstein pedigrees and breeding and judging. Upward of 20 boys attended the demonstration and one of them made a keen selection in the purchase of a young bull the following day.

Upwards of 100 dairymen from as far north as Gilroy and as far south as Paso Robles attended the sale, and several interested Holstein breeders were also present.

The top price of the sale was \$240 paid by J. Bernardini & Company for the yearling Toyon King Pontiac Wayne, consigned by Toyon Farm Association. The dam of this bull has an official record of 25.34 pounds butter in seven days as a three year old and is a most promising candidate for a higher record at next freshening.

Twenty-nine bulls had been catalogued for sale, but owing to minor injuries and the missing of a train by one consignment, only 24 were in the sale. Following is a list of the bulls sold with name of buyer and price: A. Rianda, \$200; P. Rheinholdt, \$125; Henry J. Pura, \$225; J. Wishman, \$75; Frank Corda, \$190; J. Pimental, \$65; Frank Vosti, \$60; John Foletta, \$145; Joe Bianchi, \$125; Frank Corda, \$150; V. J. Lanini, \$175; Peter Barlogia, \$120; B. F. Conner, \$140; W. H. Moore, \$175; A. Gubser, \$180; Pura Bros., \$200; Chas. Bedolla, \$100; Alfred Clark, \$100; Ricca Bros., \$160; Clark & Marzorini, \$105; J. Bernardini & Company, \$240; L. H. Anderson, \$155; James Rianda, \$110; Clark & Marzorini, \$125. The auctioneer was Col. Ben A. Rhoades, Los Angeles.

### GREAT THREE YEAR OLD

Aralia De Kol Pontiac Mead, daughter of Aralia De Kol Mead, has now to her credit a wonderfully good seven day official record. She has now been in milk about 30 days after completing the California yearly record for senior two year olds of 934 pounds butter. She went through a very severe experience at calving and did not start off in promising form. But as she gradually recovered normal condition she responded with increased milk flow and now has to her credit as a senior three year old 33.25 pounds butter in seven days and is still gaining. She is sired by Segis Pontiac De Kol Burke, son of the former world's record cow Riverside Sadie De Kol Burke, and is the first and only bull in the world whose seven nearest dams average over 1000 pounds butter in one year. She was bred and is owned by A. W. Morris & Sons Corporation, Woodland.

No amount is too small to lend to your country, buy war savings stamps!

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SAVE YOUR CATTLE

PROTECT THEM FROM

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BY USING

## BLACKLEGGOIDS

DOUBLE AND SINGLE VACCINATIONS IN PILL FORM.

NO DOSE TO MEASURE.  
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ACCURATE. EASY TO USE. EFFICIENT.

## GERM-FREE BLACKLEG VACCINE

A blackleg filtrate for the prevention of blackleg.

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for the preventive and curative treatment of blackleg.

Order through your Veterinarian or Druggist.  
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ANIMAL INDUSTRY DEPARTMENT OF  
**PARKE, DAVIS & CO.**  
DETROIT, MICHIGAN.



Saved Him \$225.00

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"From E. J. Dayton, Knoxville, West Va.  
"Two years ago the owner of the prize of my mare's shoulder gave way, and three Veterinarians told me she was ruined; but I used Kendall's Spavin Treatment according to instructions and today I have refuted \$225.00 for that mare. I claim you saved practically the whole amount. I have tried it for almost everything in the animal line and have found it most satisfactory."  
Price \$1.10 a bottle or 6 for \$5.50. Get our Book, "Treatise on the Horse"—Free at druggists or write us.  
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-more food value!  
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**Hairy Peruvian Alfalfa**

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Make your land produce to the utmost — plant this wonderful alfalfa. Write for descriptive circular containing testimonials.

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The 4 H. P. Cushman Handy Truck is the most useful outfit ever built for farm work. Engine weighs only 190 lbs., and entire outfit only 375 lbs.

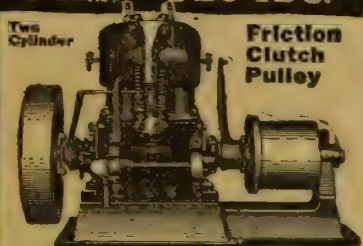
Besides doing all farm and household jobs, this 4 H. P. Cushman may be lifted from truck and hung on rear of binder during harvest to save a team. In wet weather it saves the crop.

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1918

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Answer the gardener's big questions: How can I grow plenty of fresh vegetables with my limited time? How can I avoid backache and drudgery? Use

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Do the work ten times faster than the old-fashioned tools. A woman, boy or girl can push one. 38 combinations — easily adjusted. Light, strong and durable. Prices, \$3.25 to \$15.00. Will help you to cut the high cost of living. Write us for free booklet today.



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Your cattle brand must be registered with the Cattle Protection Board before February 20, 1918.

Applications received after that date will be given only secondary consideration.

Persons using unrecorded irons will be liable to arrest.

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Underwood Building  
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### Percherons

Large stud of prize winners to choose from.

Fillies, colts, brood mares or stallions old enough for service for sale at all times.

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Pure and Cross-Bred Rambouillet Range Sheep Also Breed Hampshires.

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Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

Visitors welcome — information cheerfully given.

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Expert Live Stock Auctioneers

Pure Bred Stock Sales a Specialty

Sales conducted in all parts of California and Adjoining States. Twenty-five Years' Experience

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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

## Field Notes from the Live Stock Men

Jean Armour, 25487 is one of the greatest Ayrshire cows of the country. She is the first Ayrshire cow to produce over 20,000 pounds of milk; her official record, which also made her breed champion, being 20,174 pounds milk, 774.73 pounds butterfat. In her fourteenth year she produced 18,382 pounds milk, 716.36 pounds fat. She died last month. It was asserted that this cow made more Ayrshire history for herself and offspring than any other. She was born October 19, 1901.

Every Jersey breeder who is intelligently following the progress and development of the breed needs a copy of the 1917 Register of Merit. The book is in a new form, giving the names of each sire with tested daughters with records of daughters and ages at which records were made. Also for the first time the volume contains the names of dams that have produced Register of Merit daughters and sons, with production records of the daughters. This volume contains the greatest amount of easy-to-refer-to information on Jersey records yet published. Copies can be secured for \$2.25 postpaid from The American Jersey Cattle Club, 324 West 23d Street, New York City.

Barnyard manure has been the subject of long and exhaustive experiment by the University of Missouri agricultural college, and it was determined that its fertilizing value ran as high as \$4.10 per ton. In all tests made the returns averaged a value of \$1.90 per ton. Used in combination with phosphate several fields proved unusually profitable.

Official Yearly Records of All Dairy Breeds, including all records of registered cows completed to date were recently summarized by the United States department of agriculture. The summary shows that 3220 Holstein cows have records averaging 14,622.7 pounds milk and 500.7 pounds butter fat in one year; 6200 Guernsey cows have records averaging 8934.44 pounds milk and 446.01 pounds butter fat in one year; 199 Brown Swiss cows have records averaging 10,868.7 pounds milk and 433.45 pounds butter fat in one year; 5244 Jersey cows have records averaging 7792 pounds milk and 417 pounds butter fat in one year; and 2598 Ayrshire cows have records averaging 9555 pounds milk and 377.51 pounds butter fat in one year.

Margaret Aralia De Kol, five year old daughter of Aralia King and out of a daughter of Juliana King of Riverside, recently completed an official record of 25.42 pounds butter in seven days eight months after calving in the herd of A. W. Morris & Sons Corporation. This record gives the grand old cow Aralia De Kol the distinction of having been the only cow in the world with a record of 25 pounds butter in seven days eight months after calving that has a daughter and a granddaughter each with official records above 25 pounds butter in seven days eight months after calving. Thus does the official record establish one of the foremost families of persistent producers in the Holstein breed.

Gotshall & Magruder, Ripon, have recently made some good sales from their herd of registered Holsteins. To H. A. De Wolf they sold the females Mooresta Pontiac of Vina and Lady Vale Segis; to R. E. McCracken the young bull Segis Skylark Karlay; and to Christensen & Nielsen the young bull Sir Pontiac Jane Karlay. They also sold a bull of exceptional blood lines to J. P. Compton & Son of Washington. This young bull is Pride Fayne Valdessa, sired by FINDERNE Pride Fayne a son of King Hengerveld Aaggie Fayne and the former world's

record cow FINDERNE Pride Johanna Rue, 36.87 pounds butter in seven days, 1470.59 pounds butter in one year. The dam of Pride Fayne Valdessa is FINDERNE Valdessa Korndyke, 20.84 pounds butter in seven days as a three year old, and she is by King Pontiac Segis Korndyke and out of Valdessa Scott 2nd, 41.88 pounds butter in seven days, 164.29 pounds butter in 30 days.

Waste is unpatriotic and what a vast number of livestock farmers there are who are for the most part unconsciously wasteful. One of the greatest wastes in livestock farming is made possible through the continued use of scrub sires that are not qualified by inheritance to sire offspring that will economically convert grasses and grains into meat, milk, and butter for human food. A pure bred sire in your herd is one of the best emblems of patriotism, not to mention the best kind of insurance for profits.

Final figures for the official records of two four year olds recently tested at Tulare Holstein Farm, owned by W. J. Higdon, Tulare, give Blanche Nudine Clothilde 2nd 523.1 pounds milk and 28.02 pounds butter. Princess Wynima Pontiac, owned by H. E. Vogel, Fresno, made 510 pounds milk and 21.39 butter. Both are granddaughters of King of the Pontiacs.

R. F. Guerin, Visalia, will sell all his registered Holsteins of breeding age at public auction on his farm on Thursday, April 4, 1918. This has been one of the leading herds in California for years, a herd that has earned very substantial prosperity for its owner. Mr. Guerin will keep all the heifer calves, all of which are daughters of his splendid young herd sire, Sir Veeman Korndyke Pontiac, a 30 pound son of Sir Veeman Hengerveld.

Henderson Company, Sacramento, have secured the services of Harry Smith as herdsman for their big herd of registered Holsteins. Mr. Smith is one of the most favorably known Holstein herdsmen, under his care one 44 pound record, one 40 pound record, and a large list of 30 pound records having been made. He is enthusiastic about the quality and prospects in the Henderson herd and is confident that they will demonstrate their production through some really great records.

There is an unassuming and enthusiastic young man in Yolo County California, the results of whose care have been heralded far and wide, and his name never mentioned so far as it may be understood that he is a member of the corporation. This young man is Asa Morris, Jr., the man under whose care Aaggie Acme of Riverside 2nd made her 35 pound seven day record, her world's record for a year, Changeling Tily Abberkerk Gem made her 34 pound seven day record, Aralia De Kol Pontiac Mead made her senior two year old yearly record of 934 pounds butter, the California record, Miss Valley Mead De Kol Walker made her world's record eight months after calving, Aralia De Kol Mead and Margaret Aralia De Kol made their 25 pound records eight months after calving. Aralia De Kol Pontiac Mead made her 33 pound senior three year old California class record, and last but far from least, Tilly Alcartra made her wonderful record of over 40 pounds butter in seven days. Besides this he is carrying Aralia De Kol Mead on strictly official test for a year and she will finish well up to 1200 pounds butter. Yes, Asa Morris, Jr. is a mighty busy member of A. W. Morris & Sons Corporation, and added to his energy he seems to have that rare gift of knowing cows.



## THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

## Caustic Balsam

IT HAS NO EQUAL

For — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Bolls, Corns and Bunions CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

Perfectly Safe and Reliable Remedy for Sore Throat Chest Cold Backache Neuralgia Sprains Strains Lumbago Sore Lungs Rheumatism and all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$100.00 paid in doctor's bills."

Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet B. The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.



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### ARABIAN-THOROUHBREDS

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

### MAMMOTH JACKS

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

### POLAND CHINA

AND

### BERKSHIRE BOARS

Sired by the World's Fair winners, BAKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

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Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin B'le, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.

Careful attention given to mail orders

### Whittier State School

WHITTIER, CALIFORNIA



### Easy Milking and a Full Pail

are the natural result of a healthy udder. When a cow freshens, her udder should be given careful attention. Caked lig., so likely to occur then, is quickly removed by applying Bag Balm, the great healing ointment. Sores, cuts, chaps, bruises, cracks, bunches and inflammation quickly respond to its healing, penetrating effect. Try Bag Balm and you will never be without it.

Sold by feed dealers and druggists, in large 50c packages. Send for booklet, "Dairy Wrinkles."

DAIRY ASSOCIATION CO., Lyndenville, Vt.



### HEREFORD AND SHORTHORN SALES

D. O. Lively writes of two sales soon to be held:

"The Pacific Coast Hereford Cattle Breeders' Association will hold a combination sale at the University Farm, Davis, on Wednesday, April 10, 1918. This sale will be made up of contributions by number of the Hereford breeders of California and from states on the Pacific coast. It is limited to 75 head, 40 head of which will be females and 35 head bulls. A committee will pass on the merits of all the animals offered in the sale, thus guaranteeing to attending bidders absolutely worthy specimens.

The day following the Hereford sale there will be a combination Shorthorn sale in San Francisco. Fred Reppert, the great livestock auctioneer, will officiate in the box at both events.

There never was a time when good blood in livestock was so important as now. Secretary Kinzer of the American Hereford Breeders' Association and a number of the prominent Eastern breeders have said they will be in attendance at the sale.

### GREAT BULL

That Sir Skylark Ormsby Hengerveld 39138 is a great bull is shown by his record as sent to us by Geo. A. Smith & Sons, Kings County breeders of Holstein-Friesians. Here is the record of his daughters:

The record of one daughter for seven days is 34.208 pounds of butter. The average record of five daughters for seven days is 30.537 pounds of butter; 12 daughters, 27.147 pounds; 18, 25.177 pounds; 24, 23.344 pounds. (Twenty-four being the total number of his tested daughters.) The record of one daughter for 30 days is 132.871 pounds. The average of five daughters is 114.885 pounds. The average of seven daughters is 107.05 pounds. His only daughter tested for one year made a record of 1127.27 pounds. His only daughter tested for one year made a record of 27,804 pounds of milk.

He is the only sire on the Pacific Coast to have two 30 pound daughters and a 30 pound granddaughter, all under full age.

The highest average records for seven days of five, 12, 18 and 24 of his daughters are the highest of any bull on the Pacific Coast. The highest average records for 30 days of either five or seven of his daughters are the highest of any bull on the Pacific Coast. Five records in the above averages were made by cows under full age.

### FEED DEALERS MUST HAVE LICENSE

We have received from Joseph Magner of the United States Feeding Industry Committee copy of the proclamation issued by the president on January 10 from which it is noted that all persons subject to license because of handling stock feeds must apply to the United States Food Administration, Washington, D. C. for blank forms prepared for this special purpose. Those who are subject to the license must secure license before February 15 or be liable to penalty. From the proclamation we quote as to those subject to this license:

"All persons, firms, corporations, and associations engaged in the business of (a) importing, manufacturing (including mixing and processing of all kinds), storing or distributing any commercial mixed feeds (including dairy feeds, horse and mule feeds, stock feeds, hog feeds, and poultry feeds); (b) manufacturing feeds from



Shorthorns on Dress Parade at Montana Fair

any of the following commodities or importing, storing, or distributing any of the following commodities as feeds or feed ingredients; buckwheat, kaffir, milo, feterita, broom corn, cane seed, spelt, emmer, sunflower seed, grain and seed screenings, lentils, linseed-oil cake, linseed-oil meal, beans, peas, dried brewers' grains, dried distillers'

grains, dried yeast grains; malt sprouts, baled hay, baled alfalfa, baled straw, animal or fish products, tankage; (c) importing, manufacturing, storing, or distributing as feed any products or by-products of any of the following commodities except products or by-products whose importation, manufacture, storage, or distri-

bution is already covered by a license held by any such person, firm, corporation, or association; shelled corn, ear corn, oats, barley, wheat, rye, buckwheat, sorghum grains, rice, grain and seed screenings, soya beans, velvet beans, peas, peanuts, copra, palm nut, palm kernel, sugar beets, sugar cane, hay, alfalfa, straw."

# Here's the Biggest Money Maker You Can Put on Your Farm!

That's a stout statement, but the facts bear it out. There isn't another implement made that will bring you as great return for the cost and the work as a good spreader will. You know that the question of fertility of your land is at the bottom of your success as a farmer. You cannot keep on taking crops from the soil unless you restore the fertilizing elements.

Fertilizing elements go straight down. They will not spread themselves. Therefore, if you are going to get bumper crops, you have to put manure over every inch of the soil. You can't do that by the old pitchfork and wagon method, and you can't do it with many of the spreaders offered.

I've been building manure spreaders ever since I was fifteen years old. I sold over two million dollars worth of them last year, and every one of them is giving satisfaction today. I've learned something in all these years about these machines, and I've put everything I know into building the

## NISCO

### The Original Wide Spreading Spreader

Look at its wide distribution—seven feet at least. It was the first wide spreader, and it has always held the lead. Look at the way it pulverizes the manure—so fine that you can safely scatter it over growing corn. Can you do that with any other?

Then it's light draft—easy for the team. It's low down—easy for the men. You can load the bed thirty inches high, and scatter 3, 6, 9, 12 or 15 loads to the acre.

Let me tell you that without a Nisco Spreader you are wasting your most valuable asset—the fertility of your land. With a Nisco standing where you can throw the manure from the stalls right into it, hauling it on your fields as soon as it is full, you are getting every dollar's worth of crop food right where it is needed, at the least labor, just when it is needed.

Ask any county agent, any experiment station man, what right distribution of manure will do for you.

I haven't exaggerated a bit. Thousands of good farmers have proved it themselves. Thousands know it pays to use the right kind of spreader, and that the Nisco is right in every particular.

Stop wasting your fertilizer! Feed your land and get more out of it! Let me send you my book, "Helping Mother Nature," which tells the facts about manure, and full description of the peerless Nisco, a money maker for your farm.

See the machine at the Nisco dealer's. If you don't know him, we will send you his name.

B. C. OPPENHEIM, Mgr.

### NEW IDEA SPREADER CO.

"Spreader Specialists"

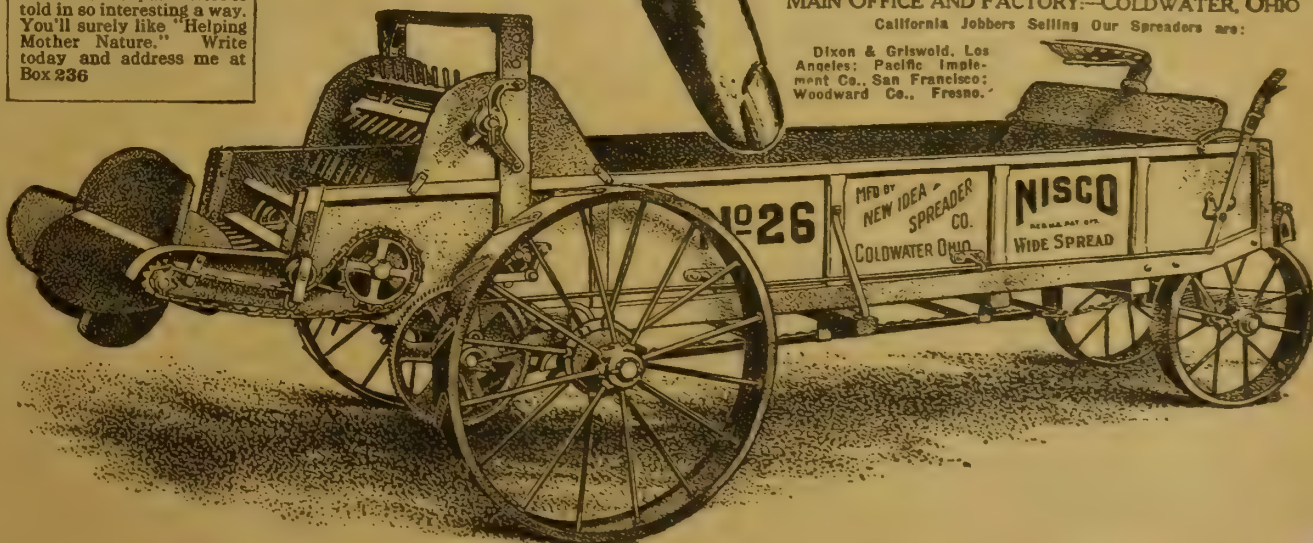
MAIN OFFICE AND FACTORY—COLDWATER, OHIO

California Jobbers Selling Our Spreaders are:

Dixon & Griswold, Los Angeles; Pacific Implement Co., San Francisco; Woodward Co., Fresno.

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They're well worth having. Our catalog tells all about the famous Nisco Spreader, and "Helping Mother Nature" reads like a story. You never saw as many dollar-saving facts collected in so small a space before or told in so interesting a way. You'll surely like "Helping Mother Nature." Write today and address me at Box 236





## Classified Liners

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### TREES

For Sale—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

Eureka Walnuts are the Best—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alhambra St., Alhambra, Cal.

Here is Your Opportunity to Secure A-1 citrus trees. We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

For Sale—Fancy and standard varieties of Grafted Walnuts and Pecans. Largest variety of Walnut grafting wood in U. S. We are the oldest and most extensive propagators of walnut varieties in the U. S. Prices reasonable. Tribble Brothers, Lodi, Cal.

For Sale—8000 Valencia Oranges and Eureka Lemons, selected stock two and three year buds on sour roots. Large stock never culled nor neglected. 65c while they last. Nursery, Montebello, opposite Grammar School, Address L. F. Thurston, R. D. 3, Orange, Sunset Telephone 35J4.

For Sale—Bartlett Pears on Japan blight resistant roots 4-6 and 6-8 ft. Placencia Perfection and Eureka Walnuts on California Black root. All stock of very best quality. Prices reasonable. Write or phone your orders now. Los Nietos Valley Nursery, Downey, Cal. Phone 692.

Let Us Show You Our Ideal twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References, R. R. Morris, West Whittier, Cal.

Placencia Perfection Walnut Trees on black root. Still have a limited supply of first class stock. Scions used in grafting taken from trees showing a high record for crop and quality after seven years of careful selection. Hugh T. Thomson, Orange, Cal. Phone 502R1.

Walnut and Almond Trees—Mayette, Franquette, Concord, and Willson Wonder on Northern California Black root. Texas prolific and Drake seedling almonds on almond root. Stock is first class, cannot be better. Write for prices. Weinstein Nurseries, Modesto, Cal.

For Sale—5000 Royal Hybrid and Black Walnut trees, two and three years old, ½ to 1½ inch caliper, 3 to 8 ft. Also Grafted Eureka and Eureka grafting wood. John Miller, R. F. D. 4, Box 278, Lodi, Cal.

Pear Trees—Offer several thousand Bartlett, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton, Ore.

By Far the Lowest Priced means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 35 cents.

Valencia, Orange and Eureka Lemon trees one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

100,000 Sour Orange Seedbed Trees—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

For Sale—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574, Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

My Olive Trees are selected for bearing qualities, also avocados, feijoa, citrus and deciduous trees. Bishop's Nursery, Highland.

Olive Trees—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwabacher, Hemet, Cal.

For Sale—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

Apricots, Olives, English Morello Cherries and Arizona Ash. First class trees. C. E. Moyer, Hemet, Cal.

Walnut Trees—Placencia Perfection, selected grafts guaranteed stock. Wm. Pollard, South Pasadena, Cal.

Fig Trees—Thrifty, large Callmyrnas and Capris. Correspondence invited. C. A. Nelson, Exeter, Cal.

Citrus Trees—All kinds, any quantity. Butler's Morning Side Nursery, Laramanda Park, Cal.

Florida Sour Orange seedlings, one year old. Write for details. Katsuragi, 23rd St., Upland, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### TREES

For Sale to Nurserymen or Large Planters—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

For Sale or Exchange—5000 Eureka lemon trees selected buds inspected stock now located Riverside County. Submit best cash offer or advise fully what you have have for exchange. Chas. S. Brown, 1318 Santa Fe Ave., Los Angeles, Telephone A-9260, Main 7464.

For Sale—Grafted Walnut Trees, Placencia Perfection, 6 to 8 feet; Eureka, 4 to 6 and 6 to 8 feet. Grafted on northern black roots and scions of known parentage used. Prices right. Address C. W. Story, Rivera, Cal.

Mission and Manzanillo Olive trees, all sizes and prices sure to satisfy. Write us at once for any amount. We want to sell. Imperial Valley Nursery & Seed House, El Centro, Cal.

Pistache Scions best imported varieties from bearing trees. Our pistache orchard largest in United States. Pecan scions finest varieties. Tribble Bros., Elk Grove, Cal.

Would like to correspond with those who want to plant strictly fruit wood, budded Eureka Lemons. No shade trees. H. Clements, Glendora, Cal.

For Sale—20,000 Sour Orange Seedlings, \$20.00 per thousand, f. o. b. our station. Natomas Company of California, care F. E. Mason, Fair Oaks, Cal.

### SEEDS AND PLANTS

Just Pure Alfalfa seed is what every planter wants. Send for a copy of our pamphlet "Important Facts About Alfalfa Seed the Prospective Alfalfa Grower Should Know" and learn just how pure seed can be obtained. Our seed is grown under different conditions. There is one best suited to your soil. Write us of your conditions and we will send you the above booklet and sample of seed we think best suited to your needs. Desk B, Bomberger Seed Co., Modesto, Cal.

•• ORDER YOUR SEEDS NOW •• If you are going to need any seed for next season now is the time to render your order. It may be impossible for you to buy what you need later. V. A. Peterson Alfalfa Seed Co., Arbuckle, Cal. ••ALFALFA SEED OUR SPECIALTY••

Alfalfa Seed—Common variety, Hairy and Smooth Peruvian. Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

Rhubarb Plants—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00, Wagner's Giant Crimson Winter \$3.00, 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

Seed Potatoes—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

Rhubarb—\$127.00 from one acre. A crop every month of the year. Write to me and I will tell you how you can do as well. J. M. Stone, Lodi, Cal., Route 4.

For Sale—Fancy Sudan Grass Seed, 95 per cent germination. 2½c per pound, postpaid in first and second zone. John Bohlen, Babbitt, Cal.

Seed Potatoes—Very fine. Selected from patch yielding 200 sacks per acre. 3 cents per pound. H. D. Carden, Victorville, Cal.

Mitchells Everbearing strawberry our specialty. \$1.00 per 100 plants, \$5.00 per 1000 plants. Primma Vista Gardens, Arlington.

Soudan Grass Seed—California grown and pure. For prices write undersigned and state quantity wanted. George Boock, Los Molinos, Cal.

5000 Yellow Calla Bulbs—Ellottiana, 5000 Asparagus roots. William Richard, Santa Cruz, Cal.

R.O.S.E.S 50 cents per dozen. Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

New Crop Alfalfa Seed now ready. Not the lowest in price, but high in quality. Leo Turner, Yuma, Arizona.

New Hybrid Alfalfa everlastingly grows thicker (not thinner) with age. Write investigate. J. L. Lawson, San Jose.

Strawberry Plants—Everbearing Northern grown, strongly rooted. Price list free. F. I. Moffett, Ellensburg, Wash.

### MISCELLANEOUS

Famous Hairy Peruvian Alfalfa Seed—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

Daily Demonstration of Distillate Vapor Machine exterminating squirrels, gophers. Price \$20. U. S. Patents for sale at 643 S. Los Angeles St., Los Angeles, Cal.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

Quality Trees, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

### WANTED

Wanted—Place as foreman. Advertiser is thorough in all lines of farming, irrigation, fruit growing and the care of livestock. Experienced in working all kinds of labor both tenant and wage system. Address Box P, Cultivator.

Wanted—Pure bred Toggenburg does, bred to pure bred Toggenburg buck. Must be registered with A. M. G. R. A. of Dayton, Ohio, J. C. Chadbourne, Suisun, Cal.

Wanted—A young or middle aged man who has had successful experience in handling hogs. Address Farm Adviser, Riverside, Cal.

Wanted—Rooted Thompson seedless grape plants sufficient for 5 acres. Lester Jordan, 422 S. Rugby St., Huntington Park.

### AUTOMOBILE ACCESSORIES

Forde Start Easy in Cold Weather if you use our 1918 carburetor; 34 miles per gallon guaranteed. One-third more power. Use cheapest gasoline or one-half kerosene. Quickly starts cold motor even at zero and moves right off with full power. No spitting or popping. Slow speed on high. Fits exactly. Attach it yourself; 30-off list where no agent. Big profits selling our goods. We fit all motors. Write for 30 day trial offer and money back guarantee. The Air-Friction Carburetor Company, 313 Madison St., Dayton, Ohio.

Titian Batteries for Service. Get our prices before buying or having an old battery repaired. Call or write. Olive Street Electrical Co., 910 South Olive St., Los Angeles, Cal.

### RABBITS

Go into Business For Yourself—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

### POULTRY

White Leghorn baby chicks. We are hatching eggs from the best laying hens in Southern California mated to cocks from Humboldt County from the best laying flock in Northern California. We have had 12 years experience hatching and can promise you fine chicks, strong and hardy, easy to raise as good as the best at less money. We know a satisfied customer comes back. We would like to please you. Lyon Hatchery, Gardena, Cal.

Baby Chicks, Ancona, Rhode Island Reds, \$14.00 per 100, Barred Rocks, \$15.00. Quality White and Brown Leghorns, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. Agent for Poultrymen's Co-Operative Association. Incubators and Brooders. Send for catalogue. D. E. Doke, 743 So. Los Angeles St., Los Angeles.

White, Brown, Buff Leghorn chicks; fine laying strains. Best of breeding stock. For next two weeks special prices; any quantity, 50 to 1000. Write for circular on all our breeds. R. I. Reds, Barred and White Rocks, Black Minorcas, Anconas at reasonable prices for quality stock. MISSION HATCHERY, Campbell, Cal.

For Sale—Pure Strains baby chicks from selected flocks, White Leghorns, R. I. Reds and Barred Rocks; hatches every week, order filled in rotation and shipped anywhere. Also Buckeye and Jubilee incubators and brooders. Stilts Poultry Supply Co., 645 G Street, San Diego.

Bred-to-Lay Barred Plymouth Rocks—The Famous Parks strain. Choice cockers direct from winners of the 5th National Egg Laying Contest. Official average 237 eggs per hen. Prices reasonable. The right blood to build up your flock. Stanley S. Foote, 3923 San Rafael Ave., Los Angeles, Cal.

For Sale—Lo-Glo, Electric Incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2223 Greenleaf St., Santa Ana, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

Huddleston Blue Andalusians, great winning and laying strain. Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

Petaluma Hatchery—Can ship day old chicks to points reached in three days. Why not have the best. We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

Am Booking Orders for chicks from Barred Rocks, R. I. Red and White Leghorn stock for spring delivery. Send for circular. Madera Hatchery, Madera, Cal.

Chix—Buff, Brown, and White Leghorns (Barron strain). Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campbells and breeding cockers. Enoch Crews, Seabright, Cal.

Baby Chicks (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery Schellville, Cal.

Baby Chicks from Forney's famous heavy laying strain of Single Comb White Leghorns. \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorcas, and Buff Orpington chicks with the Stevenson Hatchery, Watsonville, Cal.

Baby Chicks—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

White Wyandottes—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynier Lathrop.

Buff Leghorn Eggs \$1.50 per 15; \$9 per 100. Mrs. H. W. McClure, Glendale, Ariz.

### POULTRY

Order Now, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh cut bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

Big Profit Now Raising Our 200-290 Egg Leghorns, Minorcas, Anconas, Rocks, Reds, Wyandottes, Orpingtons, Brahmas, Ducks. Thousands chicks, eggs, weekly. Reduced February. Laying pullets, hens. MALES HALF PRICE. Many repeat orders. Hundreds customers making money. One cleared \$305 on 48 hens, another \$617 on 110 last year. C. Beeson, Pasadena, Cal.

Baby Chicks and Eggs—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

Baby Chicks from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

For Sale—Wyckoff & Son White Leghorn cockerels for sale \$3.00 and up, 3 Ancona cockerels \$3.00 and up. A few Wyckoff pullets \$2.00 and \$3.00. Eggs for setting from the following strain, Scranton R. I. Reds, Wyckoff & Son, Ancona strain Sheppard, 1 Buff Orpington cock won at local fair first. R. Keyland, East Bakersfield, Cal., Box 47, 431 Quincy St.

Model Poultry Farm, White Leghorn Specialists, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

Baby Chicks—All good strong youngsters. Hatches every week. White, Brown and Buff Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

Baby "Chicks" and Eggs for Hatching from pure-bred McFarland strain S. C. White Leghorns. Carefully culled and Hoganized for heavy egg production, not simply "CHICKS" but stock as well. Sonoma Valley Hatchery & Poultry Yards, Sonoma, Cal., R. D. 2, Box 48, E. J. Hansen, Prop.

Spring Chicks—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

White Leghorns—White Rocks—Highest class of thoroughbred stock. Chicks, Leghorns, \$15.00 per 100. Rocks \$20.00 per 100. Eggs \$2.50 per 15. \$10.00 per 100. Eggs from special pens of high class exhibition type \$5.00 per 15. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

Baby Chicks—Leading varieties. We guarantee safe arrival and full count; strong vigorous chicks from the finest flocks of free range stock in this country. 1918 price list and instructions on care of baby chicks, if you mention this paper. Lasher's Hatchery, Petaluma, Cal.

Ceres Jubilee Hatchery is now booking orders for S. C. White Leghorn Chicks, also a few choice cocks and cockerels for sale. All eggs used are from our own stock. Send for price list. H. L. Brown, Ceres, Motor Route A, Box 22.

East Side Poultry Yards will hatch little White Leghorns from two and three year old stock, quality and price will suit. The party that rears chicks this year is wise. E. J. Look, 255 S. 18th St., San Jose, Cal.

For Sale—Buff Orpington and Buff Leghorn cockerels and cock birds. Two fine matings of Buff Orpingtons. Eggs for hatching from excellent matings. Limited number of Buff Leghorn baby chicks. W. L. Bartholomew, Chino, Cal.

Baby Chicks—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

Hatching Eggs—S. C. White Leghorns. Bred-to-lay Hoganized birds from Pine Tree Strain. Fertilized guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns. Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

White Rocks, White Leghorns, "Quack-less" White Muscovy dux, White Embden goslings, stock, eggs and babies. Stamp for prices. White Star Hatchery, Kerman, Cal.

10,000 R. I. Red Baby Chicks Per Month, first class stock, \$12.50 per 100, 500 for \$60. We do not ship less than 100. Order early. Can ship every Monday. A. G. Rowe, Inglewood, Cal.

Winter Laying S. C. Reds, linebred from New York, Los Angeles and laying contest winners. Choice cockerels \$5 and \$10. Eggs \$3. W. M. Marquam, Bishop, Cal.

"Eastman's Bred-to-Lay" Hoganized, Trapnested, Barred Plymouth Rocks, Spring Chicks, Eggs. Fairmead Poultry Farm, Fairmead, Cal.

Buff Orpingtons, Buff Ducks, Bourbon Red Turkeys. Hatching eggs; baby stock; mating list. The Ferris Ranch, S. Reservoir, Pomona, Cal.

Trapnested White Leghorns—Ours were the only California 200 egg layers in 1917. All Northwest Egg Laying Contest. Hudson Poultry Farm, Escondido, Cal.

For Sale—A few choice White Orpington cockerels. N. H. Vogt, Vacaville, Cal.



**HOGS**

**The Billiken Brand of Chester Whites**—There is right now a big shortage of swine in California. The output of 1917 will show even a greater shortage unless the farmers of this state get busy and raise more hogs. Good breeding stock is scarce and hard to get. **THE BILLIKEN BRAND** represents the best obtainable; they are of that mellow type that mature early and are such satisfactory easy feeders. Get started with this strain and help out the Food Administration and your own pocket as well. Write me your wants—do it today. I can still furnish first class animals at reasonable prices. C. B. Cunningham, Mills, Cal.

**Grape Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more boars left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 27th, and a few bred gilts. Our herd won the Premier Breeders' Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massave Orange. Watch for the sensational offering of sows bred to this great trio which sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal., W. Bernsteins, Proprietor.

**Large Type Poland-Chinas**—The hog for the farmer if he wants to make money. I have the best lot of weanlings that I have ever seen and they are sired by my boar, Long Smooth Jumbo and if he keeps on growing the way he is, his name will soon be too small. H. Christiansen, R. D. 4, Riverside, Cal.

**Superba, World's Grand Champion Poland-China boar** and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Duroc-Jerseys**—Sold out of bred gilts. Two service boars. One of them an outstanding individual for sale. Also Fall Pigs, both sexes. Twenty-three ribbons on 11 entries, including 6 champion-ships, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 116, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles.

**Duroc-Jerseys**—The blood of champions such as Defender, Orion Chief, Taxpayer "13," Golden Model. A few choice fall gilts of Grand Champion Breeding at reasonable prices. T. R. Bond, Tipton, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**Recorded Poland-China boar**, 18 months old, sired by Superba. Bargain at \$50.00. Immured, and tried breeder. C. R. Hanna, Riverside.

**PLW Durocs**—Eastern selections made by R. K. Walker in January. Peters, Lamson & Walker, Devore, San Bernardino County.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Should Like to Dispose of 1000 hogs**, or hog feeders, weigh 75 to 150 lbs. Address E. F. Sanguinetti, Yuma, Arizona.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Shasta County, Cal.

**Berkshires**—Sired by Star Leader, the \$1,500 boar, ready for service. Kounias Registered Stock Farms, Modesto.

**Durocs**—P. & L's Defender by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

**TURKEYS**

**Just One Grand Champion Sweepstakes** Special offered for the best pair of turkeys in the show at the California State Fair, 1917, and that prize was won by GOLD NUGGET STRAIN GIANT BRONZE TURKEYS. They again proved their superiority by winning at three great shows, California State Fair, 1917, Texas State Fair, 1917, Los Angeles, 1918. Gold Special Sweepstakes at all three shows. Each judge pronounced them the best in the show, all breeds competing. Remember it was the Gold Nugget Strain that won at America's greatest turkey show, World's Fair, San Francisco. Three prizes on four entries. Large turkeys can be raised at practically the same cost as small ones. My toms will give you an increased weight of five pounds the first year. Either stock or eggs will give you vitality, size and beauty. Address all communications to J. Will Blackman, 607 East Third St., Los Angeles, Cal.

**Mammoth Bronze Eggs** our specialty. "Gold Nugget" and other strains of Mammoth type, also Collie Pups. John G. Mee, St. Helena, Cal.

**Three Bourbon Red Toms** eight dollars each. S. C. Rhode Island Red eggs, \$1.50 a setting. Mrs. G. F. Smith, Hardwick, Cal.

**Giant Bronze Turkeys and Eggs**—Choice breeding stock. M. M. Reiman, Planada, Cal.

**For Sale**—White Holland Turkeys. Fine breeding stock. \$5.00 each. 185 S. Aurora Ave., Watts.

**CATTLE**

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., Cal.

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies**. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**45 Hereford Bulls (Weaners)**—All purebred mountain raised, priced around \$125.00 head. Not blowed up with fat and air to sell them but in their everyday clothes. You won't be disappointed when you see them as they are as good as lots of people will ask around \$300 for. C. B. Johnson, Raymond.

**For Sale**—Registered Guernsey bull calves out of high producing cows and sired by splendid bull. Reasonable prices and terms. Use a Guernsey bull on your grade cows and secure heifers that will produce butterfat at real profit. Elm-dale Guernsey Farm, P. J. Weisel, Santa Fe Springs, Cal.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

**Registered Holsteins** out of A.R.O. Dams. Grandsons of King Korndyke Henger-veld Ormsby who has 20 A.R.O. daughters with records of over 29 pounds. Look up this sire. Geo. Kounias, Modesto Farms, Modesto, Cal.

**D. O. Lively Stock Farm, Inc.**, 215 Hobart Bldg., San Francisco. Breeders of Hereford cattle. A few choice heifers for sale. We buy and sell live stock on commission. Farm at Mayfield.

**Veramont Stock Farm**—Pure Bred Herefords. Only 2 pure bred and 2 grade bulls left. One 11 month Hampshire ram. Prices right. H. M. Barngrover, San Jose.

**Am Offering Registered Holstein A. R. O.** cows and bulls of serviceable age. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chico, Cal.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires (registered)**—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Ariz.

**Young Holstein Bulls**, bred right, grown right, priced right. Creamcup Herd. M. Holdridge, Modesto, Cal.

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. L. E. Greenough, Merced.

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Tanks most all sizes from 20 gals. to 25,000 gallons, in both redwood and iron. Several mouldboard and disc riding plows, drills, tanks, pumps, sundries, single, two, three, four and five gang. Few snaps as follows: Single 14-inch Moline riding sulky plow, never in ground, \$58.50; two gang 14-inch new plows, \$78.50; two gang disc, \$58.00; three gang disc, \$85; four gang disc, \$95; five gang disc, \$95; drills, Beet, Bean, Grain—6, 8, 10, 12 ft. sizes. Several orchard cultivators and disc harrows, windmills, tanks, pumps, sundries too numerous to mention. Our experience in knowing how and what to buy, how to handle where to sell, with our extensive advertising that has cost \$15,000 over a period of 15 years is why we succeed and give our customers more for less. DEMMITT CO., 120 N. Main St., upstairs, Los Angeles.

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**For Sale**—32 H. P. Fairbanks Morse gasoline engine, almost new, also pump, belting, galvanized tanks, full equipment. Great bargain, price six hundred. A. S. Huhn, Glendora, Cal.

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**ENGINES**

Several New and Slightly Used Engines, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

**OAT AND PEA SILAGE**

The University of Wyoming has been making an investigation of silage for beef cows and growing cattle and has found that oats and peas planted together make an excellent combination. The report of these investigations does not exactly apply to California, but it may have some hints. The digest and resume of the experiments follows:

Oat and pea silage may be used to advantage in winter rations for beef cows.

Feeding tests with beef cows seem to indicate that oats and pea silage may be substituted for good alfalfa hay in about the proportion of two pounds of silage to one of hay.

In rations for growing cattle, the introduction of oat and pea silage greatly cheapens the cost of grains.

Silage, when used to replace part of the hay in rations for growing cattle, had a value far in excess of the four dollars per ton at which it was figured in cost estimates.

Even with a lower amount of digestible material in their rations, the cat-

tle getting silage made heavier gains. Oat and pea silage fed with alfalfa hay in rations for growing cattle was worth practically as much as the alfalfa.

**QUESTIONS AND ANSWERS**

Continued from Page 171

aged as any other banking business. The government makes a certain advance of funds to start the business and expects the people of the United States to purchase bonds of the federal bank with which the business may be maintained and money advanced to the farmers. Hence the one first duty of the management of the bank is to so manage the business that confidence will be established in these banks. This cannot be done unless the banks use great care in the risks taken. In order to determine what risks should be and what should not be taken an appraiser is appointed by the branch bank at Berkeley to investigate appraisement made by the local committee of each association. The decision of this appraiser is final. We believe the appraiser and the management are endeavoring to be absolutely just in rendering these decisions, but in making the decisions the only consideration is the actual agricultural value of the lands in question. Personality of the owner or his ability to make a success, even on poor lands with limited water, are not considered in the slightest degree. A 36 year loan is safe when made by a government bank to no greater degree than one made by a private bank. Hence the demand for intrinsic worth in the lands.

**Spray for Curl Leaf**

Have small orchard miscellaneous fruits for home use. Nearly all the peach trees, especially the Albertas, had curl leaf last year. What should I do to prevent this the coming summer?—Subscriber, Long Beach.

Spray with Bordeaux full strength, that is 5-5-50. Instructions for making have been given many times, especially in Spray Special, November 4, 1915. Be sure and do this before buds begin.

**Vines Dying**

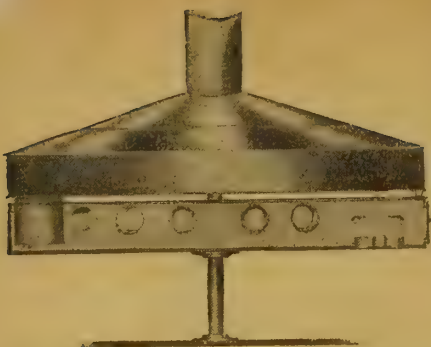
Would it be advisable to spray my grape vines while dormant with Bordeaux mixture, since a few died during last summer, while others partly died and still others were not thrifty. Would you recommend some other treatment? Is so, what? They were pruned, fertilized with horse manure and also irrigated several times during last season.—Subscriber, National City.

Grape vines have a habit of just dying, and without knowing more it would be impossible to give cause of the trouble in this vineyard. All that can be done is to keep the soil in best condition, give proper pruning and watch for results. Of course it is presumed there is no phylloxera, but there is the mysterious Anaheim disease and other troubles which may come up in vineyards. Spraying with Bordeaux will aid in keeping down mildew and other fungus diseases.

**STATE DAIRY REPORT**

The report of the state dairy bureau shows a material lessening in the monthly receipts of butter at San Francisco last year from the receipts of 1915-16. The total for the year beginning October 1, 1915 was 27,877,700 pounds, while the total for the past year was 25,362,500 pounds. On the other hand, the price of butter for the year 1916-17 was nearly ten cents per pound above that of the preceding year. The production of various counties in the state likewise shows a decrease. The production for the year 1915-16 was 70,030,174 pounds, while for the year ending last October it was 68,373,021 pounds. Both the two big dairy counties, Stanislaus and Imperial, show material decrease. Stanislaus produced in 1915-16, 9,980,021 pounds and it dropped something over a cool million pounds the next year when she produced 8,935,964 pounds. Imperial showed a somewhat lesser decrease from 6,780,552 to 6,245,487 in the year ending last October. Fresno, Humboldt, Kings, Merced, San Luis Obispo, Sonoma all showed an increase. Kings showed the most pronounced increase from 3,960,949 in 1915-16 to 4,165,315 in year ending October, 1917.





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Petaluma

California

## A Chance for the Chick

Written for California Cultivator By Jean A. Koethen



THIS one thing to start a brood of chicks right and quite another to keep them going after they are started.

One of the poultry books to which I pinned my faith years ago says: "The chick that is properly handled the first week of its life is practically half raised." This assertion must be taken with more than one grain of salt. A sentence which follows is so true, however, that every novice in poultry raising ought to write it in big letters and post in conspicuous places about the ranch: "The proper conditions may never be expected to exist with a lot of chickens that have been improperly handled the first week." Chicks that have been chilled or improperly fed the first four days are stunted from that time on. Some of those that have "pasted up behind" may live and for a time seem to make a normal growth, but sooner or later they begin to lag behind the rest, and if they live to maturity are nothing but runts.

The life of chicks divides itself naturally into three periods: The first five days, from the sixth day to the end of the third week; and from the end of the third to the end of the eighth week. After this time it is no longer a chick, but a chicken. During the first period warmth is the great essential. During the second period warmth and nourishment are of equal importance. The chick must take on considerable flesh, for it ought to double its weight the first month. If it falls behind now it never catches up. During the third period, rapid and symmetrical growth is the end aimed at. The feed is of immense importance, but the kind of feed is more important than the amount. More important even than the right kind of feed is the chance that must be given the chick to make the right use of the feed it gets.

I would like to call the essential of this second month's care a "chance" for the chick, for I am fully persuaded that more chicks die during this period than during those perilous first five days, and the reason for death is simply that they have no fair chance to live.

Four things are of prime importance during the second month: feed, cleanliness, room and exercise.

The chick, we must remember, is growing, and if he is to be a profitable investment, he must grow as rapidly as possible. He must also grow symmetrically. He cannot put on flesh till he has something to put it on, hence, bone making foods are of vital importance. He must also build muscle, for without muscle he cannot exercise and make the most of his food. Bone meal for strong bones, oats in various forms for both bone and muscle, bran and a variety of grains for flesh, green feed to keep the digestion in order, all are important at this period. There is nothing better for growing chicks than a liberal supply of oats. The pinhead oatmeal of the first week may be changed to bulk rolled oats the second week, and the bulk oats, when they are no longer fed alone or mixed with bread crumbs in the moist mash, may be mixed in the dry mash, with the bran and corn meal and middlings. Most chicks will eat sprouted oats before they are a month old, and these may be given freely. All chicks at this age ought to have cracked corn,

which is the best of fat makers, but this year many chicks will have to do without corn. I remember visiting one successful poultryman who fed his growing chicks practically nothing but beef scrap and a coarse grade of corn meal. As the chicks grew a coarser grade of meal was given.

During this time of rapid growth a moist mash, mixed, if possible, with sour milk, and fed once a day, is a great help. The chicks are always eager for it and whatever stimulates the appetite also stimulates growth. We want the chicks to eat all they can digest, and they will always eat more of the things they like best. Many chicks thrive and grow on a ration of dry mash and whole grain, but they will grow faster, other things being equal, with an occasional meal of moist mash.

A variety of hard grain should be given as soon as the chicks will eat it. From the third week on a little milo maize, Egyptian corn, cracked corn and whole wheat may be mixed with their chick feed. As they learn to eat it the proportion may be increased until the chick feed is omitted altogether. It is easy to keep chicks too long on the small grains. They need the larger grains, and these cannot be fed too soon.

Where one chick dies of indigestion during the second month, or is stunted because of improper food, a thousand die from the assaults of insect pests. When a chick five or six weeks old begins to look droopy, don't get out your poultry doctor. Clean out the coop. Never mind whether you see mites or not. Hose it out thoroughly, then paint with kerosene and crude carbolic acid, one part acid to four of kerosene. Don't do this once and leave it. Once the mites are there, the coop must be painted once a week, sometimes oftener if the weather is warm. There may be lice as well as mites. As a rule, we remember to dust hen and chicks when the hatch comes off but forget to repeat the dusting. By the end of a month the lice are on hand again. Few chicks are hardy enough to survive the constant teasing of lice or the blood-sucking of that worst of pests, the little red mite.

A month old chick occupies almost twice as much space in the brooder as a day old chick, yet how many amateur poultrymen expect the chicks to go on occupying the same quarters indefinitely. If half as many chicks are put in a brooder as it is supposed to hold, it will be two months before they fill it, but sooner or later they must have more room. Chicks with a hen are more fortunate. Unless the coop is far too small in the beginning they can continue to occupy it as long as the hen mothers them. After they are put in cold brooders, which is about the end of the second month, the same care must be exercised to prevent overcrowding that is necessary with brooder chicks.

Overcrowding and its corollary, lack of ventilation, are responsible for the stunting of many chicks. The very young chick needs warmth more than it needs air. As it grows fresh air becomes just as vital to its existence as food or warmth. The mother hen with her brood should be in an open front coop. If protection is necessary, the ever useful burlap sack may be hung in front for a curtain. The only way to find out whether a coop or brooder



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Has the highest protein at the lowest price \$3.15 per 90-lb. bag, subject to market changes; see that your hens eat as much Dry Mash as they do grain; feed them lightly of grain in the morning and make them work for it; either have a scratching pen or spade up a part of the ground and rake the feed under; keep "A-1" Dry Mash in a dry form before them all day; about one hour before feeding them their grain in the evening WET their Mash and let them eat all they will; put it on top of the Dry Mash, then feed them all the grain they will eat; this stuffing process will give them a full crop to carry them through the long night of inactivity; analysis is printed on every bag; give it a trial. At your Dealers or

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We are selling out our line of Mandy Lee Incubators. While they last we will offer the 140 egg Mandy Lee Incubator for \$16.00, F. O. B., Los Angeles. These machines are a snap at this price. Six patented and distinctive features. Absolute satisfaction guaranteed. A few of the other sizes for sale. WRITE FOR CATALOGUE.

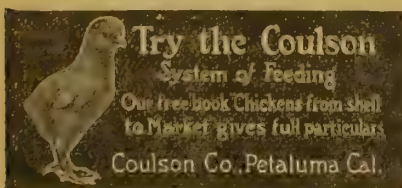
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Casing—3, 3 1/2, 3 3/4, 4, 4 1/2, 4 3/4, 5, 5 1/2, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6 3/4-inch 20-lb. test thread.

Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 inch.

All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

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We offer the  
Best 125-egg  
Hot Air  
Incubator Made  
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We have limited stock of this wonderful hatcher and need the room for other goods, so order now before stock is exhausted.

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## Petaluma Incubators and Brooders

Electric, Hot Air and Hot Water. They are all good but the Electric is a World Beater, being a marvel of accuracy by self regulation. Can be attached to any electric wire of the ordinary voltage for house lighting purposes. Write for catalogue.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.



is sufficiently ventilated is to put your head in. If the air is not such as you would care to sleep in be sure the hen and chicks do not like it any better. The heat of the hen's body is six or eight degrees higher than that of the human body. She can keep her chicks warm without help in the coldest weather.

Fewer chicks than usual will be raised this spring, so the few will have plenty of room to run. Making them scratch in deep litter or jump up to peck at a kale leaf is all right if you have nothing better to offer, but when there is all out-doors to run in, do let them run. Shut up the hen. She is the one that scratches up the garden. It will be a long time before the chicks do any damage, and they will not go far if she is confined. Exercise keeps the chicks growing and develops the egg organs of the pullets. A yard full of chicks sitting round in the sun waiting for something to happen is a sorry sight. Give the chicks a chance to grow and a chance to sleep and a chance to run. You may not raise so many but they will be better birds and less trouble.

#### HATCH EARLY

The department of agriculture is sending out a large hanger with photographs of early and late hatched pullets. These photos were taken in June, July, September and at maturity. On the hanger are such catch phrases as; "Have eggs when eggs are scarce," "Hatch early," "Early hatched pullets are winter layers," "Begin hatching February 1 in the South and March 1 in the North and West," "Complete hatching by May 1," "Chicks hatched early are stronger and have the advantage of a longer growing season," "Hot weather retards the growth of chicks, which, with presence of lice, causes millions of late hatched chicks to die early," "Produce fall and winter eggs."

#### STORRS EGG LAYING CONTEST

Storrs, Connecticut, January 25, 1918. Report for the twelfth week ending January 23, 1918.

Cold weather has continued so long that the hens in the laying contest seem to have acquired at least partial immunity. Nearly every pen is in fine condition; the birds have nice red combs; fresh litter has been put into the houses and the scratch grain has been feed oftener than usual during the past few weeks. In short the management has tried to keep the hens busy, because the busy hen is the happy and the productive hen. In the twelfth week the birds laid a total of 2086 eggs or 500 more than for the preceding week and while such rapid gains can not be expected each week, still it is believed that the egg production will continue to rise for the next three months.

The contest birds are not of course mated. They are pullets and would not be used for breeders. For those, however, who intend to hatch chicks the time has arrived when the birds should be mated. It is true that one can get fertile eggs within four or five days after the introduction of a male, but in general it isn't safe to wait until the last minute. It is better to mate the birds several weeks ahead of the time that the eggs are to be used for hatching.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francals, 326; Rock Rose Farm, 302; Rodman Schaff, 259.

#### White Wyandottes

Obed G. Knight, 392; Brayman Farm, 376; F. W. Harris, 320.

#### Rhode Island Reds

Pinecrest Orchards, 332; Richard Allen, 294; Allan's Hardtoeat Reds, 238.

#### White Leghorns

Braeside Poultry Farm, 331; J. O. LeFevre, 331; Hollywood Farm, 305.

#### Miscellaneous

Cook & Porter, (Buff Wyandottes), 382; Oregon Agricultural College (Oregons), 349; H. P. Cloyes, (Buff Wyandottes), 294.

#### TO ERADICATE POULTRY PARASITES

The first step to eradicate the pests which live in cracks and crevices in poultry houses is to thoroughly clean the house. All litter, nest material and droppings should be removed. Then spray or paint thoroughly the entire surface of the house and literally flood all cracks and inside of nests with a five per cent solution of cresol. Use plenty of spray and do the work thoroughly.

Finally it should be remembered that one application of either of these treatments is not sufficient. Where there are lice and mites there are also eggs or "nits" of these same pests. A second treatment should be given about one week after the first. By this time the "nits" will be hatched and the treatment will affect them while it did not kill the "nits" at the first application.

These suggestions followed out will relieve the hen of the greater number of parasites and will enable her to make the best possible use of her feed and time. It is not profitable to feed a hen when lice or mites are sapping all the nourishment and vitality from her body.—P. F. Schowengerdt, Colorado Agricultural College.



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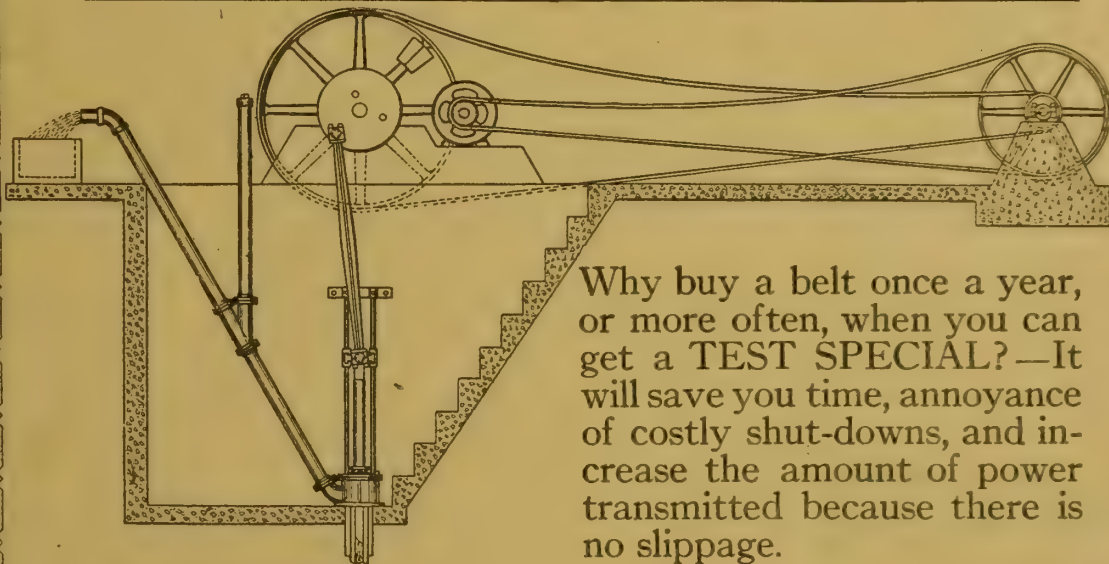
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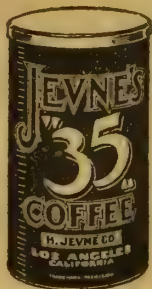
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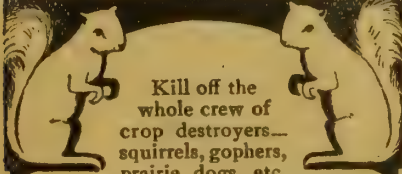
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and savory—that's the time you  
appreciate the fact that a reput-  
able brand of Coffee is the cheap-  
est—it goes further and is always  
fresh.

Your grocer will supply you  
or write us

**H. JEVNE CO.**

LOS ANGELES

**Gas 'em!**



Kill off the  
whole crew of  
crop destroyers—  
squirrels, gophers,  
prairie dogs, etc.

Gas 'em with Carbon Bisulphide  
quick'y, easily and economically.

One burrow of squirrels will des-  
troy more grain than your family  
can save in fifty wheatless days.  
Remember—these ground pests cost  
the farmers of the Pacific Coast more  
than \$6,000,000 last summer. So be  
forehanded—be truly patriotic—con-  
serve the seed in your fields.

The University of California says: "From  
November until the end of February (the rainy  
season in California) the best way to attack  
the ground squirrels is to fill their burrows with  
gas from Carbon Bisulphide."

So too in other states! If the ground is full of  
moisture, whatever the month may be, Carbon  
Bisulphide is the best killer of squirrels,  
prairie dogs, gophers, etc.

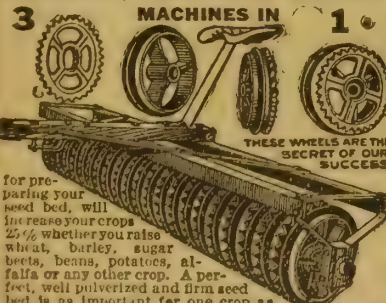
A squirrel killed before March is worth a dozen  
killed later. Because—most young squirrels  
are born late in March or early in April. So—  
gas the old squirrels now. Write today for  
prices and interesting folder telling how Carbon  
Bisulphide—the profit-saver—works.

**WHEELER, REYNOLDS & STAUFFER**

626 California Street  
San Francisco, California

**Use CARBON  
BISULPHIDE**

**USE THE WESTERN  
PULVERIZER, PACKER AND MULCHER**



for pre-  
paring your  
seed bed, will  
increase your crops  
25% whether you raise  
wheat, barley, sugar  
beets, beans, potatoes, al-  
falfa or any other crop. A par-  
fect, well pulverized and firm seed  
bed is an important factor for one crop as  
for another. The Western pulverizer and packs as  
deep as plowed and leaves a loose mulch on top to  
protect the moisture; saves 1-3 of expensive seed  
and time, labor and horse power in preparing a  
seed bed. It is especially adapted for breaking crust  
and cultivating winter wheat in the spring, or for  
breaking crust on sugar beets or beans either be-  
fore or after they are up without injury to the plants.

**MADE IN 12 SIZES, FOR HORSES OR TRACTOR**

**USE IN 1 AND 3 SECTIONS**  
1918 crop will bring war prices; make it a record  
breaker in size by using the Western. Send for  
our free illustrated catalog, giving full description  
of the machine and its work, also dealer's name  
and much other valuable information.  
Western Land Roller Co., Box 323 Hastings, Neb.

Western Pulverizers in Stock Write For Price

**ARNOTT & COMPANY Inc.**

112-118 South Los Angeles Street  
LOS ANGELES

When writing advertisers, mention the Cultivator.

## Los Angeles Market

Los Angeles, Feb. 6, 1918.

### BUTTER

Produce Exch. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....48  
Dairy Exch. prices past week:  
Jan. 30 31Feb. 1 2 4 5  
'18 50 51½ 49 48 48 48  
Rets. wk. ending Feb. 5, 273,300 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....30  
Tillamook Trip .....27  
Domestic Swiss .....33

### EGGS

Exchange quotations. Prices to re-  
tailers 2 to 4 cents higher.  
Fresh extra .....50  
Pullet .....48  
Case Count .....49  
Dairy Exch. prices past week:  
Jan. 30 31Feb. 1 2 4 5  
'18 50 50 53 53 50 50  
Rets. wk. ending Feb. 5, 2250 lbs.

### POULTRY

We quote to producers:  
Broilers .....34@35  
Fryers .....32  
Hens—Leghorns .....26@27  
Roasters, 3 lbs. and up .....28  
Ducks, lb. ....27  
Roosters, old .....17  
Turkeys .....28@30  
Geese, lb. ....25

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning Febru-  
ary 6, by the Cudahy Company.

**Cattle**—  
Beef steers, av. 1000 to 1100 lbs. 8.50@9.00  
Heifers, good .....6.00@6.50  
Cows, good .....5.50@6.00  
Canners .....4.50@5.00

**Hogs**—  
Av. 125 lbs. ....14.50  
Av. 150 lbs. ....15.00  
Av. 175-200 lbs. ....15.50  
Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent. ....9.50@10.00  
Prime wethers .....9.00@9.50  
Ewes .....14.00@14.50  
Lambs .....10.50@11.00  
Yearlings .....10.50@11.00

### POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....1.75@2.15  
Russets .....1.90  
Salinas .....2.50  
Sweet, sk. ....4.25@4.50

### ONIONS

Wholesale selling price:  
Brown .....2.50  
White .....3.00  
Garlic .....6

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....90@1.15  
Beans—String, lb. ....25  
Limas, lb. ....25  
Ky. Wonder .....20  
Beets, sk. ....1.65  
Brussels Sprouts, lb. ....12@14  
Cabbage, lb., 3½; sk. ....2.25  
Red, lb. ....4½  
Carrots, doz. ....30  
Cauliflower, doz. ....75  
Celery, doz. ....80@90  
Cucumbers—Hothouse, doz. ....1.75  
Egg Plant, lb. ....15@16  
Horseradish, lb. ....15  
Lettuce, doz. ....30  
Leeks .....30  
Mint, doz. ....40  
Mustard, doz. ....20  
Onions, green, doz. ....25  
Oyster Plant, doz. ....40  
Peas, Tel. lb. ....12@15  
Peppers, lb. Bell, 26; Chili .....18  
Parsnip, doz. ....40  
Parsley, doz. ....20  
Pumpkins, lb. ....3  
Radish, doz. ....25  
White .....25  
Rhubarb—Strawberry .....1.25@1.35  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Crookneck .....70@75  
Hubbard, lb. ....2½  
Tomatoes, lug .....2.00@2.25  
Turnips, doz. ....35  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.50@1.75  
Greenings .....1.85  
Jonathan .....1.80@2.25  
King David .....1.75@2.00  
W. W. Pearmain .....1.40@1.85  
Spitzenberg .....2.00@2.65  
Y. Newton .....1.35@1.75  
Avocados, doz. ....6.00@9.00  
Bananas, lb. ....5  
Pears, Winter Nellis, lug .....2.00

### CITRUS

Lemons, 4.25@5.00; juice .....3.00  
Grapefruit .....3.00  
Limes, basket .....1.00  
Oranges—Navels, bx. ....4.50@5.00  
Tangerines, lb. ....8

### DRIED FRUITS

These are not prices to producers but  
prices made by wholesalers to retailers.  
(25-lb. bx., faced, 50s, ½c less.) App-  
les, evaporated, 50s, 16; extra ch., 16½;  
apricots, ch., 18; extra ch., 18½; fy., 19;  
pears, 13; peaches, ch., 12; fy., 12½;  
peeled, 15; citron, 30 lb.; lemon peel, 25;  
orange peel, 25; prunes, 20-30s, 17; 30-  
40s, 13½; 40-50s, 12½; 50-60s, 11½; 60-70s,  
11; 70-80c, 10½; 90-100s, 9½.  
Figs—Bulk, 25 lb. bx., blk. \$2.75, wh.  
\$2.75; Calimyrna, 10 lb. bx., \$2.25.

### NUTS

Almonds—Not growers' prices but prices  
of wholesaler to retailer.  
I. X. L. ....24  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....16  
Pecans, lb. ....19  
Pecans, lb. ....20  
Walnuts—Cal. Walnut Growers' Associ-  
ation named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20

No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size  
as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

### HONEY

Prices of wholesaler to retailer:  
Extr. W. W., lb. ....20  
Comb. W. W. case .....5.00  
Light Amber, case .....4.75

### RICE

Wholesale quotations:  
Cal. ....\$7.50  
Broken .....5.60@6.00

### BEANS

These are prices made by wholesaler to  
retailer.  
Lady Washington .....13.00  
Limas .....13.00  
Pinks .....8.75  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....13.00  
Blackeyes .....9.00  
Tepary .....9.00@10.00  
Lentils .....25.00

### HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oats .....28.00@30.00  
Volunteer Oat .....18.00@20.00  
Wheat .....26.00@29.00  
Barley .....27.00@30.00  
Alfalfa .....27.00@29.00

The Alfalfa Growers' Association of  
Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where  
the \$1.50 freight rate applies, and \$29.00  
f. o. b. where the \$2.50 freight rate ap-  
plies.

### GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal .....2.20  
Alfalfa Molasses .....2.30  
Barley, Rolled .....3.50  
Barley, Recleaned Whole .....3.55  
Barley Hulled .....4.15  
Beet Pulp .....2.25  
Bran, (Light) 65 lb. sk. ....1.95  
Cocoanut Meal .....2.75  
Cottonseed Meal .....3.50  
Corn, Yellow .....4.45  
Corn, White .....4.45  
Corn, Cracked .....4.50  
Corn, Egyptian .....4.05  
Corn Feed Meal .....4.55  
Mixed Feed (80 lb. sacks) .....2.12½  
Milo, Maize, Field Run .....3.70  
Oat Chop .....1.90  
Oats, White .....3.70  
Oats, Rolled White .....3.75  
Oats Hulled .....4.75  
Oats Rolled Chicken Groats .....4.85  
Oats Eastern Red .....3.70  
Oilcake Meal .....3.85  
Red Dog .....2.65  
Rye .....4.25  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Buckwheat .....5.00@5.10  
Canada Peas .....6.40@6.50  
Charcoal, 50 lb. sk. ....3.40@3.50  
Clam Shell .....70@95  
Grit Granite .....75@85  
Hemp .....5.50@5.60  
Oyster Shell .....1.35@1.45  
Red Millet .....4.65@4.75  
Sunflower Seed .....5.15@5.25  
Soya Bean Meal .....3.50@3.60  
Scratch Feed .....3.90@4.00  
Scratch Gritless .....4.10@4.20  
Vetch .....5.10@5.20  
Rice Bran, ton .....40.00  
Middlings, ton .....45.00  
Rice Polish, ton .....49.00

## San Francisco Markets

San Francisco, Feb. 5, 1918.

### BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:

Two-pound squares, parchment wrap-  
per, ½c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.

Dairy Exchange quotations, lb.:  
Fresh extras .....50½  
Dairy Exch. quotations past week and  
year ago:

Jan. 29 30 31Feb. 1 2 4  
'18 52 51 50½ 50½ 50½  
'17 39 39½ 40½ 41 43½  
Rets. wk. ending Feb. 4, 619,300 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25½. Y. Am. ....26½@27½  
Ore. Young Am. ....27½  
Jack cheese, full cream .....26@27  
Half skim .....14@17

### EGGS

Extra .....61½  
Selected Pullets .....57  
Dairy Exch. quotations past week and  
year ago:  
Jan. 29 30 31Feb. 1 2 4  
'18 59 58½ 60 60½ 61½  
'17 32½ 32½ 33 35 35½  
Rets. wk. ending Feb. 4, 18,079 cases.

### POULTRY

We quote from producers, lb.:  
Hens, large .....30@32  
Broilers, 1-1½ lbs., 45; 1½-1½, 40; 1½-2,  
35@37; 2-3, 35.  
Roosters .....30@35  
Squabs, doz. ....4.00@5.00  
Ducks .....17@24  
Geese .....19@22  
Belgian Hares, live, lb. ....20@22  
Turkeys, dr., 32@34; live .....27@28

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾c  
more.  
Steers, lb., 9@10½; undesirable, 6@8;  
cows and heifers, 7@8½; undesirable, 4@  
6; calves, 7½@10.  
Hogs—Hard grain-fed, weighing 100 to

140 lbs., 14; 140 to 175 lbs., 14½@15; 175 to  
300 lbs., 15½@15½; 300 to 400 lbs., 14½  
@15.  
Sheep—Wethers, 12@12½; ewes, 10@  
10½; lambs, 18@15.

### POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbank .....1.40@1.75  
River .....1.00@1.60  
Yakima Gems .....1.40@1.75  
Sweets .....4.00@4.25

### ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....1.75@1.85  
Bermudas .....2.75@3.00  
Garlic, lb. ....4@5

### VEGETABLES

Wholesale selling price.  
Artichokes, doz. ....40@75  
Jerusalem, 20 lb. bx .....75  
Asparagus, lb. ....17½@20  
Beets, sk. ....1.50@1.60  
Brussel Sprouts, lb. ....5@6  
Carrots, sk. ....75@1.25  
Celery, cr. ....1.75@2.75  
Egg Plant, lb. ....10@12½  
Lettuce, cr. ....50@1.00  
Parsnips, sk. ....1.00@1.25  
Peas, lb. ....12½@17½  
Peppers, Bell, lb., 15@25; Chili .....10@12½  
Pumpkins, sk. ....85@1.00  
Rhubarb, bx. ....1.75@2.00  
Squash—Marrowfat, sk. ....85@1.00  
Cream, lug .....1.00@1.15  
Hubbard, sk. ....90@1.15  
Tomatoes, cr., 1.00@1.25; Mex. ....2.00@3.00  
Turnips, sk. ....75

### FRESH FRUITS

Apples—Spitzenberg, 1.25@2.65; Red  
1.00@1.25; Newton Pippins, 1.00@1.75.  
Pears—Winter Nellis bx., 2.00@2.75;  
winter pears, 1.50@1.75.  
Strawberries, ch. ....7.00@10.00  
Avocado, doz. ....1.00@3.50  
Bananas, Hawaiian, lb. ....5@5½  
Citrus Fruits—Lemons, bx. according  
to size, fy., 3.00@6.00; ch., 2.50@5.00;  
lemonettes, 1.50@2.25; grapefruit, 2.50@  
3.00; ch., 2.00@2.50. Oranges—Bx. Navels,  
fy., 3.00@5.50; ch., 2.70@4.50; do culls,  
2.25@2.75; mandarins and tangerines, half  
orange bx., 2.25@2.75.

### DRIED FRUITS

Not producers' prices but prices of  
wholesaler to retailer.  
Peaches—Unpeeled, lb. standard, 9½;  
choice, 9½; extra choice, 10; fancy, 11.  
Figs—In 50-pound boxes, per pound:  
White Adriatic, standard, 8½; choice,  
9½; extra choice, 10½; fancy, 11½; Cal-  
myrna, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 13½;  
ch., 15; extra ch., 15½; fy., 16½; extra fy.,  
17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8;  
40s, 8½; 30s, 9½.  
Apples—In 50-pound boxes, lb.: Fancy  
15½; ex. ch., 14½; ch., 14½.  
Pears—Bulk basis, lb.: Fancy, 10½;  
ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 16-oz.  
cartons, \$4.20 for 48s and \$3.15 for 36s;  
fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-  
oz. 45 to cs, 5.25; ch., 16-oz. cartons, 3.00  
for 36s; do, 12-oz. cartons, 45s to cs, 3.10.  
In bulk: Sun Maid, 1.75; fy., 1.90; ch.,  
1.75.  
Sulphur-bleached Thompson, extra fy.,  
5.37½; fy, 5.12½; ch., 4.87½; soda-bleach-  
ed, 4.75.  
Loose: One-crown, 4.15; 2-crown, 3.40;  
3-crown, 3.65; 4-crown, 3.20.

### NUTS

Almonds—Cal. Almond Growers' Exch.  
Gross prices: Nonpareils, 21½; I. X. L.,  
19½; Ne Plus, 18½; Drakes, 16; hard  
shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts .....11@12½  
Pecans, lb. ....19@20  
Pine Nuts .....19@20

### HONEY

To the trade, per lb.: Comb, fy. white  
alfalfa, 20; do sage, 21; light amber, al-  
falfa, 18; do sage, 19; amber, 15@18.

### BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....12.60@12.75  
Bayous .....8.50@8.75  
Small Whites .....12.00@12.25  
Mexican Reds .....8.50@8.75  
Large Whites .....11.50@12.75  
Blackeyes .....8.00@8.25  
Pinks .....7.70@7.80  
Red Kidney .....13.00  
Cranberry .....11.75@12.00

### RICE

California rice, new crop, cleaned, 100  
pound head rice, 6.45@6.65; brewers, 5.10;  
screenings, 5.37½.  
Rough rice, 100 lbs., 3.50@3.60 to grow-  
ers at shipping points.

### HAY

Under date of February 2, Scott, Mag-  
ner & Miller says:  
Receipts past week, 1167 tons. This  
large falling off in the receipts can only  
be accounted for by the fact that the  
government contracts are practically fill-  
ed and no more hay to speak of is arriv-  
ing for this purpose. The car situation  
has shown a little improvement with the  
result that the local market has been  
better stocked than for some time past.  
Trade throughout the city is extremely  
dull. No one is willing to stock up any  
more than his absolute requirements at  
the present high range of prices, figuring  
that should we have heavy rains a large  
part of the hay in farmers' barns will  
find its way to this market.  
Fancy Wheat Hay  
(light 5 wire bale) .....29.00@30.00  
No. 1 Wheat or Wheat and  
Oat Hay .....26.00@28.00  
No. 2 Wheat or Wheat and  
Oat Hay .....23.00@25.00  
Choice Tame Oat Hay .....27.00@27.50  
Other Tame Oat Hay .....23.00@25.00  
Wild Oat Hay .....24.00@26.00  
Barley Hay .....24.00@27.00  
Alfalfa .....20.00@22.00  
Stock Hay .....20.00@22.00  
No. 1 Barley Straw .....60@90

### GRAIN

Grain Exchange prices, cwt.  
Corn, Cal. Yellow, cwt. ....3.25@3.50  
W. Egyptian .....3.40@3.50



Brown Egyptian .....3.20@3.25  
Barley, Feed and .....3.00@3.05  
Brewing, cwt. ....3.20@3.25  
Milo .....3.25@3.35  
Oats, Red Seed .....2.80@3.00  
Feed .....3.25@3.50  
New Black .....4.00@4.25  
Rye, Utah .....3.25@3.50  
Wheat — Government prices: Common  
white hard, base price is \$3.50 per central,  
or \$2.10 per bushel of 60 pounds delivered  
in terminal warehouses in bulk; soft  
wheat, base price 2 cents per bushel less,  
or \$2.08 per bushel; white club (including  
Sonora), \$2.06 per bushel. If wheat, after  
cleaning, weighs 60 pounds or more to  
bushel, base price stands; if 58 to 60  
pounds to bushel, 3 cents per bushel re-  
duction; if 56 to 58 pounds, 6 cents per  
bushel less; if less than 56 pounds, grain  
becomes sample grade and sells on its  
merits up to within 1 cent per bushel of  
56-lb. wheat. Sacked wheat 4 cents per  
bushel more, less tare for weight of  
sacks.

Enjoy a "Visit"  
to this Store of  
Home Furnish-  
ings as you sit  
around your  
evening lamp!

May we bring Barkers' store  
to you—in your own town, in  
your own home?

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LOS ANGELES, CAL.

Late Pears  
Bring Big Money

Distribute your harvest work  
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PLANT YOUR LAND NOW TO  
WINTER RHUBARB  
You should get big crop by next  
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acre, so can you with WAGNER'S GIANT  
—plant no other. Get your plants from  
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**Smith-Booth-Usher Co.**  
LOS ANGELES

FEEDSTUFFS

These prices applicable to San Fran-  
cisco, with \$1.00 less at Sacramento and  
Stockton, are for cash at the mill in car-  
load lots, and include sackage, with an  
additional rate of 50 cents per ton in less  
than carload lots.

Wholesale prices per ton. Prices fixed  
by food administration as San Francisco  
price; Sacramento and Stockton \$1.00 less  
on carlots at mill door:

Barley .....34.00@35.00  
Middlings .....41.50@42.50  
Mixed Feed .....37.00@38.00  
Shorts .....35.00@36.00  
Rolled Barley .....61.00@62.00

SEEDS

Prices in round lots, lb.:  
Millet, re-cleaned .....4 1/2 @ 5  
Alfalfa .....20 @ 21  
Flax .....6 @ 6 1/2  
Rape .....2 1/2 @ 3

Citrus Fruit Market

Los Angeles, Feb. 6, 1918.

It is almost impossible to give any in-  
telligent view of market conditions dur-  
ing the past week because the cold  
weather and frozen fruits have been the  
principal factors. Many auction markets  
have not opened at all. Where sales  
have been made of fruit which has es-  
caped freezing in transit, good prices  
have obtained. Frozen stuff has sold at  
less than freight, on up, according to de-  
gree of injury. Long prices have ob-  
tained in a few cases with lemons and  
Navel oranges.

Shipments

Shipments of oranges from Southern  
California to date since November 1,  
1917: 3303 cars; lemons, 772; total, 4075.  
Last year to same date: Oranges, 5713  
cars; lemons, 1319; total 7032. From Cen-  
tral California this season: Oranges,  
1875; lemons, 98; total, 1973. Last year  
same date: Oranges, 3957; lemons, 141;  
total, 4098. From Northern California  
this season: Oranges, 202; last year, 842.

AT THE AUCTIONS

January 30

New York: 2 Lem. \$2.75-\$3.60.  
Boston: Nav. \$5.00-\$5.60.  
Pittsburg, 3 cars. Val. \$2.05-\$3.30;  
Lem. \$0.95-\$1.15.  
Cleveland: 2 cars. Nav. \$1.60-\$4.10.  
Lem. \$2.55-\$6.00.

January 31

New York: 1 Nav. \$4.10-\$5.15.  
No sale in other auction markets be-  
cause of traffic congestion and cold.

February 1

New York: No sale in New York, St.  
Louis and many other auction points.  
Cleveland: 1 Nav. \$5.70.  
Philadelphia: 1 Val. badly frozen, \$1.70-  
\$2.80.  
Boston: 1 Lem. \$2.35-\$2.75.

February 4

No sales at New York, Boston, Cincin-  
nati, Cleveland.  
St. Louis: 2 cars. Nav. \$3.50-\$4.40, Lem.  
\$5.05-\$6.20.  
Philadelphia: 1 car. Nav. \$2.75-\$3.95,  
Lem. \$3.15-\$3.35.

February 5

Weather very cold, no sales in many  
auctions. Only one reporting is Boston,  
3 cars received, Nav. \$2.80-\$5.20, Val.  
\$2.15-\$2.60.

MARKET NOTES

Apple prices have strengthened mater-  
ially.

Barley flour, now a regular food offer-  
ing in our market, is quoted at \$11 per  
barrel.

Rice growers are sitting tight and re-  
fusing to accept prices which have pre-  
vailed.

Potato prices will probably go no high-  
er this season, and it is feared that a  
slight decline may be shown.

4,000,000 pounds of Manchurian beans,  
consigned to various coast points from  
Los Angeles north, on wharves at Se-  
attle, were commandeered by the govern-  
ment. It is anticipated this will affect  
bean market favorably.

Post card reports to the bureau of  
markets of the United States depart-  
ment of agriculture show shipments from  
California during the week ending Feb-  
ruary 4, approximately as follows: Ap-  
ples, 3 cars; beets, 2; carrots, 3; cab-  
bage, 28; cauliflower, 94; celery, 122;  
dried beans, 37; dried apples, 3; dried ap-  
ricots, 6; dried figs, 1; dried fruit mixed,  
13; dried peaches, 27; dried prunes, 28;  
lettuce, 66; mixed vegetables, 44; mixed  
fresh fruit, 10; onions, 22; potatoes, 134;  
raisins, 67; turnips, 12.

Crop Specialist R. G. Risser of the  
United States department of agriculture  
reports marked improvement in condi-  
tion of growing cabbage. Frosty nights  
have checked aphid injury, and the light  
rains were beneficial. Lettuce crop in  
Imperial Valley reduced at least 40 per  
cent by cutworms, excessive irrigation,  
poor drainage and alkali. Peas bloom-  
ing profusely. Cauliflower and celery  
seriously injured by dryness. The in-  
jury from dry weather has been serious  
in all central and southern parts of the  
state; frost damage lighter than usual.

NEW SQUIRREL EXTERMINATOR

C. S. Wilkins informs us of a new dis-  
tillate vapor process of eradicating  
ground squirrels, which consists of a gen-  
erator which turns distillate into a heav-  
ier than air gas which under pressure is  
forced into the holes of the rodents. With  
this machine a gallon of distillate will  
run from five to ten hours.

MONTHLY WEATHER AND CROP  
REPORT

By E. A. Beale, San Francisco District  
Forecaster, United States Weather  
Bureau

More rain is badly needed in all parts  
of California except in the extreme  
northwest where the rainfall, although  
deficient, has fallen opportunely and in  
consequence has penetrated deeply into  
the soil, and vegetation is making satis-  
factory progress. One of the worst  
features about the rainfall deficiency is  
the small amount of snow in the moun-  
tains at the end of the month. At Sum-  
mit, where the Southern Pacific railway  
crosses the Sierra Nevada, elevation  
7017 feet, there were only two inches of  
snow on the ground at the end of Jan-  
uary, when the average amount at that  
season is 125 inches. Also at Camp  
Seven, near Hume, there were only a  
few inches,—last year there were 26 in-  
ches. It is the early snowfall, that set-  
tles and solidifies, that insures water,  
late in the season for irrigation and pow-  
er purposes. Therefore it is almost cer-  
tain there will be a shortage this year  
no matter how much snow falls in Feb-  
ruary and March.

The only rains of consequence occur-  
red in the northern portion of the state  
on the 12th, 13th and 14th, and in the  
southern portion on the 13th, 14th, 25th  
and 26th. Following the precipitation in  
the northern half of the state there were  
many days with desiccating north winds  
and a number of frosty nights, both of  
which operated to prevent germination  
of wheat, barley and oats, and also to re-  
tard the growth of that which previous-  
ly had come up to fair stands. In the  
southern half the rain on the 25th and  
26th did an immense amount of good in  
starting growth on the little land pre-  
viously seeded to grain and in permitting  
the plowing of more land for grain and  
early vegetables.

Although there were many frosty  
mornings the temperatures nowhere re-  
mained below the freezing point long  
enough to seriously injure citrus fruit,  
and very little smudging was necessary.  
In the San Joaquin and Salinas Valleys  
there is practically no feed on the ranges  
and cattle are suffering severely, espe-  
cially cows and calves, a number of  
which have died for want of feed. In  
other stock districts, except in the north-  
western counties, feed is short and the  
price of hay has become prohibitive, so  
that without enough rain in the near fu-  
ture to start a new growth of grass, loss  
of stock will increase rather than dimin-  
ish.

Some sugar beets and potatoes were  
planted during the month, and in the  
neighborhood of Brawley a large acre-  
age of cantaloupes has been planted.  
Horticulturists have been kept busy  
spraying and pruning deciduous fruit  
trees. In the vicinity of Azusa, Los An-  
geles County, the anomaly of a severe  
hailstorm occurred, which damaged  
young lemons and St. Michaels some-  
what, but no damage was apparently  
done to Navels and Valencia.

WEATHER CONDITIONS

San Francisco, Cal., Feb. 2, 1918.

Stations	Rainfall		Temp.	
	Wk.	Season.	Norm.	Max. Min.
Eureka	.44	11.10	25.11	52 34
Red Bluff	.00	3.78	14.25	86 34
Sacramento	.01	2.19	11.05	86 30
San Francisco	.11	2.47	12.90	64 42
San Jose	.02	1.81	9.27	86 28
Fresno	.00	.98	5.25	84 34
San Luis Obispo	.00	1.25	10.36	70 82
Los Angeles	.00	.91	8.30	64 44
San Diego	.00	1.89	5.38	62 40

TRUE VIGILANCE

In a place in New Jersey a town  
building caught fire and the extin-  
guishers failed to do their work. A  
few days later at the town meeting  
some citizens tried to learn the reason.  
After they had freely discussed the  
subject, one of them said, "Mr. Chair-  
man, I make a motion that the fire  
extinguishers be examined ten days  
before every fire."—Philadelphia Pub-  
lic Ledger.

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stamp.

TWENTY-FIFTH ANNUAL

Aggeler & Musser Seed Co. of Los An-  
geles is mailing its twenty-fifth annual  
catalogue, or what it terms its School  
Garden Number. This title, we doubt  
not, has been given because of the great  
interest shown in every city and town of  
the country in school and back yard gar-  
dens, and well has this done its work of  
preparing a fund of information which  
will aid in this school garden work.

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one of the East Whittier School which  
last year won a \$600 prize for its attrac-  
tive grounds.

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## Honey Production and Markets



VIEWING Eastern honey market condition a writer in "The Domestic Beekeeper" says:

The season of 1917 will long be remembered as having been one of the latest springs on record. Apple trees in this section (Vermont) did not bloom until June. The first white clover bloom that I saw was on the 18th of June. Bees did not gather surplus from that source to any extent until July 1. In an average season we expect clover to yield nectar freely by the middle of June. There was in this section a profusion of clover bloom and bees stored honey freely until the last week in July when the excessive hot dry weather cut into the yield, drying up the clover and giving us a short season and only a moderate crop of honey.

It is interesting to look back over the past 50 years and note the changes that have come over our honey pasturage. Then almost our only sources were white clover and basswood. Then if one failed the other could usually be depended upon, but when both failed most of the bees died, as was the case in 1860. Now basswood has gone, but we are averaging as good crops of honey as in the long ago. Alsike clover has come in so freely in meadows and roadsides that it makes up quite well for the loss of the linden, and is much more certain

than the white clover. Dandelions too have spread wonderfully in recent years and have become an important source of nectar. Last spring strong colonies gathered in this vicinity an average of ten pounds above what was used in the rearing of brood. The honey is a light amber and when well ripened of fair quality. It is liable to granulate quickly and when carried above into supers is liable to make trouble. Notwithstanding, we esteem it a very decided help in building up our bees, as it comes in at a time when there is little else to be had, fruit bloom giving us in average seasons but little nectar. It thrives best in a heavy soil and our cold springs in Northern New England seem to suit it so well that it spreads a feast of pollen and nectar for every passing insect.

The year 1917 will be long remembered as the year in which there has been a large advance in the price of honey. Extracted honey has advanced 50 per cent or better and comb honey has increased from ten to 20 per cent. The large foreign demand accounts in part for the large advance of extracted honey, but not wholly I think. The increasing demand for choice honey for bottling has had its effect in boosting the price. Another factor we are apt to overlook is what might be called the depreciation of money. So much money has been coming to this country during the last two or three years, and is still coming that we might almost say that money has become so abundant that it is cheap and requires more to buy any given commodity whether it is butter, eggs, potatoes or honey. Between 1850 and 1860 the price of honey so far as I remember was 12 cents a pound and comb honey at that. We had no extracted honey then. During the Civil war so much money was paid out by the government and money was so much more plentiful than necessities that prices bounded up much as they have of late. Wheat sold for \$3.00 a bushel and I remember a tub of butter paying 56 cents a pound for it. Honey that was so cheap earlier went up to 30 cents a pound and from 1867 to 1880 the average price was above 30 cents.

### CORRESPONDENCE COURSES IN AGRICULTURE

The University of California now has ready for distribution Circular 113, "Correspondence Courses in Agriculture," showing that instruction will be given in nearly 30 branches of agriculture. To mention a few: Culture of alfalfa, corn, figs, barley, dairy, swine, sheep, pears, plums, walnuts, lemons. If interested write to College of Agriculture, Berkeley, for information.

### Book Review

#### THIS YEAR'S GARDEN

Professor J. W. Lloyd of the University of Illinois, and who recently spent a year in California gathering fund of information on cooperation, is author of "Shall I Plant a Garden This Year?" His answer is affirmative. He says:

The logical thing for a prospective gardener to do is to make a definite decision to give his garden consistent care throughout the whole season and then to let nothing move him from that determination. In order to give his garden proper care he must know what to plant in his particular locality and when to plant it. He must know which varieties will best meet his needs. He must know what insects and diseases to expect and how to combat them. The more he can learn about each of the crops he proposes to grow before he attempts to grow it, the better prepared for the season's tasks he will be.

A definite plan of the proposed garden should be made on paper. This plan should indicate the location of each kind of vegetable in the garden, the distance between the rows, and the approximate time of planting each crop. Since a home garden is a personal matter, the plans made by different individuals will reflect their particular tastes. However, in all garden plans, it is desirable that an arrangement of the crops be employed which will make the best possible use of the available space and at the same time minimize labor in preparation and care. Suggested plans are given in the book. Plans for gardens of various sizes are also given in Circular 198 of this station.

#### BEAN SPROUTS

We are continually getting acquainted with new vegetables and new varieties of old-time favorites. Now comes the bean sprout. The Japs are teaching us to eat them and we have endeavored to learn as to production. The Jap market people shrug their shoulders and seem to "no sabe," but we understand the process of sprouting is similar to that of seed testing, i. e., beans are placed on moist blanket and covered with another, so as to maintain an even growing condition with plenty of warmth. The sprouts come out an inch or two long and presumably are largely water; also have little or no food value. They are, however, very delicious and make a nice salad, are very good creamed or fried and served hot after baking.

As a producing proposition we think Americans will hardly enter the field for they are sold two pounds for 15 cents.

#### INTERNATIONAL YEAR BOOK

The International Year Book of agricultural statistics, 1907-1916, is now issued by the International Society of Agriculture with headquarters at Rome, Italy. Within its thousand pages it supplies to all who wish to have them at hand, not only a complete summary, but all the detailed statistics, of agricultural operations throughout the world.

This institute is the result of the efforts of a Californian, David Lubin, and its efforts to secure information as to the world's production of foods have been of inestimable value, especially so during the period since the war.

The price of the volume is \$2.00. It will be promptly forwarded post free on receipt of request, accompanied by postal card, to the Service de abonnements et publications de l'Institut International d'Agriculture, Villa Umberto, Rome, Italy.



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## Household Department

### SAINT VALENTINE KING

I am king just one month of the year  
And the shortest one too, I confess,  
But the deeds that I do  
Are not feeble nor few,  
For to hearts my appeals I address.

My castle I keep full of hearts  
And Cupid comes flying around  
To capture at will,  
And his quiver to fill,  
With arrows strewn thickly around.

My post office too, is well stored,  
Such a long list no other can show:  
So from "A" to "Z,"  
All the children may see  
That each name I familiarly know.

Then be ready, my little ones all,  
For the message that Cupid will bring:  
For he'll soon be about,  
So, with laugh and with shout,  
All shall hail good Saint Valentine King!  
—Harriet Adams Sawyer.

### MY VALENTINES

Written for California Cultivator  
By Vena B. Wales

**O**NCE upon a time, in the sweet-remembered long ago, I received a valentine—the first one that had ever come to me.

How well I recall the blustering February evening and the picture of my Father, just returned from the weekly visit to the postoffice, as he shook the snow from cap and muffler and coat in front of the great fireplace, finally dealing out the letters to each expectant one. The last envelope, square, and larger than any of the others, came to me with Father's hearty "Here, Puss, a big one for you!"

With bulging eyes I opened it while all the family watched. I thought I had never seen anything so beautiful as the lace edged square with the boy and girl, hand in hand, by a clever contrivance of folded cardboard, standing out from highly colored roses of red and yellow. It was quite some time before I discovered that it opened and that inside was a verse. And there were some initials underneath the verse too, three of them—"J. C. B."

Mother bade me read the verse aloud, and so with blushes and hesitation I read:

If you love me as I love you,  
No knife can cut our love in two.

They all laughed, but Father patted me with his big, loving hand and said it was a pretty valentine and a pretty verse and that I should put it away and keep it.

I did put it away and I have it yet, though all this happened, you know, in the sweet-remembered long ago.

But the other morning among my daily grist of some dozen boresome letters came a square white envelope addressed in a hand that attracted my attention, a writing that signified either extreme youth or extreme age. I opened the envelope in that blaze

way we have taken on in these days of many letters, and—there it was! almost a duplicate of that other valentine, except that the lace edge was more exquisite in design and the coloring of the hand-in-hand boy and girl and roses was more delicate. I turned to the verse and initials with trembling fingers and tender memories. Yes, there was a verse and initials too, and with misty eyes I read:

"If you love me as I love you,  
No knife can cut our love in two."  
—J. C. B.

Again I looked at the writing on the envelope—of course—queer I hadn't known it at once—the scrawl of my young grandson, named for his grandfather and so like him! Again I thought I had never seen anything so beautiful as that bit of paper and silly verse.

Then I went to my treasure chest and got out the old valentine, yellowed and faded from being "put away" for a third of a century. I penned something on its discolored leaf below the couplet and initials, and I penned something on the pristine whiteness of the new one, then carefully and lovingly I put each back in its own envelope, tying them together with the same faded blue ribbon that had been for so many years about my first valentine.

I had added to my treasures of the sweet-remembered long ago one of today.

### SANDWICH RECIPES FROM CULTIVATOR READERS

Mrs. Guy Halley, Lindsay

Mix one tablespoon of thick sweet cream with one tablespoon peanut butter until thick and creamy. Add a dash of salt to taste and spread on thin slices of white bread. Dot with small seedless raisins and press slices together in pairs. Cut in triangles.

Another delicious sandwich is made with rye bread. To one-half cup finely minced olives add one tablespoon grated cheese and one tablespoon finely minced pimiento. Mix well and spread on thin slices of rye bread which have been lightly buttered. By the way, if butter is thoroughly creamed before spreading on sandwiches it goes much farther and tastes better.

Mrs. E. A. Frey, Exeter

Nuts and dried fruits, preferably raisins, figs, prunes or dates, ground to a paste, moistened with fruit juice, water or cream and spread between thin slices of buttered white or brown bread make a very appetizing sandwich.

Cheese ground and mixed with cream, to which a very little salt and pepper has been added, makes a moist sandwich and a good substitute for meat sandwiches.

Mrs. J. B. McCormick, Lindsay

Put sweet green peppers through a meat grinder, add equal amount of hard boiled egg and use between white or dark bread.

Another: Blanch one-half cup almonds and toast to light brown in oven or over flame, seed one cup olives, put both through meat grinder and mix with small amount of lemon juice and salt and use with either white or dark bread.

Mrs. E. A. Cook, Winters

I make a nut bread as follows: One and one-half cups white flour, one-half cup corn meal, two cups graham flour, or one cup graham flour and one cup rye meal, one-half cup brown sugar, one-half cup syrup, one cup walnut meats broken up but not too fine, a little salt, one level teaspoon soda,

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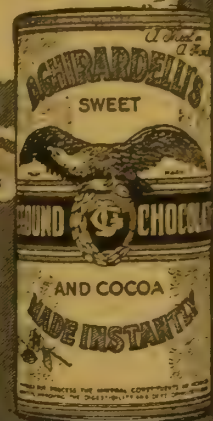
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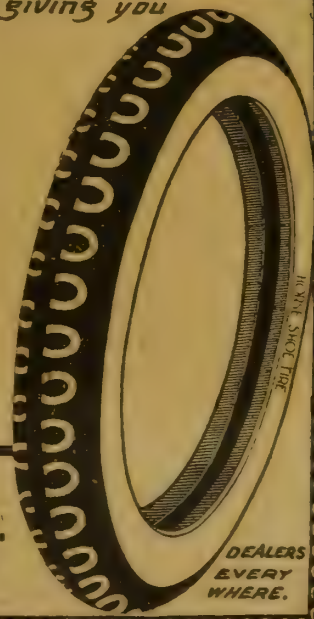


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San Francisco, Cal.

Canadian Government Agent.

two level teaspoons baking powder. Sift soda and baking powder with white flour, mix all dry ingredients, then mix in syrup and about one pint of sour milk (butter milk preferred). Have dough soft but not runny. Put this in slender pans and bake for about 45 minutes. Have oven hot enough to brown it richly but be careful of burning it. When cold slice thin and butter. Or if you want a rich sandwich take equal amounts of English walnuts and black dried figs. Put through meat grinder three times, using a coarse knife plate the first time and finer one the second and third times. This mixes the nuts and figs nicely. Then work it into a loaf about the shape of your bread and when it sets a few hours you can slice right through it with a sharp knife; and this without any butter makes delicious sandwiches. Add a pinch of salt. Most of us Californians have walnuts and figs, so these are not expensive.

### WHAT THE UNITED STATES PAYS THE SOLDIER AND HIS FAMILY

Authorized Statement of Our Government in the Official Bulletin



PAYMENTS are now being made from the \$176,150,000 "war risk" appropriation which the government has provided for the protection of the fighting forces and their dependents.

This fund was authorized under the military and naval insurance act, approved by the president on October 6, and it is designed to free American soldiers and sailors from the fear that their families may be deprived of life necessities or that they may become helpless charges through physical disability incurred by war service.

It must be understood that this feature of compensation is entirely in addition to the funds paid out monthly by the government in the form of wages to its protectors.

#### Administered by Special Bureau

The military and naval insurance system is administered by the war risk insurance bureau, under the direction of the secretary of the treasury, and Mr. McAdoo has characterized it as "the greatest measure of protection ever offered by any nation to its fighting forces."

Three separate and distinct elements of protection are offered: (1) Family allowances for the support, during the war, of enlisted men's families; (2) stated compensation for partial and total disability or death caused in the line of duty; (3) government insurance against death and total disability.

The work of administering the war risk insurance feature of compensation requires the services of some 1,500 government employees and, due to the tremendous amount of administrative detail involved, there was a delay in making actual payments, but at the present time more than 200,000 checks have actually been mailed as allowances. Only a small number of payments have so far been made on claims for compensation for disability or death or on account of insurance and these claims are not numerous.

#### The Plan in Detail

Just what the war risk plan of compensation means to the fighting forces and their dependents is comprehended in the following statement authorized by the secretary of the treasury:

(1) Allowances and Allotments: All enlisted men, according to the law, must contribute not more than 50 per cent of their pay for the support of their immediate families. On application the government will add to this allotment an allowance of its own of from \$5.00 to \$50 a month, according to the size of the family. The system, briefly, works out as follows:

The amount that the government gives to an enlisted man's immediate family is fixed by law, \$15 for a wife, \$25 for a wife and one child, \$32.50 for a wife and two children (all on a monthly basis), and \$5 additional for each additional child.

The enlisted man must contribute, that is, have deducted from his pay, or "allotted," an amount equal to the government allowance, but the minimum for an enlisted man's allotment is \$15 a month and the maximum is half his pay.

By this plan the government and

## The Cultivator Patterns



8159—Ladies' Waist. Cut in sizes 36 to 42 inches bust measure. The waist is made with a vest and long, or short sleeves.

8174—Girl's Dress. Cut in sizes 6 to 11 years. The dress closes at the front and yokes and panel are in one.

8145—Ladies' Dress. Cut in sizes 36 to 42 inches bust measure. The dress is cut in one piece, closes at the front and may have long or short sleeves.

7882—Ladies' Shirt Waist. Cut in sizes 36 to 42 inches bust measure. Linen, madras, crepe de Chine or satin can be used to make this waist.

8145—Children's Romper Dress. Cut in sizes 1, 2, 4 and 6 years. The dress closes at the back and the bloomer section is attached to lower edge of dress.

8179—Ladies' Skirt. Cut in sizes 24 to 34 inches waist measure. The skirt is cut in four gores and has a box plait at each side of the front and back.

8183—Ladies' Dress. Cut in sizes 36 to 44 inches bust measure. The dress closes at the front and has a three-gored gathered skirt in regulation waistline.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

#### HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

Pattern Department  
California Cultivator  
Los Angeles



the enlisted man are partners on a half and half basis, and both together assure the mans' family adequate support while he is fighting for his country.

If the enlisted man will make some further allotment for a dependent parent, brother, sister or grandchild, they may receive additional allowances from the government. Here again the government and the soldiers are partners, in a way that is not only just but democratic.

Nurses and commissioned officers are not included in the provision for allotments and allowances.

The maximum amount which the government will contribute to any dependent is the same for the highest noncommissioned officer as for the lowest grade of private.

**Rates of Compensation**

(2) Compensation: If any enlisted man or an officer, or an army or navy nurse, should be disabled by injuries or disease contracted in the line of duty, the government will pay him, without any expense on his part, fixed compensation of from \$30 to \$100 a month, or, if he should die, the government will pay his wife, child or his widowed mother fixed compensation of from \$20 to \$75 a month. The amount of compensation for this total disability will depend, within the prescribed limits, on the number of dependents left. To an injured person who is totally disabled and in addition so helpless as to be in constant need of a nurse or attendant, such additional sum shall be paid, but not exceeding \$20 a month, as may be deemed advisable.

Stated compensation will also be paid in cases of partial disability. The amount will be a percentage of the compensation for total disability, depending on the reduction in earning capacity resulting from the injury.

In paying this stated compensation for partial and total disability and for death the government draws no distinction between officers and enlisted men. The compensation is not based on the pay of the man.

Thus the widow, with no child, of a colonel or major general killed in action will receive the same compensation as the widow, with no child, of a second lieutenant or private killed in action, namely, \$25 a month, paid until death or remarriage.

**The Insurance Provision**

(3) Insurance: In addition to family allowances, in addition to compensation for disability and death, furnished by the government without charge, the law provides that all soldiers, sailors, marines or nurses, commissioned, enlisted or drafted, may buy from the government insurance against death and total disability. This insurance is sold at the normal peace rate, and even lower than the normal peace rate of private companies, for the government does not have to pay for medical examinations, commissions and other important items. The government assumes the extra hazard caused by war service as its plain duty and obligation.

The government takes away a fighter's insurability by calling him into the most hazardous business in the world, war, and in return the government goes into the insurance business for his benefit.

The insurance lasts for 20 years and is paid in 140 monthly installments—\$5.75 for each \$1,000 of insurance. But if the man taking out the insurance is still alive and totally and permanently disabled after the expiration of the 20 year term the payments will continue until he dies. Furthermore, five years after the war the insurance may be converted into the numerous kinds of insurance sold by private companies.

**Maximum Amount \$10,000**

The maximum amount of insurance which the government will issue to any one person is \$10,000. The cost ranges from 65 cents monthly at the age of 21 to \$1.20 monthly at the age of 51 for each \$1,000 of insurance. The maximum of \$10,000 is respected regardless of rank or pay. For a person 25 years old the \$10,000 insurance would cost only \$6.60 a month, thus bringing the maximum policy within the grasp of all soldiers and sailors even of the lowest ranks. The premiums may be deducted from a man's pay, if he desires, thus saving him the trouble of making payments.



# An Investment in Efficiency

CERTAINLY the farmer's need for a substantial motor car has never been so great as it is now. The larger part he plays in national affairs, the increased demands upon his time and knowledge, alike require for him a better means of transportation. Progressive farmers in all parts of the country are awake to this need and in thousands of instances are wisely meeting it with an Oakland Sensible Six. In choosing such a car they insure themselves the highest type of service at the minimum of upkeep cost, and their purchase becomes a real investment in efficiency. The high-speed overhead-valve engine of the Oakland Sensible Six is immensely

powerful and economical; it delivers 44 horsepower at 2600 r. p. m., or one horsepower to every 48 pounds of car weight. The finely-made chassis is extraordinarily strong and serviceable, and the slightly body is swung on long springs over a generous wheelbase, insuring full comfort. The car as a whole is handsome in proportion and finish; it is unusually roomy and accessible, and is upholstered with genuine leather throughout. As a perfected example of scientific light-weight construction, high power and fixed economy, its value is not equaled in the present car market.

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Owners of the Oakland Sensible Six report extremely high gasoline and tire mileages from their cars.

Touring Car . .	\$1090
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## Most Miles per Gallon Most Miles on Tires

### Horse-Pace Family!—You Have Come to the Turning Point

Business-Farmer—to be longer without a motor car may affect the whole of your success, and the whole of your family's future.

Have you noticed lately that somehow the good chances that are missed by you are seized by others—others who have automobiles?

Have you noticed that, though some men you know of turn every hour and minute into profit, *your* work goes slow, *your* time is spent in fretting against delays—and that you are getting into the habit of letting many a good chance pass because you "wouldn't be able to get there in time?"

\* \* \*

Have you noticed that your family—your girls, your boys, your wife—are steadily, steadily getting out of touch with those they ought to know? Have you realized that the families which surround you—automobile families—have a circle of friends and interests, and a radius of easy visits, far larger than your family? Open your eyes.

Have you noticed how many times you and your family have been placed under obligation by

neighbors who have cars? Aren't you tired of asking favors?

\* \* \*

Your environment is moving at automobile pace. You and your family are limited to horse-pace and horse-radius. And in the next few months the paths of automobile families and horse-pace families will separate still more sharply. Only motor-pace will do for the conditions in which this nation is now doing its work.

You stand at the turning point.

\* \* \*

Motor-car service now costs less than horse service for all the work that a motor car can do.

And of all motor cars of equal service the one that costs least to run and least to own is the Maxwell.

Investigate this while these cars of greatest efficiency are still procurable. Write us a letter today.

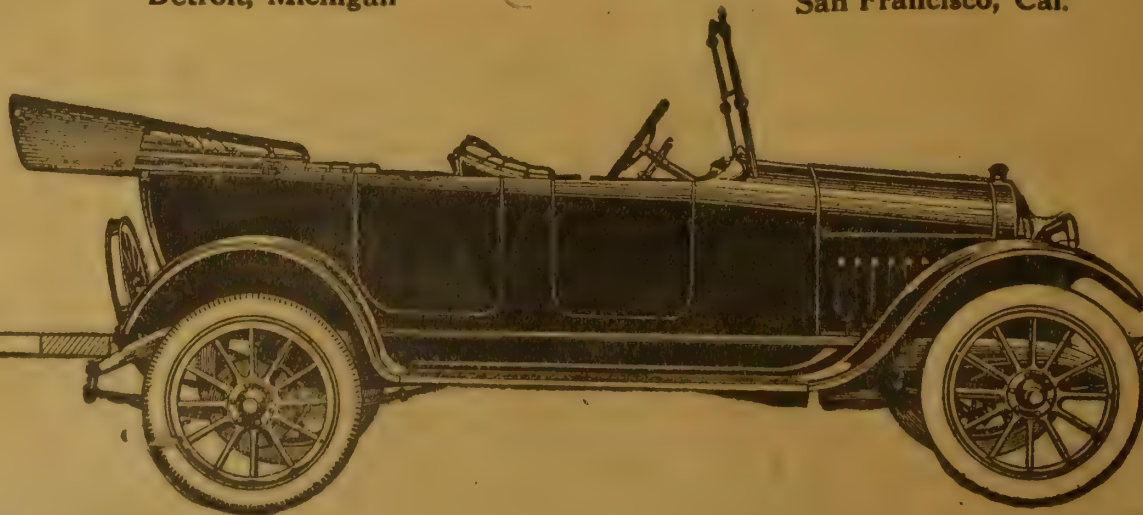
*Touring Car \$745; Roadster \$745; Touring Car with Winter Top \$855  
Roadster with Winter Top \$830; Berline \$1095; Sedan with Wire Wheels \$1195. F.O.B. Detroit*

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**THE LIVESTOCK and DAIRY JOURNAL** *Combined with* **CALIFORNIA CULTIVATOR**

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

February 16, 1918

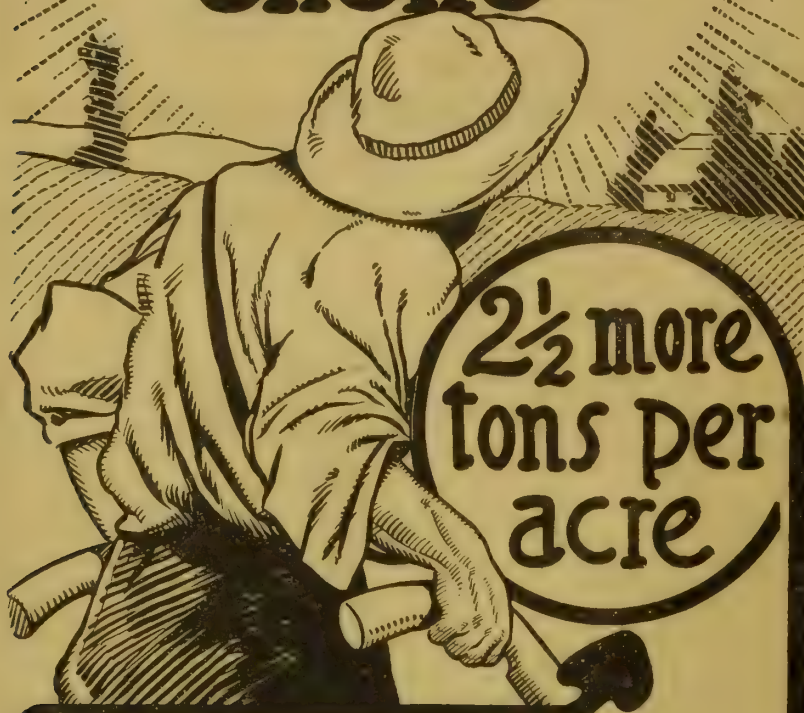
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Beautiful Cedars

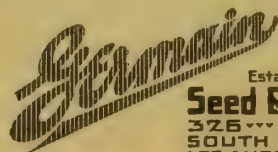


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Germain's Hairy Peruvian is a thoroughly tested and proven plant. It has been tried out and endorsed by State experiment stations and by experienced growers in both hot and cold countries.

Germain's Hairy Peruvian produces large leaves from the top to the crown of the plant, and as the leaves contain the greatest and best part of the food value — every grower who wants bigger and better crops should plant it. Don't fail to place your order at once. Send for illustrated folder containing testimonials.



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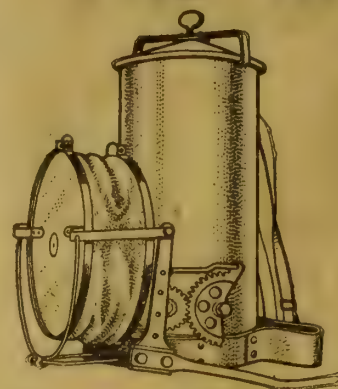
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## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make It pay—Fertilize with Hauser's Organic Fertilizer.

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# California Cultivator

Vol. L, No. 7

LOS ANGELES: February 16, 1918

One Dollar Yearly

## Water Conservation Essential This Year

Bone Dry Condition of Soil and Subsoil Calls for Saving Every Drop. Irrigation Beginning in All Sections of the State. Much Valuable Moisture May be Saved by Mulching and Shallow Cultivation



THEODORE ROOSEVELT has said: "The forest and water problems are perhaps the most vital international problems of the United States."

This is certainly true with double force this year of all years when we are appealed to to produce more. It is a question of most vital importance from an

international as well as internal standpoint, and to this demand for increase all the country, and especially California, responded last year most patriotically. She will respond equally this year so far as patriotism is concerned, but from the present outlook nature is not joining in the effort. Hence, how man can overcome these difficulties which confront producers, is a question of most vital importance.

Producers of the state are situated so as to take advantage of natural conditions as never before, but there are still undeveloped resources which we must make use of so far as possible. Perhaps one of our greatest losses in the past has been caused by abundance of water and lack of equipment for handling with greatest economy. There are still streams wasting to the sea; there are gravel beds underneath the earth's surface filled with water. How may these resources be used? There will be many wells driven; there will be diversion dams; there will be repairs of canals and ditches; some sandy or gravelly strips will be cemented or flumed to make less loss.

As a bit of help the Cultivator gives in another column lists of various publications on irrigation, reference to which will be of value to the irrigator. But, directly, we may gather a few hints and pass on.

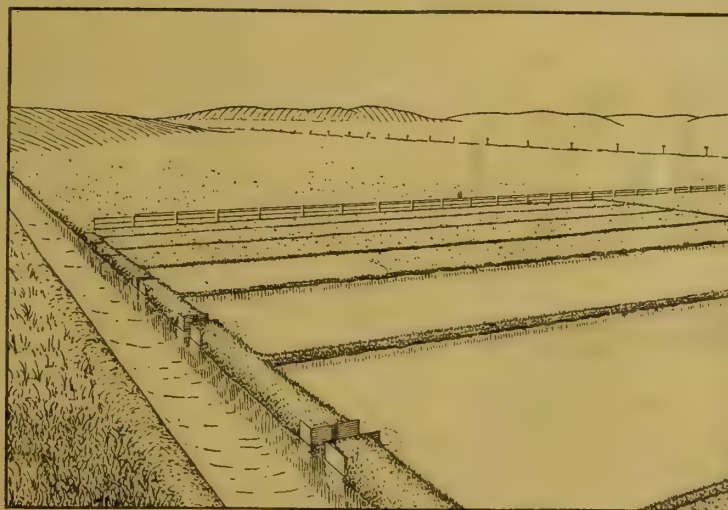
Our streams are the most economical source of irrigation water, when the water can be taken out and carried by gravity to the lands where it

present need, the expense would be justified in many instances where it would not have been under normal conditions. Beside concreting and fluming there is the prevention of seepage by the use of oil. This we

the reservoir should be made across a depression. In that case it will be necessary to puddle the filling as it is put in, so as to make the side firm and strong enough to withstand the pressure. The method of working the oil into the sides will depend somewhat on the size of the reservoir. If the reservoir is small the work will need to be done by hand with a hoe and rake, but on large reservoirs it can be done with horses and harrows."

But of greater value perhaps so late in the season may be a few hints to the individual irrigator. The most economical use of irrigation water is by subirrigation, or applying water in perforated pipes several inches or a few feet under the soil. This plan of irrigation has been followed successfully in the case of small gardens, but with trees, or extensively used, it has not proven satisfactory, especially after a period of years.

Overhead irrigation has proven expensive to install, and while it has been tried in California for many years, so far as we know, the earlier installed plants have been entirely removed.



Field Ready for Alfalfa  
Dirt ditches with wood gates and well leveled and ridged "checks" or "lands" or "baisins."

have referred to several times in the Cultivator. Sometime ago Mr. Neff gave information as to making reservoir on the natural soil by use of oil worked into the sides and bottom of the reservoir. This applies with equal force to canals. Mr. Neff said:

"A fairly satisfactory reservoir can be made on sandy loam. The slope of the sides should not be very steep; a rise of one foot in four will be better than a greater rise as it gives a better chance to work in the oil. If clay or silt can be had without too long haul it will pay to cover the bottom and sides with this and work it in with the oil. Use the heaviest road oil to be had and about three gallons to the square yard. Either have the oil heated or put on when the weather is hot, and work the oil into the bottom and sides to a depth of two and a half or three inches. It is not necessary to tamp sides or bottom after the oil has been worked in, as the tramping of the teams in making the sides will be sufficient for the foundation, unless

There are two forms of surface irrigation generally practiced; the furrow system, usually with straight furrows between rows of trees, or some-



times zigzag in order to fill all the land with water, then there is the check, or basin, system. Both forms are used in orchard and general farm practice. As a rule, the orchardist prefers the straight furrow, water running in exceeding small streams and for several hours, the period of flow depending upon the nature of the soil. The basin, or check, system is generally used in all field crops and by but few orchardists. Little economies in the handling of water under either of these systems are suggested more by the engravings than by extended description.

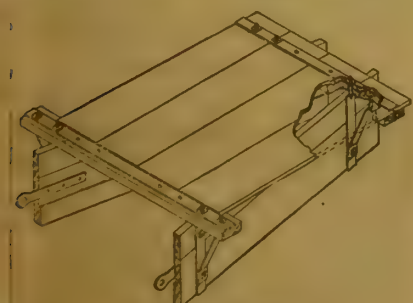
But more than all, at this particular time it is of value that every available drop of water in California during these winter months when there is little demand for it, should be put upon, or rather into, our soils, and if this is done there is use for cultivators, rollers and every type of surface soil worker to keep this moisture for the summer's use. All green manure or weed crops should be turned under and the draft upon the soil stopped. The surface mulch of dust or straw or any substance which may be secured should be used to the utmost.

In windmill or small power plant supply storage is necessary to make economical or satisfactory irrigation. This storage may be in the steel or wooden tank, or in the concrete or earth reservoir where conditions are favorable. Every problem has to be solved with consideration of all the conditions on the ranch, and these conditions have to do with the nature of the soil in which the reservoir is made, the subsoil underneath and many other factors.

With California sunshine to deal with it is wise to make the area of the reservoir as small as possible to prevent seepage. The suggestion given above by Mr. Neff as to surfacing with crude oil is a good one where



Freshing a Large Ditch



Adjustable Ridger

Fine for ridging or throwing up levees. First, plow back furrow then finish with this ridger.



# FRUIT TREES

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Citrus trees not only produce bountiful crops of luscious fruit, but they are being planted for ornamentation in landscape effects, their beautiful dark green foliage contrasting with many of the fine ornamental trees and shrubs.

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Grown at Laguna Bell Acres. Stock one year old. 200,000, 8 to 30 inches high, absolutely free from scale. Also first class Rhubarb for sale.

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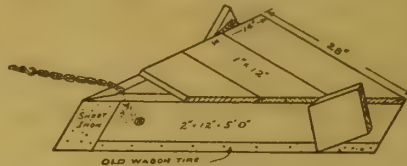


Redwood Makes a Fine Flume

With modern metal gates and a well constructed flume "pitched within and without" with crude oil rich in asphaltum, one man can more satisfactorily control a big "head" than can two with dirt ditch.

conditions are right, and we know of cases where even gravelly soil with very porous subsoil has been made to hold water by the use of a very heavy oil, or even by puddling with clay hauled to the reservoir and tamped by corralling sheep within the depression before the admission of water. With present day prices of cement, where gravel and sand are within reach, the concrete lining is the most satisfactory. Where this concrete is placed upon dry sides care must be exercised to have the sides well settled and tamped before applying the concrete.

Another source of water supply, far more expensive but possessing many advantages, and the use of which has increased much during the past ten years, is the pumping of water from wells. There are yet a few flowing wells in California, but owing to the increased demand upon the lower strata their number has greatly decreased. But, owing to the enterprise



"A" Crowder

With sheet iron "nose" wagon tire guard or runner will last years. Works new ditches and cleans old.

of pumping machinery manufacturers, the lifting of great quantities of water for irrigation has been simplified and methods perfected until there are cases in California where as much as a 400 foot lift has been made and still fairly economical production of crops. In general, however, any such lift is prohibitive. There are many sections in all portions of the state not yet fully developed which have possibilities for developing deep wells.

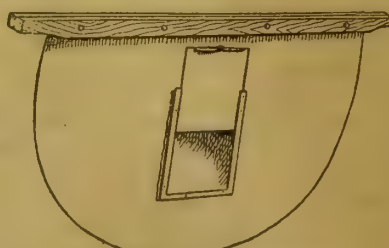
### Irrigation Publications

Perhaps one of the very best books on irrigation is Irrigation in the United States, by Frederick Haynes Newell, published by Crowell, New York.

Another good book is Irrigation and Drainage, by F. H. King, Macmillans, New York.

Primer of Irrigation, by D. H. Anderson, editor of Irrigation Age, Chicago.

American Irrigation Farming, by W. H. Owens, published by A. D. McClure Company, Chicago.



The metal dam or tapoon.

### Tapoon

Ordinarily the tapoon is a semi-circular piece of steel, say three or four feet on the straight edge, screwed or bolted to handle of wood and used to dam or divert water from temporary ditch. Supplied with sliding gate as in one illustrated above the tapoon becomes a "division box," and a desired amount may be allowed to continue down the ditch.

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is used and the fruit never falls to rot. Application should be made now for best results.

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Only Self-Setting machine. Transplants sweet potatoes, tomatoes, tobacco, strawberries, cabbage, nursery cuttings, etc. Any desired depth. Better than hand. As plant is released, water valve opens, then closer rollers press dry soil around plant! Holds moisture but leaves no wet surface soil to bake. J. L. Owens Co. 1139 Dartmouth St., Minneapolis, Minn.

Requesting your local merchant to stock article advertised in the California Cultivator helps you town, the advertiser and the Cultivator.



Irrigation in the United States; Legal, Economic, and Financial Aspects, by Ray Palmer Teale, published by Appleton and Company, New York.

Irrigation Farming, by Lucius M. Wilcox, editor Field and Farm, published by Orange Judd Company, New York.

Irrigation Management, by F. H. Newell, published by Appleton Company, New York.

Use of Irrigation water by Samuel Fortier, published by McGraw-Hill Book Company, New York.

Arid Agriculture, by B. C. Buffum, published by author, Worland, Wyoming.

These books may be secured direct from the publisher or by ordering



Furrowing in Garden

Wheel plow swifter and better than hoe in laying furrows.

through Cultivator Publishing Company, 115 North Broadway, Los Angeles.

Valuable state and federal bulletins are:

Drainage of Irrigated Farms, Farmers Bulletin 805.

Construction and use of Farm Weirs, Farmers Bulletin 813.

Farm Reservoirs, Farmers Bulletin 823.

These may be obtained by writing Division of Publications, United States Department of Agriculture, Washington, D. C. They will be sent free on request.

Increasing Duty of Water, Circular 114.

Selection and Cost of Pumping Plant, Circular 117.

Water Measuring Devices, Bulletin 247.

Irrigation and Soil Conditions in the Foothills, Bulletin 253.

Irrigation of Rice, Bulletin 279.

Irrigation of Alfalfa in the Sacramento Valley, Bulletin 280.

Irrigation of Alfalfa in the Imperial Valley, Bulletin 284.

Extending Area of Irrigated Wheat, Circular 182.

These may be obtained free of charge by writing College of Agriculture, Berkeley.

#### FIG GROWERS COOPERATING

Since the recent fig growers' convention at Fresno things having to do with the fig industry have moved. More than 200 fig growers have decided to cooperate in marketing their product and permanent offices of the association have been taken in the Cory Building, Fresno. Prices for next year have been named as follows:

Calimyrnas	15 cents
Adriatics and Kadotas	10 cents
Black Missions	8 cents
Calimyrna Splits	6 cents
Calimyrna Culls	5 cents
Adriatic Culls	4 cents

Secretary Newby says:

#### Union Means Success

"By reason of the organization the buyers have been spurred on to offer a much higher price than formerly. This clearly shows the effect and the wisdom of organization. It shows that in union there is strength."



**GET BUSY**



"America's Most Useful Farm Implement"

## Enlist Your Ford Your Country Needs It

Increased food production is the crying need of the country. More corn, wheat, oats, rye barley—more land under cultivation—more productive labor from horses, machinery and the men on the farms. Efficiency and greater output are not only patriotic duties, but they insure increased profits. And the

# STAUDE Mak-a-Tractor

(Trademark Mak-a-Tractor Reg. U. S. Pat. Office and Principal Foreign Countries)  
Price \$225 F. O. B. St. Paul

stands today as the farmers first and strongest ally in the battle for food supremacy. **Put that Ford to work.** Remember you have two-thirds of a tractor already in your car. A Staude completes the job and does double the work. It releases 20 acres for food for men that otherwise go to feed that four-horse team.

## Making Good With 7,000 Farmers

The triumph of the Staude Mak-a-Tractor has been so tremendous that any possible doubts of its efficiency have been swept away by the tidal wave of popular approval. The enthusiastic praise from users everywhere is the most convincing evidence that it has more than justified every prediction made for it. Thousands of farmers can testify that the Staude has stood up well under the most grueling test in all kinds of farm work and heavy hauling.

## More Work—Less Cost

It does continuously—24 hours a day if necessary—the work of four horses at the cost of feeding one. It plows an acre with less than two gallons of gasoline—is easy to attach and operate—can be used on Fords, Overlands, Chevrolets and other cars—is detached in 20 minutes, permitting the use of your car on the road—nothing to get out of order or require adjustment.

## Master of All the Farm Work

Attached in a few minutes to your automobile, the Staude Mak-a-Tractor will do your plowing, seeding, reaping, binding and hauling. Equipped with the Belt Power Attachment, it does your sawing, grinding, shelling, feed chopping, pumping and any other work that an 8-10 H. P. farm engine could do.

We are co-operating with the U. S. Government in the increased food production through greater acreage and increased yield per acre. The Staude Mak-a-Tractor will help you solve these problems.

I plowed 180 acres with my Staude at a cost of less than 50 cents an acre. My car is just as good as ever and the engine don't heat. I used about one quart of water a day. I plowed 6 acres a day, where I could only plow 6 acres with 5 horses on the gang. It does the work of six horses and not four.  
J. S. Welter, Grafton, N. D.

I cut all my wheat, 450 acres, with a Staude Mak-a-Tractor and am plowing 10 acres a day at the present time with a 14 inch gang, and don't have any trouble with it bending and it doesn't damage the car as much as running on the road.  
A. Christopherson, Flaxville, Mont.

My Staude Mak-a-Tractor pulled a 14-disc grain drill over 200 acres of newly broken prairie sod, pulled a 3-section harrow over 200 acres and the same drill over 450 acres more land—all newly broken sod. I averaged 2 1/2 acres per hour with the drill. It has proven absolutely satisfactory.  
Carl F. Erbebo, Garden City, Kan.

I have pulled two 16-inch plows in sod for five hours and 4 tons on the road for eight miles with my Staude Mak-a-Tractor and the engine never boiled. I don't see that it hurts the car and it will do all the company claims.  
C. F. HARRIS, Orange Lake, N. Y.

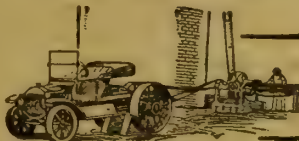
## Let Us Prove What We Say

Get ready to meet the shortage in farm help and horses. Put your farm on an increased production and efficiency basis. Fill out the coupon and get our two free books by return mail. Read the statements of some of the thousands of Mak-a-Tractor owners. Find out how YOU can increase output and profits and decrease cost of production.

Sign and mail the coupon today—NOW—while it's before you.

## The E. G. Staude Mfg. Company

2597 W. University Ave., ST. PAUL, MINN.



I have got my Staude Mak-a-Tractor belt power attachment at work and it sure is great for sawing wood and grinding feed. Sawn our 40 cords in one day, some as large as 14 inches in diameter and all three men could lift. I say it is great.  
Glenn C. Wood, Lima, Ohio.



Send this Coupon

The E. G. Staude Mfg. Co.,  
2597 W. University Ave., St. Paul, Minn.  
Please send me your two books and prove to me that I can profitably use a Staude Mak-a-Tractor with my car.

Name.....  
Address.....  
Name and Model of My Car.....

## Also for the Orchardists

With our specially designed Orchard rig, we can turn with perfect ease around the most difficult rows and work close to the trees with Staude Mak-a-Tractor.

Write for demonstration and information

## Tractor Sales Co., Inc.

California Distributors for the Staude Mak-a-Tractor

1111 Story Bldg.

Los Angeles, Cal.



# Armstrong Nurseries

ESTABLISHED 1889  
ONTARIO, CALIFORNIA

## Dependable Trees

Dependable Trees count for success in Orchard Growing whether home or commercial because—

- they bear early
- they bear big crops
- they bear large and marketable fruit
- fruit that brings top prices
- that fills the pocket book of the owner

**Mr. Armstrong personally guarantees that  
Armstrong Trees are Dependable**

Back of this guarantee is his worth and reputation for honest, square dealing of more than a quarter Century—

The best evidence that Armstrong Trees are developed to obtain results, and are as represented, may be secured from your Neighbor who has planted them—One pleased customer of hundreds writes—

"Trees arrived yesterday, inspected today. Inspector says they could not be any better—I am very much pleased with them." Later—"Of the large shipment of trees I received from you I only lost one tree. We all want Armstrong Trees in this neighborhood." —Mr. E. Carter, Yucaipa Valley, Calif.



Ascolano Olives

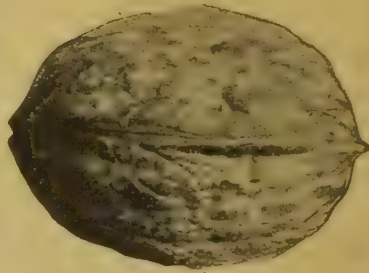
### OLIVES

In all of the olive sections of the State, Armstrong Olive Trees are known as thrifty, vigorous trees, with an abundance of fibrous roots—so essential, particularly in an olive tree, for the development of a uniform grove. In planting such trees you take no chance of finding it necessary to replant from 25 to 60 per cent of your trees.

"Your olive trees, planted here last year, have made a splendid growth, and have given perfect satisfaction." —A. W. Munn, Sacramento Co., Calif.

### WALNUTS

When you plant a Walnut tree, plant a GOOD, DEPENDABLE TREE. Armstrong Walnut trees are grafted on the native California Walnut by men who know how to make the grafts—how to take care of the tree—how to harden the wood—how to dig the tree and preserve all the root necessary to insure a strong, vigorous growth. This is INSURANCE to the planter. Our Nurseries are free from Walnut blight. Varieties—Placencia, Eureka, Neff, Mayette, Franquette.



Eureka Walnut

### APRICOT TREES

On Peach and Myrabotan roots. Extra strong, healthy, clean trees. Can supply Newcastle Early, Royal, Blenheim, Tilton, Hunskrke and Moorpark.

My Royal Apricots are propagated from the choicest strain carefully selected from the best producing trees in Southern California.

If you are planning large plantings, wire me for prices and other information desired.

### ORNAMENTAL TREES, SHRUBS and VINES

More than one-half of our big catalog is used to accurately and completely describe over 100 of the choicest varieties of Roses—Bush, Climbing, and Tree—new and old; Deciduous, Evergreen—Broadleaved and Coniferous—Trees and shrubs, Palms, Vines, Bedding and Border plants—Finely illustrated.

**we'll gladly send it—**

#### ARMSTRONG NURSERIES

404 N. Euclid Ave., Ontario, Calif.  
Please send me a copy of your 1918 catalogue. I am planning to plant:

Peaches ☐ Apricots ☐ Plums ☐  
Pears ☐ Apples ☐ Cherries ☐  
Walnuts ☐ Almonds ☐ Ornamentals ☐

What else? ..... How much? .....

Name .....

City ..... State .....

R. F. D. or St .....

"The organization, now numbering approximately 200 members, lends an optimistic view to the success of the association. The directors are earnest and enthusiastic and will spare no pains or leave no stone unturned to secure the aim and end of the undertaking.

"At the meeting the directors voted to have a fig exhibit in the latter part of September at Fresno. All kinds of fig products—fresh, dried, canned and preserved—will be on exhibition. This is for the purpose of boosting the fig industry, encouraging rivalry and showing to the people, not only of California, but of the world, what Cali-

fornia can do when she does her best. Industry Wins

"Not many years ago merchants in California, as well as in the East, were absolute in their opinions that this state could not produce a fig equal to the imported. It took much labor and pains to overcome this prejudice. But today these same pessimists freely and gladly admit that California has done it, and they can not lavish too much praise on her for the superior article now on the market."

Now comes planning for "Fig Day" When and how, later.

## June Drop

Written for California Cultivator By Mrs. M. H. Dewey

Like all others who own an orange grove, we have speculated on the problem of the June drop and what to do to prevent it. Not only have we speculated, but we have experimented some, and the following is the result:

We have two small parcels of ground planted to olives, three years ago, which I shall number 1 and 2 for convenience. No. 1 has a few large orange trees in one corner. Two years ago we planted Blackeye beans between trees on No. 1. Beans were planted late because we were told the red spider would take them if planted early. At harvest time no red spider had made its appearance. We harvested 12 sacks of beans. Olives had made a noticeable growth over those of No. 2. Orange trees had a good crop and oranges were the best grade they had ever been.

First of June, last year we planted our five acre orange grove and No. 1 to Blackeyes, No. 2 and a vacant parcel 100 feet by 150 feet adjoining No. 1 to Bayou beans. All were drilled in on the same day, but a few lands in the orange grove had been irrigated and were damp enough to bring the beans right up, the others were irrigated after planting.

Red spider bothered the Bayous quite a bit, but the Blackeyes not at all. The yield of Bayous on parcel 100 feet by 150 feet was three sacks, 80 pounds each; yield on No. 2 averaged about the same. Trees grew well, but No. 1 about a foot taller. Our house yard and barnyard take up quite a bit of the orange grove, which would leave about six acres in Black-

eyes, yield of which was 50 sacks of beans.

Where the lands had been irrigated before planting and beans slightly, though not fully shaded the ground when the hot wave came, was the only place we had many oranges. I believe had the beans been planted as soon as danger of frost was past, so there would have been good covering for the ground, and with the light though frequent irrigation and cultivation which beans must have on red ground to make a good crop, we would not have had much of a June drop last year.

When nothing is planted between trees, they are soaked for a day or two, then have to wait a month for water, regardless of whether the weather is hot or cool, a thing we would not do with anything growing in our garden, from which we expected fruit, and trees are but larger growth of plants.

The income from the beans is quite an item even if it did not help the trees, and Blackeyes are certainly the best bean to plant on red land such as we have in Thermalito. I should like to see every grove and all the vacant land planted to them just now when we all should raise all the food we can.

We are glad to give this space if it offers a suggestion which will prevent the ordinary June drop, but as to frequent and light irrigation being best for long lived citrus orchards we think the prevailing opinion amongst citrus growers is that heavy and deep irrigation, with as long intervals as possible between to allow the warming up of the soil, is best.

## Seedling Dates

Interest in date culture continues, and certain sections of California and Arizona are well adapted to this rich fruit. Of course, it goes without saying that some unwise planters are finding serious obstacles and certain wise planters are finding the same obstacles and overcoming them. One of the most serious has been the securing of sufficient suckers for planting. These were imported from northern Africa, and hundreds of them rooted and are fruiting, but other hundreds never started. The method of inducing rooting has been studied out until far greater success is now to be had, but importations from northern Africa under war conditions are an impossibility, hence the only opportunity of increasing the planting to the extent desired is through the use of seedlings.

We recently asked Dr. Forbes, director of the University of Arizona, as to the situation there and in a personal letter he writes: "While of course seedling dates are not as good a venture as date suckers from approved varieties, yet they are the next choice when you cannot get the

suckers. Then, too, seedling trees offer the possibility of choice new varieties now and then, and in fact new varieties must originate through the planting of seeds. Our date orchards at Tempe and at Yuma, Arizona, have produced very satisfactorily this year, the weather for date ripening purposes having been beyond criticism. Even the Deglet Noor with a little artificial heat has given us an excellent product this year, although ordinarily at our altitudes and with wet weather the Deglet Noor does not perform satisfactorily."

### CALIFORNIA SUPPLIES THE WORLD

The R. M. Teague Citrus Nurseries have lately exported orders of citrus trees to the following countries; Porto Prince, Haiti; Hermosillo, Sonora, Mexico; Yokohama, Japan, and Shanghai, China. In addition to this they are billing some large orders for Texas.

### STATE BOARD OF AGRICULTURE

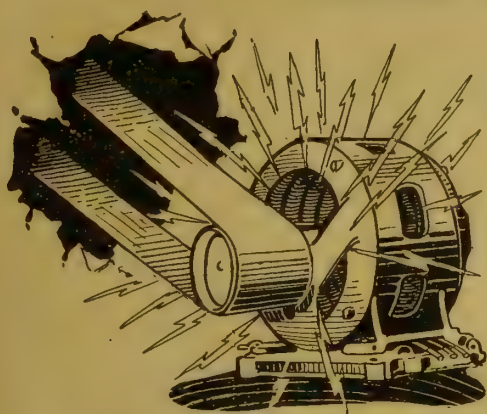
At the recent annual meeting of the state board of agriculture George Roeding of Fresno was elected president to succeed John M. Perry who has been president for several years. E. Franklin, Colfax, was re-elected vice president, and I. L. Borden, San Francisco, was re-elected treasurer.



# Help the Government.

Grow  
Larger  
Crops

**Late Rains Make it Important that Owners of Land Should Take Immediate Steps to Develop Water in Order to Produce More Foodstuffs**



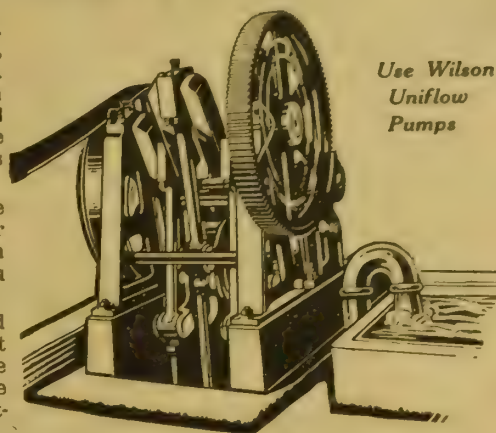
Use Crocker Wheeler Motor

Prices for all farm products are high and going higher. The cost of farm machinery, well and pump equipment, engines and motors has not begun to keep pace with the increased cost of farm products, so that based on the return to the farmer for crops raised, Now is a good time to develop water and put in pumping plants. There is sufficient material and equipment to meet the needs of this section.

If you are five minutes late and miss a train, the chances are that you will only lose a few minutes or hours or perhaps a day, but if you delay the installation of that new pumping plant and irrigation system, you will lose a year's profits.

Get in touch with one of our salesmen or engineers, and learn at first hands the true market conditions and just what it would cost you in dollars and cents to make that unproductive land of yours produce, and then figure out for yourself what rate of interest such an investment would return to you.

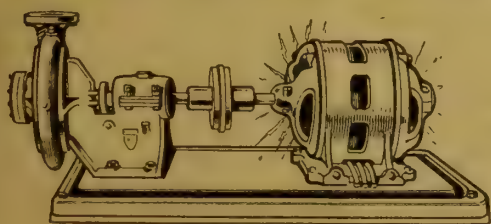
Form Table below shows how the Rancher can pay the present market prices for Irrigation Plants. The number of boxes of Oranges, pounds of Beans or Cotton or Tons of Alfalfa at the present time will buy more than at any previous time; hence, our present prices are very low.



Use Wilson  
Uniflow  
Pumps

Items	Navel Oranges		Lima or Navy Beans		Alfalfa		Cotton	
	1915 1.37 Box	1918 3.05 Box	1915 5.00 Cwt.	1918 12.00 Cwt.	1915 12.00 Ton	1918 22.00 Ton	1915 8c lb.	1918 28c lb.
Sample Outfit for 50 inches of water, 100 foot lift using Wilson Type "C" "Uniflow" Pump, Foos 15 H. P. Fuel Oil Engine, Brass Cylinder, Casing Rods and Belt.	1715 Boxes	1047 Boxes	470 Cwt.	266 Cwt.	196 Tons	124 Tons	29,375 lbs.	11,403 lbs.
Sample Outfit for 50 inches of water, 100 foot lift using Wilson Type "C" "Uniflow" Pump, Crocker Wheeler 15 H. P. Alternating Current Motor, Brass Cylinder, Casing, Rods and Belt.	1436 Boxes	893 Boxes	393 Cwt.	227 Cwt.	164 Tons	124 Tons	24,600 lbs.	9,732 lbs.
Sample Outfit for 100 inches of water, 50 foot lift using Goulds No. 6 Horizontal Centrifugal Pump direct connected to Crocker Wheeler 20 H. P. Alternating Current Motor and 50 feet suction and discharge pipe.	322 Boxes	213 Boxes	88 Cwt.	54 Cwt.	37 Tons	29 Tons	5,512 lbs.	2,322 lbs.
Sample Outfit for 100 inches of water, 50 foot lift using Goulds No. 6 Horizontal Centrifugal Pump, Foos 20 H. P. Fuel Oil Engine, 50 feet suction and discharge pipe and belt.	606 Boxes	390 Boxes	166 Cwt.	99 Cwt.	69 Tons	54 Tons	10,375 lbs.	4,246 lbs.
Crocker Wheeler 20 Horse Power 3 phase Alternating Current Motor.	209 Boxes	138 Boxes	57 Cwt.	35 Cwt.	24 Tons	19 Tons	3,587 lbs.	1,500 lbs.
Hercules 9 Horse Power Hopper Cooled Fuel Oil Engine.	164 Boxes	95 Boxes	45 Cwt.	24 Cwt.	19 Tons	13 Tons	2,812 lbs.	1,032 lbs.
Foos 25 Horse Power Standard Fuel Oil Engine.	653 Boxes	361 Boxes	179 Cwt.	92 Cwt.	75 Tons	50 Tons	11,185 lbs.	3,929 lbs.

**How About Your Present Pumping Plant?**  
Is it in good repair? Does it adequately serve your needs?



Use Goulds Centrifugal Pumps

**CUT OUT COUPON AND MAIL NOW**

Smith-Booth-Usher Co.,  
234 Central Ave., Los Angeles.

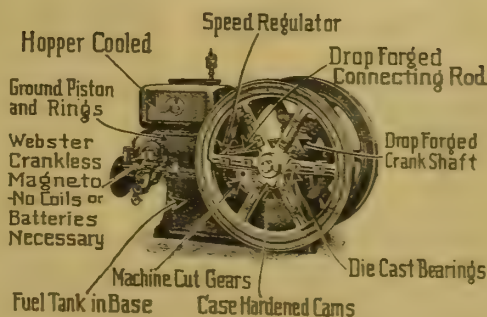
Please send me complete information on a Pumping Plant best adapted for the following conditions:  
Depth of well..... Size of well.....  
Depth of water when pumping..... Water desired, miners inches..... or gallons per minute..... Kind of Power—Motor or Engine. (Cross out one).

Or, please send me catalogs on:

Pumps ☐ Engines ☐ Motors ☐  
Air Compressors ☐ Supplies ☐ Pipe and Fittings ☐

Name .....

Address .....



Use Hercules Engines

**To Dealers:**

We have a very liberal proposition for unoccupied territory. Do your buying from first hands and erect plants from our plans and instructions.

## SMITH-BOOTH-USHER CO.


The Pump and Engine House of the Pacific Coast

234 Central Ave.

Los Angeles



## When You Overhaul that Engine



**McQUAY-NORRIS**  
**LEAK-PROOF**  
**PISTON RINGS**

It will certainly pay you to put in the best piston rings you can buy. Remember—in piston rings you're buying power, control of fuel and oil consumption and assurance of dependable service all through the season ahead. McQuay-Norris **LEAK-PROOF** Piston Rings have led the field for seven years. Their supremacy has been established by consistently efficient performance. They stop compression leakage—cut down cost of operation—reduce carbon.

Your dealer can get you any size or over-size quickly. Over 300 jobbing and supply houses in all parts of the country carry complete size assortments. If you have any difficulty getting them—write us.

**McQUAY-NORRIS**  
**Superoyle**  
**RINGS**

A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris **LEAK-PROOF** Rings in lower grooves to insure maximum compression and fuel economy.

**SEND FOR FREE BOOKLET**  
"To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.

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## Raise bigger crops with Planet Jr. tools

You can't meet the urgent need of cultivating increased acreage this year with old-style out-of-date tools and methods. Get Planet Jr Seeders, Wheel-Hoes and Cultivators, and double your acreage. They are strong, yet so light they can be readily used by a woman or boy. Fully guaranteed.

**No. 4 Planet Jr Combined Hill and Drill Seeder, Wheel-Hoe, Cultivator and Plow** sows all garden seeds (in drills or hills), plows, opens furrows and covers them, hoes and cultivates all through the season. A hand-machine that does the work so easily, quickly and thoroughly that it pays for itself in a single season.

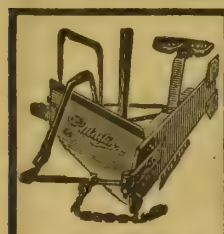
**No. 8 Horse Hoe** does a greater variety of work in corn, potatoes, tobacco, cotton, and other crops requiring similar cultivation, and does it more thoroughly than any other one-horse cultivator made. It is stronger, better made and finished. Lasts longer. Its depth regulator and extra-long frame make it steady-running. Cultivates deep or shallow and different width rows. 15 other styles of one-horse cultivators—various prices.

**SL ALLEN & CO Box 1106P Philadelphia**  
New 72-page Catalog, free!

Illustrates Planet Jr's doing actual farm and garden work, and describes over 55 different tools, including Seeders, Wheel-Hoes, Horse-Hoes, Harrows, Orchard, Beet, and Pivot-Wheel Riding Cultivators. Write postal for it today!

**No. 8**

We carry stock in Los Angeles. Agencies in all principal Pacific Coast cities.



## The Man-Saver

**THE Martin** Ditcher is a man-saver, and a time-saver—therefore a money-saver. Two men, four horses and a Martin will make or clean more ditch in **one day** than they could plow and shovel out in **three weeks**—time and man saving are big items now.

**Fine for Terracing, Dykes and Roadwork**

Made in 2, 4 and 6 horse sizes; can be used with tractor. Works equally well on side hill or level, or in wet or dry soil. Handles rocks and cuts alfalfa roots without plowing. Cuts or cleans ditches down to 4 feet deep. *All Steel, Reversible and Adjustable. Investigate the Martin NOW.*

**OWENSBORO DITCHER & GRADER CO., INC.**  
1570 Wazee Street  
Denver, Colorado

**Model 20**

**SOLD ON TRIAL**

**Catalogue Free Write For It—**



## Perforated Tree Protectors

Why use anything but a **PERFORATED PROTECTOR**, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small **LATH HOUSE ABOUT EACH TREE**. Protects from Squirrels—Rabbits—Gophers—Hot Sun—Sand Storms—Barking in Cultivation, etc.

We make a number of kinds. **TELL US YOUR PEST**, and we will tell you what kind to buy. Get our prices. We can save you money.

**COLLAPSIBLE PLANTING POTS**

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

Write for samples and prices of both Pots and Protectors. State which you are interested in.

**THE EXPAN CO., 935 E. Central Ave., Redlands, Cal.**

## Good News for the Grape Growers

**T**HE board of viticultural commissioners is doing some very practical work and is now distributing grape cuttings to vineyardists. A bulletin will soon be ready for mailing, which will give valuable information. Here are the main points of the bulletin:

### Free Distribution of Grape Cuttings

In its constant desire to elevate standards of production of grape varieties in California and to offer to the country the best fruit that may be obtained anywhere in the world, this department of the state government after thoroughly discussing the subject at several meetings has decided to inaugurate practical experiments in different sections of the state in the cultivation of the vine known as the Ohanez variety of Almeria grapes. These grapes are better known to the Eastern consumers of table grapes than they are to our own California people. They are cultivated to a limited extent in this state and their presence in the markets of the East is due not to production anywhere else in this country but to extensive importations from Spain.

In normal seasons over 500,000 drums of these grapes come into the country from Spain and the method of shipment is in kegs with a packing of cork dust surrounding the bunches of grapes. The notable characteristic of this variety of grapes from the Almeria district of Spain is its keeping quality, and for many years it has had a monopoly of the Eastern market. The fruit has often commanded from 25 cents to 50 cents per pound because of being in fresh state in the winter season. Whatever competition there has been has come from California in a limited way in small shipments of our Emperor grapes which are packed in kegs or drums in redwood sawdust.

The Emperor grape is not as good a keeper as the Almeria article, and yet we believe the Spanish variety may be cultivated in this state extensively and successfully. There are a few small plantings in California now and the product of some of these vineyards has demonstrated this year their wonderful keeping qualities. The berry is of greenish cast somewhat similar to the Malaga, but very often showing spots on the surface of the berry due to a natural characteristic of the grape.

This board desires to encourage extensive experimental work in the cultivation of this variety and will send to all who inquire as long as the supply lasts a number of these cuttings, free of all expense excepting what the express charges may be from Dinuba, California, to the post office addresses of those who may wish to experiment. The cuttings will be tied in bunches of 25, and we would prefer limiting the number to each individual to 50 of such cuttings in order that the supply may serve a wide distribution. We suggest that the experimental work in this direction be attempted in almost every section of the state in order that we may observe results and be able later on to advise intelligently where these grapes may best be grown. We suggest that they be planted to some extent even in the coast counties as well as in the interior valleys and also in the foothill regions in the various localities of the state. It is only by means of such wide distribution and the planting under various climatic and soil conditions that we may

be able to ascertain just what the grape is worth to the state.

The fruit matures rather late in the season and for this very reason it may be that some localities are unsuited to its cultivation. Our experience in a limited way with the Almeria grape indicates, first of all, its wonderful keeping qualities and retention of firmness even under adverse conditions of storage. If we can produce and harvest these grapes extensively and successfully we will have made a great stride toward serving ourselves and the consumers in the Eastern markets of the country with a most delicious winter grape.

Let applications for these cuttings be directed to Board of Viticultural Commissioners, State Capitol, Sacramento, California. There will be no charge whatever for the canes and the only expense to be borne by the applicant is the slight cost of transportation.

The cuttings are being gathered now by the state board of viticultural commissioners at some considerable expense and we hope also to be able to furnish for experimental purposes a limited quantity of cuttings of the Red as well as the White Corinth. These are commonly known as the Zante currant and our country over a great period of years has relied entirely for this currant on importations from Greece, the amount imported averaging 45,000,000 pounds annually. There is no reason why we should not also produce Zante currants in California and we mention this in connection with the Almeria offerings in order that we may have some experiments also in the cultivation of the Zante currant. There are few Zante currants grown in the state in a commercial way but we have had sufficient observation to induce us to believe that there should be greater plantings of this particular variety which always commands in dried state a fancy price in the markets. There will not be at our disposal a large quantity of cuttings of the Zante currant but we will gather as many as possible and distribute them under the same auspices as above mentioned. Unlike the Almeria grape the Zante matures early and in all favored localities the drying process may be safely resorted to without more than the ordinary chance of unfavorable weather.

On receipt of applications for any of these cuttings this office will take pleasure in acknowledging the application and in giving brief and proper directions as to the method of planting. We trust that the experiments will redound to the great good of the state commercially.

### AMERICAN ASSOCIATION FOR AGRICULTURAL LEGISLATION

There has been recently formed an organization known as the American Association of Agricultural Legislation whose purpose is to investigate, initiate and promote agricultural legislation. The organization was effected at the meeting of the American Economic Association in Philadelphia. Prominent officers and members of the American Economic Association, including its president, Dr. John R. Commons, Dr. Richard T. Ely, Dr. Elwood Mead and others, felt it highly desirable that some formal recognition be given to the pressing problems affecting agricultural conditions throughout the country. Emanating out of this feeling came the new organization. The officers of the association are: President, Elwood Mead, University of California, Berkeley; vice president, G. F. Warren, Cornell University, Ithaca, New York; secretary, Richard T. Ely, University of Wisconsin, Madison; treasurer, H. C. Taylor, University of Wisconsin, Madison. All interested in the work of the association are invited to send a membership fee of \$2.00 to Dr. Richard T. Ely, Secretary, Madison, Wisconsin.





TRUNK OF BLIGHT RESISTANT PEAR IN CHINA

Agents of the United States department of agriculture have discovered in China a wild pear tree which will stand exceeding cold, is blight resistant and makes an excellent stock on which to graft. These photographs are used by permission of the department of agriculture and were taken by Frank N. Meyer, agent of the department in China. The department is calling attention to this resistant stock and is endeavoring to secure a large supply of the seed, for the trees are rapidly disappearing, as is shown in the upper picture. The research work regarding these pears has also been aided by F. C. Reimer of the Oregon agricultural station, and Mr. Reimer is now endeavoring to secure a large amount of the seed. These trees are in Chili Province. Mr. Meyer first saw them some nine years ago when the natural forest was almost untouched.

ORIGIN OF THOMPSON SEEDLESS

Wm. Robertson, secretary of the Fresno County Chamber of Commerce tells its true story. He says: "Much has been written regarding the Thompson Seedless raisin, and in some quarters an attempt has been made to cast a halo of romance and mystery around it, as to its origin. "That it got established in our midst by accident seems certain, but that it was a freak in any way, or a grape that was unknown, is an entire mistake. The real origin of this excellent vine in California was that it came in a shipment of vine rootings under a different name, which had been ordered from a well known firm of nurserymen in Rochester, New York. That firm had a reputation for handling many rare plants of different kinds and frequently gave them fancy names to cover up the real identity of the species. "When Mr. Thompson found that it was different from the others, and found also that it was a vine of merit, he immediately instituted inquiry as

to its real name and character. A good deal of speculation was indulged in as to its origin and history, and this was finally traced down to an exact record of its history. "The name Thompson Seedless is a misnomer, having been given to it as a compliment to its supposed discoverer, and has stuck to it as a commercial title for business purposes. Its true name and history are as follows: The Sultanina grape in this state, erroneously known as the Thompson

Seedless, is a variety of Persian origin, and has for many centuries been cultivated in Asia as the principal seedless raisin grape. "It was at various times introduced into the United States, and eventually came to California, through the medium of Ellwanger and Berry, who were well known nurserymen of Rochester, New York. It was sent by them under various names, the most prominent being Lady De Coverly. It was first grown by Mr. Thompson near Yuba City, after whom it was named. The first grower who planted it in Fresno County was a Mr. Blowers, now living in the Sacramento Valley. "It has been definitely shown in history that the Sultanina grape was grown in China 2400 years ago. It is also coming yearly into greater favor as a table grape."

**INSECTS AFFECTING COTTON**  
Cotton growers may write to the Division of Publications, United States Department of Agriculture and ask for Farmers Bulletin No. 890, "Insects Affecting the Cotton Plant and Ways of Combating Them," by W. Dwight Pierce.

THE SOUTH MAY PRODUCE SMYRNAS

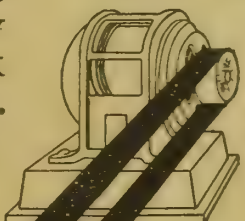
The government authorities are interesting themselves in introducing Smyrna fig culture to the Southern states. The bringing of the blastophaga from California will make this possible. Ever since the successful establishment of the capri fig fertilizing insect in California and the production of considerable quantities of Smyrna figs on the west coast it has been the hope of many people in the South and of the department of agriculture to establish a similar industry in the Gulf States. As many people in the South know, there are in a number of towns and villages large fig trees which are sterile. Recent investigations by G. P. Rixford of the federal bureau of plant industry and George E. Murrell, horticulturist of the Southern Railway, have shown that many of these sterile trees are in reality Smyrna trees which have not borne fruit owing to the absence of the particular insect necessary to fertilize the flowers. Both male, called capri trees, and female Smyrna fig trees are present.

BELTING

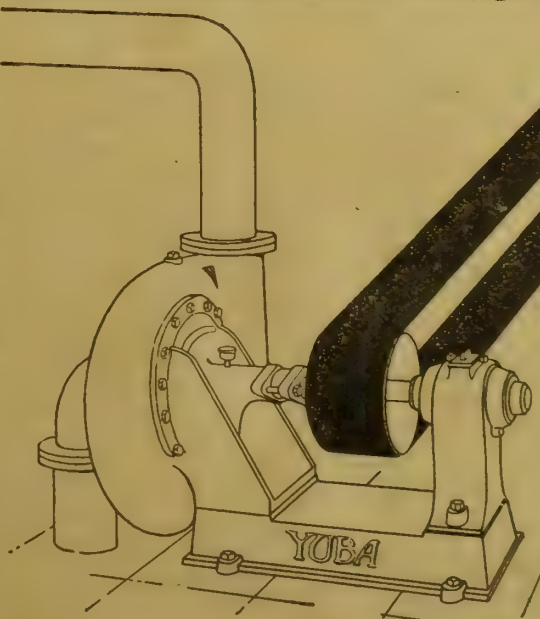
The intelligent farmer of these days understands many mechanical principles; he comprehends what the scientist has proved in the relation of leguminous plants to nitrogen in the soil; what is meant by r. p. m. and by differentials, magnetos; distillate and grease; but it seems he has no conception of the difference between TEST SPECIAL belting and all the other kinds offered to farmers, with no manufacturers' guarantee to back them.

TEST SPECIAL BELTING is made to wear---to give long and satisfactory service---to give years and years of work the cheap belting doesn't do and can't do. It is foolish to buy poor belting, just as it is bad judgment to invest money in wildcat schemes---or cheap machinery that won't stand up to the work.

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{ Steam Engine.....	{ Driven Pulley.....
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Straight.....  
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Width of Belt..... Ply.....  
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 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, Feb. 16, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

Deodaras are amongst the most beautiful trees grown in California, and it is with pleasure that we give this week a photograph of two of the lesser known varieties which were grown by Mr. Roeding of Fresno on one of the first lands used by the Fancher Creek Nurseries. The one on the left is Cedrus deodara viridis; the one on the right, Cedrus deodara verticillata. These beautiful cedars are amongst the oldest of their kind in the state.

## W. S. S.

Bought your war savings stamps yet? If not, get at least one and start your thrift card and "do your two-bits" every once in a while. It gives you a comfortable feeling; it supplies funds for a mighty war; and it's good finance for all of us.

## SMALL POTATOES

All of us have at times eaten good home-made bread with a liberal portion of mashed potatoes in its makings. There are now millions of bushels of small potatoes in the United States not specially high priced. There is need of war bread substitutes. Let's try some small potatoes in our bread.

## CHEAP MEAT

There are sections of Arizona which have suffered very considerable losses from the depredations of rabbits. The boys are turning an honest penny and conserving food by inaugurating a series of drives and using shotguns and dogs in capturing the pests which are then turned into "canned chicken," and many a family is now eating decidedly good and inexpensive meat on otherwise "meatless" days. Kill the varmints and can 'em.

## LESS DAYS

The housewife and everybody that eats has some task these 'less days. On page 204 this week we give the new food program sent out by the food administration at Washington. We have heard housewives say: "O, yes, we observe it, but not literally; there are so many meals when we don't eat meat that we are observing the ruling in spirit." All of which is good, but we believe it better to follow to the letter as well. We are realizing more every day the awful need of the world, and this bit of economy which is asked of us is little enough for any true patriotic American.

## SUGAR BEETS

Commissioners Cogswell, Rogers and Perry are still listening to reports of sugar beet growers and finding large numbers who have planted sugar beets at a cost of around \$100 per acre and received gross return of anywhere from \$60 to \$100 per acre and apparently have determined that sugar beet growing has not been exceptionally profitable for the past two years. The hearings will continue for some days, for the manufacturers side is yet to be heard. Whether a \$10.00 price will be agreed upon we cannot say, but plainly a price much higher than the factories have been willing to pay will be made.

## WE LIKE IT

Don't you like that liberty bread? We do. The housewife makes a bit of face when she says: "But rye flour costs more, corn meal costs as much; and all the substitutes in the end are more expensive than wheat flour." And we have heard one complain because her family does not like pastries made with partial substitution of other than wheat flour. Too bad! For all such we would suggest a look across the continent and the ocean to the awful suffering of peoples actually in the war zone, then a look back at American freedom for which we are fighting, and at conditions as they exist in America; then consider seriously the slight sacrifice asked of us and eat with joy that which is really better for us than the old time fine flour.

## FIRE PREVENTION

Scarcely an evening passes but one may cast his eyes toward the hills and see the glare of the midwinter fires. Such a scene is all too common for California in summer-time, but never have Californians seen so many disastrous forest and field fires in midwinter.

The forest service is launching a fire prevention campaign. Every spear of grass is too valuable to permit of the sweeping of a single field fire, and to the end that best results may be accomplished a forest industries committee has been appointed consisting of State Forester G. M. Homans, chairman; Acting District Forester Roy Headley; Professor Woodbridge Metcalf of the college of forestry, University of California; C. Stowell Smith, secretary of the California White and Sugar Pine Manufacturers' Association; and R. E. Danaher, president of the R. E. Danaher Company.

State Forester Homans said in discussing the work of the committee: "The time has come when all interested in fire prevention must pull together. We must prevent a situation arising similar to the one in Oregon last summer when the governor found it necessary to place troops in the woods. California cannot afford to lose an acre of forage, a sack of grain, or a carload of lumber by fire. Moreover, there will be no surplus labor with which to fight fires. It will be necessary that every citizen take upon himself the responsibility for the prevention of fires."

## This Week's War News

The Central Powers have sent an ultimatum to the Rumanian government demanding that peace negotiations be begun within four days. The entire Rumanian cabinet resigned.

Notwithstanding the awful cost in her best men and her wealth, a wave of patriotism is sweeping Canada from the Pacific to the Atlantic, and volunteering is proceeding as never before.

Arrests were made of a large number of passengers on the Dutch liner, Nieuw Amsterdam, and seizures made of secret Teuton codes to be used in sending to Europe information from German spies in this country.

The trial of Bolo Pasha continues in Paris. One witness testified that he first mistrusted treason when he saw Bolo in conference with the owner of a chain of newspapers in the United States whose patriotism has been questioned.

"Poised for the opening," is believed to be the present attitude of the German forces on the French front. They are known to be rushing fresh troops to the West, and the first favorable weather condition will see a great battle.

The first treaty of peace fully completed since the beginning of the war is that of Germany with the Ukrainian republic. The Ukrainians have contended with the Bolsheviks for control of the richer southern portion of Russia, and thus far have prevailed. The final signing was on Sunday, February 10. This will release many German prisoners and open up the rich resources of southern Russia's great wheat belt to feed the Central Powers.

America fully realizes she is at war. The first transport, the Tuscania, has been sunk, with loss of over 100 lives, most of them American soldier boys. She was sunk off the north coast of Ireland at 11 p. m. February 6. Officers and men on board numbered 2173. The greater number of the 100 or more who lost their lives were wounded by the explosion of the torpedo from the submarine. Many California boys were aboard the vessel, though most of the troops were from the Middle West.

On an hour's notice President Wilson convened both houses of congress on Monday, February 11 and delivered a message which is taken as a reply to Count Czernin, Hungarian foreign minister, and von Hertling, the German chancellor. The message conveys kindly feeling toward the Austrians and commends the tone of Count Czernin's reply to the president's former message. He accuses von Hertling of being evasive, vague and even shifty. He said: "The power of the United States is a menace to no nation or people. It will never be used in aggression or for the aggrandizement of any selfish interest of our own. It springs out of freedom and is for the service of freedom."

The Bolsheviks, or believers in peace at any price, to such an extent that they caused the murder of practically all the officers and efficient fighters in the armies of Russia, now find the Teuton demands so unjust that they refuse to sign a treaty with the Central Powers. Internal conditions continue to grow worse, and murder and arson are rampant in Petrograd, Moscow, and practically all the northern provinces. The army has been demobilized. Report through German sources that the northern Russians had entirely withdrawn from the war is confirmed by statement issued by the Bolsheviks: "No military operations must again take place. The beginning of a general demobilization on all fronts is decreed."



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Miscible Oil No. 2 will kill pear thrips in the bud better than any other spray—there is no question about it. Order your spray now.

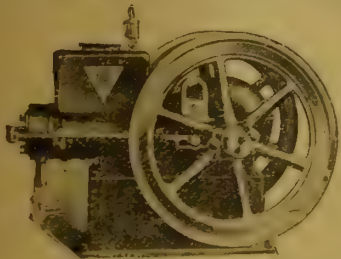
If you will write our entomologist, Paul R. Jones—acknowledged an expert in the control of pear thrips — he will be glad to help you to decide your individual spraying problems. This expert advice is free. Write today.

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## Agricultural News Notes of the Pacific Coast

### Northern California

Farm center at Gridley, Butte County has 120 members.

The Western Canal Company will raise its levees in Butte County.

The California Bean Growers' Association is now fully organized.

A large tract of land has been leased in Yolo County for the planting of sugar beets.

Mendocino hop growers are discussing the labor situation and as to the possibility of securing more for next season's harvest.

Sacramento Valley has had less than half the normal rainfall; steps are being taken to conserve all moisture that has fallen.

At a meeting of hop growers at Ukiah a basis price of \$25 for high poles and \$30 for low poles for working hops was agreed upon.

The plant introduction garden at Chico, Butte County, is making distribution of plants. The distribution is under the direction of Superintendent R. L. Beagles.

The Northern California Stock Association recently held a meeting at Redding, Shasta County, and asked for a uniform bounty on coyote scalps within the state.

The rice mill at Woodland, which recently started for the season, contemplates grading rice so as to give the producers of better grade prices according to quality.

Butte County rice growers are objecting to shipments of oriental rice through this country in bond, maintaining that it used rolling stock that could be used in transporting American grown rice.

Placer County has a great crop, seldom referred to — ladybugs. These are being gathered by millions by E. J. Brannigan of the state horticultural commission for distribution in melon raising sections of the state.

Solano County farm bureau has divided the entire county into districts, with a captain over each district, and proposes to wipe out every squirrel in the county. The fire-fighting system, probably the best of any rural district of the state, will be continued another season.

### Southern California

Recently planted melon seeds are coming up in all sections of Imperial Valley.

Hemet, Riverside County, will have an output of about 40 carloads of oranges.

Walnut growers of Moorpark, Ventura County, netted a neat \$85,000 for the past season's crop.

Professor Bryant of the state university recently held dairy demonstration at the Stalder Ranch, Riverside.

The half rate water now available to sugar beet growers of San Fernando Valley has materially increased the planting.

The Heber Cooperative Creamery Company has been reorganized and financed and is now in operation after a short rest.

Riverside Beekeepers' Association recently elected for the coming year, president, R. Powell, secretary, E. W. Horne, Riverside.

Owing to rain shortage honey producers announce that it will be practically impossible even with later rains to produce normal crops this year.

The irrigation district board of Imperial County in its annual report shows receipts of \$1,158,646 during 1917. Operating expenses during the year were \$760,000. Taxes paid aggregated \$6,639.

For the season up to January 1, Imperial County ginned 32,494 bales of cotton. The total for the preceding year was 24,271 bales. Palo Verde Valley ginned this year 4,771 as compared with 3,967 last year.

The state highway between San Diego and El Centro, Imperial Valley will soon be completed. Nearly three-quarters of a million dollars has been the cost to the state, and it is expected the federal government will aid in this work.

### Central California

Castroville, Monterey County, now has a regularly organized farm center.

Land owners of Kings County have indorsed the Kings River conservation project.

Traveling Farm Adviser Rice, after work with the Tulare farm bureau, is now working in Kern County.

California Peach Company, Incorporated, has a slogan "Cleanest peaches and permanent demand."

Rice growers of the state are pleased at possibilities of having privilege of milling rice in transit to Eastern markets.

County Farm Adviser Jungerman of Stanislaus is discussing rice production with farmers having lands fitted for that crop.

It is sincerely hoped that there have been several million deaths in Stanislaus County. This refers to squirrels. The campaign has just ended.

The Raisin Growers and the Peach Growers' Associations, both together have recently divided up among their members well up towards \$3,000,000.

In the effort to grow cotton San Joaquin and Sacramento Valleys will center upon long staple, and the wisdom of enacting legislation preventing mixing of other types of cotton is being discussed.

The cannery at Tulare plans to double its capacity for producing tomato paste. Contracts are still being made with planters in nearby sections. It is hoped that 10,000 tons of tomatoes will be worked up at this one institution.

The food administration has named prices on various types of flour. Family flour is \$2.95 per 49 pound sack, this at Los Angeles, Stockton, Sacramento and Fresno. Entire wheat flour will be \$2.90; rye flour, \$3.05; rye meal \$3.00; barley flour, \$2.90; corn meal, white, \$3.00; yellow, \$2.75.

Irrigators of the San Joaquin Valley are appealing from the ruling of the internal revenue department that irrigation taxes may not be deducted in making payment for income tax. The department takes the ground that irrigation taxes, like street and other assessments, enhance values and are not legitimate "expense."

### The Coast and General

There are 22 cooperative cheese factories in Tillamook County, Oregon.

Washington farmers seeking for sack prices, find 25 cents to be lowest.

Fishermen taking fish from salt waters must now work under federal license.

Two ounces of wheat bread per meal at restaurants and hotels is now the limit under federal ruling.

The total value of imported beans commandeered by the federal government in various ports of the Pacific Coast this week is \$1,250,000.

The total amount of timber cut on the national forests in the fiscal year 1917 was 840,612,000 board feet, as against 714,505,000 board feet in 1916.

Senator Poindexter wired a grain convention, recently held in Washington, that he will do all in his power to have the food administration establish a primary interior grain market.

A federation of various farm organizations of Idaho was recently organized at Lewiston. Amongst affiliating organizations were The Grange, Society of Equity, State Fruit Growers' Association and Potato Growers' Union.

About 200 board feet of wood is used in the actual construction of the average airplane. To obtain this material it is ordinarily necessary to work over about 1500 feet of select lumber, which often represents all that can be used for airplanes of 15,000 board feet of standing timber.

Wool growers of Washington recently met at Yakima and resolved to answer the government's appeal for greater production, and to the end that greatest production could be secured, appeal to Secretary Lane of the Interior for the opening of Rainier national park for summer grazing.

# 1918 Catalog

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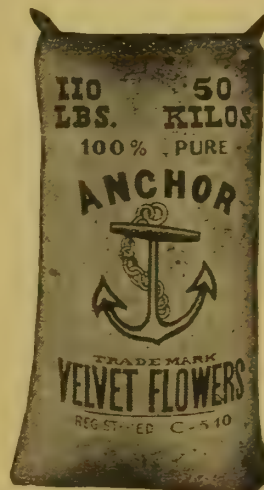


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Farm, Garden and Orchard Tools  
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**IRON AGE Potato Planter** solves the labor problem and makes the best use of high priced seed. Means \$5 to \$50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today. No Misses

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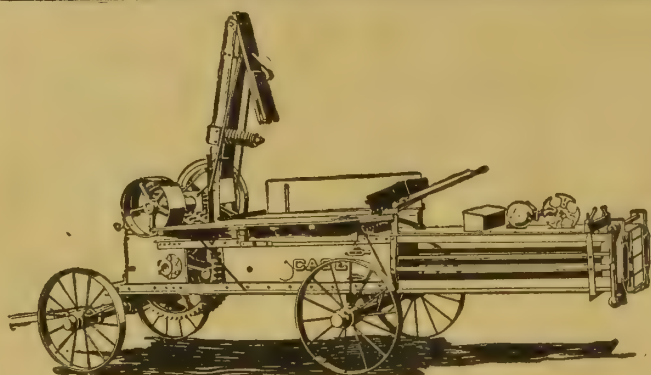
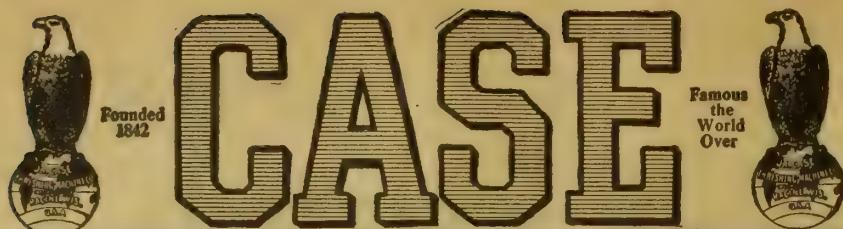
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They are constructed entirely of the best steel, the frame extra heavy and hot riveted. This keeps all parts permanently in line, and eliminates an endless amount of trouble found in balers constructed of wood and cast iron.

In addition, we also manufacture a sweep power press for those who do not require the capacity of belt power balers. Write today for our booklet which describes Case Hay Balers in detail, with pictures. A copy will be sent free for the asking.

We also call your attention to the other Case power farming machinery named below, should you wish information regarding Tractors, Threshers, etc.

**J. I. CASE THRESHING MACHINE CO., Inc.**  
(Founded 1842)  
778 Erie Street, Racine, Wis.

**Send For This Descriptive Printed Matter. All Free.**

Below are listed the different series of booklets and folders. Tell us which interest you.

**FREE  
Books**

- 1—Kerosene Tractors
- 2—Steam Tractors
- 3—Grand Detour Plows
- 4—Threshers

- 5—Hay Balers
- 6—Silo Fillers
- 7—Road Machinery
- 8—Automobiles

Or, if you wish, ask for our General Catalog, describing the entire Case line. It is free.

**Write  
Today**

## The Tractor Disk That Stands Up!

Why waste your tractor power pulling a poor disk? No disk should be run behind a tractor unless it is built especially for that kind of work. It must do equally well after the plow or on stubble. The leader for a dozen years is the

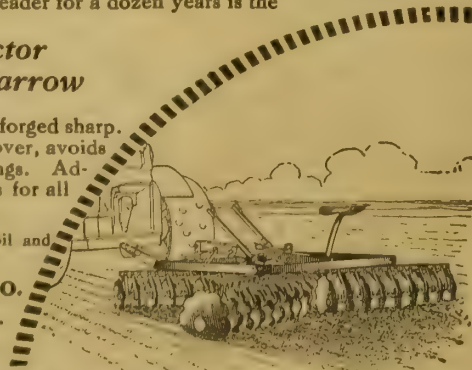
**Cutaway Tractor  
(CLARK) Disk Harrow**

Built extra strong, with heavy disks forged sharp. Rigid frame does the work in once over, avoids packing. Two levers control all gangs. Adjustable hitch. Light draft. Sizes for all tractors, light or heavy.

Write for free catalog and book "The Soil and Its Tillage" and name of CUTAWAY dealer.

**The Cutaway Harrow Co.**  
707 Main Street, Higganum, Conn.

Makers of the original CLARK Disk Harrows and Plows



**E. P. BOSBYSHELL CO.** General Agents  
Dealer in Farm Implements, Vehicles and Road Grading Machinery  
125-127 N. Los Angeles St. Los Angeles, Cal.

When writing advertisers, mention The Cultivator.

## A Menace to Our Future

Land Speculators Greatest Bane of the State. Rich Acres Bought at Low Prices in Large Tracts and Re-sold to the Uninformed at Prices Which Prevent Success.



AND speculators who have unduly advanced prices have much to answer for to well wishers of California. There is legitimate advance which comes with improvements and advantages and with market conditions, which make it possible to purchase and sell at a profit, and there are other advances in price which are beyond reason and which result in ruining the farmer, or would-be farmer, who is not wise in figuring production costs. The California land settlement commission made an investigation regarding methods, and this investigation brought out facts which should help more settlers with cool heads to estimate the chances for success in their chosen line of farming. Another great help in this line is "What the Settler Should Know," written by Thomas Forsyth Hunt, but unfortunately the "back to the land" appeal comes to a class of people with limited means and with a desire to be their "own boss" with such effect that reason is forced to the winds and a small "down payment" made at the time, leaving the cost of living and future payment on the land to be made out of the soil. This has led to untold suffering, entire loss of some families' holdings, and, least of all perhaps, to the discredit of the state. Our land settlement commission is today taking a hand and will in time educate our people. Meantime chambers of commerce can aid materially in discouraging this type of promotion work, and many such bodies have already taken action along this line.

One of our readers, R. Gilhousen of Los Angeles County, referring to an immense tract of land near the central part of the state which was bought for \$18 per acre and later sold for an average of \$156, and to other smaller settlement propositions, says:

"There are a number of these colonization companies, as they call themselves. More truthfully speaking they should be called, 'Get Rich Quick Companies,' for their sole object in operating is not for the good of the state or the welfare of the homeseeker, but the enrichment of the land speculator.

"There is some good land in some of these colonies though a great por-

tion of it is very inferior for farming purposes. There are four grades of this poor land, any of which the inexperienced can be deceived in, namely: alkali, hardpan, poor sand, and hog-wallow.

"These companies have their local agents in all California. Their business is to hunt up men who are trying to act on the much published advice, 'Get back to the land,' and who either have property or money enough to make a first payment on a tract of land. On their arrival in the colony they are taken to see some of the best land and some of the best improved places and to interview certain men while being steered clear of others. They are given the impression that the land is all equally productive and that it is easy to pay out on the land from the proceeds of the crops.

"These are the facts: In places the settlers are going out as fast as they are coming in, leaving their improvements and the companies keeping whatever payments they may have made. Numbers of men who have passed the meridian of life have been forced to go and leave their life's hard earnings in the hands of these heartless and soulless companies. The company men will then whitewash the buildings and sow a little barley. When the barley gets green the trap is sprung on another victim to the tune of \$25 an acre in advance for the improvements.

"When you consider that much of this land would not rent for two dollars an acre and that \$150 an acre at six per cent means nine dollars an acre cash rent, you can understand something of the 'con' game. When the settler has to put in his own pumping plant which costs him from \$1000 up, pay the taxes, put on his improvements and pay one-tenth of the principal yearly, it will be seen how effectively he is trapped and hopelessly stung.

"I respectfully ask, 'Has the state no interest in the welfare of its citizens?' The government should act at once to give the needy and willing worker access to his God-given heritage, 'Mother Earth,' and at the same time choke off these blood-sucking vampires."

## The New Food Program

The food administration asks every loyal American to help win the war by maintaining rigidly as a minimum of saving the following program:

Two wheatless days (Monday and Wednesday) in every week and one wheatless meal in every day.

Explanation: On wheatless days and in wheatless meals of other days use no crackers, pastry, macaroni, breakfast food or other cereal food containing wheat, and use no wheat flour in any form except the small amount that may be needed for thickening soups or gravies or for a binder in corn bread and other cereal breads. As to bread: if you bake it at home, use other cereals than wheat, and if you buy it, buy only war bread. Our object is that we should buy and consume one-third less wheat products than we did last year.

One meatless day (Thursday) in every week (not in California at pres-

ent) and one meatless meal in every day. Have two porkless days (Tuesday and Saturday) in every week. Explanation: Meatless means without any cattle, hog or sheep products. On other days use mutton and lamb in preference to beef or pork. Porkless means without pork, bacon, ham, lard or pork products, fresh or preserved. Use fish, poultry and eggs. As a nation, we eat and waste nearly twice as much meat as we need.

Make every day a fat saving day (butter, lard, lard substitutes, etc.). Explanation: Fry less; bake, broil, boil or stew foods instead. Save meat drippings. Use them and vegetable oils for cooking instead of butter. Butter has food values vital to children, therefore give it to them. Use it only on the table. Waste no soap. It is made from fat. Be careful of all fats. We use and waste two and a half times as much fat as we need.



# Kirkman Nurseries

Established 1888

Wholesale Growers of

## High-Grade Nursery Stock

DECIDUOUS AND CITRUS FRUITS

OLIVES AND GRAPE VINES  
SHADE AND ORNAMENTAL TREES

Twenty-nine years of continuous and consistent service to the Western fruit growers.

There is a shortage of trees this year. To make sure of getting just what you want, place your order now.

Address Main Office

2522 Tulare Street  
Fresno, Cal.

Make every day a sugar saving day. Explanation: Use less sugar. Less sweet beverages and candy containing sugar should be used in war times. As a nation we have used twice as much sugar as we need.

Use fruits, vegetables and potatoes abundantly. Explanation: These foods are healthful and plentiful and at the same time partly take the place of other foods which we must save. Raise all you can for home use.

Use milk wisely. Explanation: Use all of the milk. Waste no part of it. The children must have whole milk. Use sour and skim milk in cooking and for cottage cheese.

### Hoarding Food

Anyone buying and holding a larger supply of food now than in peace time, except foods canned, dried or preserved, in the home, is helping to defeat the food administration in its attempt to secure a just division of food and the establishment of fair prices. The food hoarder is working against the common good and even against the very safety of the country. Hoarding food in households is both selfish and unnecessary. The government is protecting the food supply of its people.

### PLACER COUNTY FARM BUREAU MEETING

The board of directors of the Placer County Farm Bureau (this includes vice directors and directors-at-large) is called to meet at the Auburn Hotel, on Saturday, February 23, at 10 a. m. Of importance are the following reports: Lime Committee on Rattlesnake lime prospects; lime report by J. A. Teagarden on Mt. Quarry prospects; assistant farm adviser committee preliminary report; cold storage trip report; selection of three directors and substitutes to attend the annual farm bureau conference, March 11-16, at Berkeley. Tuesday, Wednesday, Thursday, Friday and Saturday will be spent in an auto tour of the counties between Berkeley and Bakersfield.

We also should arrange to have our entire board at one-day conference at Berkeley, March 11. We can drive down on Saturday and return Tuesday. Farm Adviser Amundsen will present the important farm bureau activities in regular project form. These will include the work in securing lime, cold storage plants, purchasing and marketing, farmers' mutual fire insurance, road names and signs, farm names, etc. At future meetings each project will be reported and progress noted until completed. Farm bureau members are invited to attend this meeting. All are requested to be on hand promptly on time.—J. A. Teagarden, president; Edw. O. Amundsen, farm adviser.

### FORESTRY WORK IN THE ARMY

Any young man who may wish to serve abroad in forest service, lumbering or construction work, in bridge building or similar lines should write at once to Forester, Washington, D. C. He says 6000 men, lumber jacks, saw mill workers, experienced builders to serve in saw mill units and in road building battalions will be needed. He also wants men familiar with operating of rock crushers, road rollers, scrapers, motor trucks, etc. A very limited training and drilling in this country is given and men are sent across as rapidly as possible.

Other men are called for in the service, such as mechanical draftsmen who have had experience in mechanical engineering, especially college men who have had training in engineering are needed as assistants to marine superintendents and assistant superintending engineers. For these last services mentioned, write Military Information Office, University of California, 114 California Hall, Berkeley.



**"The best advice you ever gave me — I bought a John Deere Tractor Plow —"**

And it has proved to be one of the best bargains I ever made."

That Northern Iowa farmer had expected much and had realized more. He was more than satisfied. He was enthusiastic.

The money-making seed beds and the money-saving operation of a

## JOHN DEERE TRACTOR PLOW

make every owner enthusiastic over his bargain. The owner of a John Deere Tractor Plow gets the benefit of genuine John Deere bottoms—the world's standard bottoms, found only on John Deere plows. These bottoms outwear others and make the best seed beds that a plow can make.

The owner of a John Deere Tractor Plow gets the greatest possible operating economy. The Quick Detachable Shares save valuable time and labor. The powerful power lift raises and lowers the bottoms quickly and accurately. No chains or sprockets about the mechanism to cause trouble. Great beam-throat clearance prevents clogging. Stiff hitch assures perfect control in pulling, turning or

backing. Perfect balance assures light draft and fuel saving.

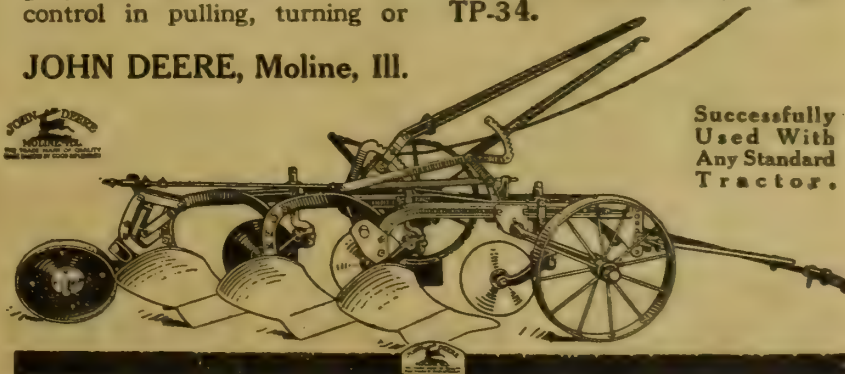
The John Deere No. 5 Tractor Plow is furnished with either 2 or 3 bottoms. The No. 6 is furnished with either 3 or 4 bottoms. Insist on one of these plows for your tractor.

### Get These Free Books

Write today for our free booklet describing both the No. 5 and No. 6 John Deere Tractor Plows. Also our 156-page book "Better Farm Implements and How to Use Them." Full of practical information. Worth dollars.

To get these books, tell us what farm implements you are interested in and ask for package TP-34.

JOHN DEERE, Moline, Ill.



Successfully Used With Any Standard Tractor.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

## "THE BOSS" TREE PROTECTOR

Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

### Prices

	Per 1000
10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

Yucca Manufacturing Co.  
1380 Willow Street, Los Angeles, Cal.

## National Orange Show

CALIFORNIA'S BIGGEST MID-WINTER EVENT!  
At San Bernardino, Feb. 20 to 28  
Gates open at 7:30 P. M. 20th  
A Gorgeous Spectacle Portraying the Splendor and Riches of the Citrus Fruit Industry.  
Million Oranges in a Beautiful Wonderland Garden of Trees and Flowers.  
United States Government's Food Conservation Demonstration.  
Automobile Show.  
Industrial Show.  
Midway of Rollicking Fun  
SEVEN BANDS.  
Lavish Entertainment.  
Excursion Rates on Railroads

TEAGUE QUALITY


## CITRUS TREES

Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

Founded in 1889


R. M. Teague Citrus Nurseries  
SAN DIMAS, CALIFORNIA





PURE BRED

REGIST'D HOLSTEINS



Production

Butter Fat

Everything

Guaranteed

King Korndyke Pontiac

(Shown above)

Son of King of the Pontiacs whose offspring and descendants will furnish the solid foundation of success for generations of Holstein breeders.

Don't forget that King Korndyke Pontiac is the sire of the highest priced bull ever sold on the Pacific Coast, and that his daughters are showing great promise. Wouldn't it be a good business investment for you to get one of his young sons now? The prices are reasonable and if you wish we will give you time to pay.

Below is


Prince Gelsche Walker Korndyke

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R.

C.W. YOUNG SUPT.



# WHAT'S A BRED BERKSHIRE SOW WORTH???

In view of the fact that our Government and our Allies need more pork, And that our Government has set a minimum price of 14½ cents per pound at Coast points, And that California Berkshires were Grand Champions at the National Swine Show, And that the BERKSHIRE BREED was GRAND CHAMPION over all breeds, grades and crosses at the INTERNATIONAL;

*There's Just One Answer*

It's your patriotic duty to raise more pork; It's profitable to raise more pork; The best Berkshire blood in the country is in California; And THE BEST BREED OF HOGS IS THE BERKSHIRE; the first prize heavy carcass dressed 88.77 per cent.

*You Set Your Own Price*

There will be 50 BRED BERKSHIRE SOWS sold to the highest bidder, at Davis, Cal., February 22nd, starting at 10:00 A. M. sharp. There will be a meeting of Berkshire Breeders all day and evening of the 21st, same place, and we are going to GIVE FREE, as prizes, a number of BERKSHIRE BOAR and SOW PIGS, to the best judges among the Farmers and their Wives.

Every sow in the sale is guaranteed to be as represented, and the buyer of any sow sold as being bred and proving to be not with pig, can, if the claim is proven to the secretary within six weeks of sale day, receive a refund of 20 per cent of the purchase price.

Every one is invited to attend both meeting and sale

**WESTERN BERKSHIRE CONGRESS** F. R. Steel, Pres., Grants Pass, Ore.  
Homer Hewins, Jr., Sec., Calistoga, Cal.

## Think Once More!

for the head of our herd is PRINCE ALCARTRA KORNDYKE, son of Tilly Alcartra, 40.78 pounds butter in seven days, and she is the only 40 pound cow in the world that has a yearly record above 1100 pounds butter, two yearly records above 1100 pounds butter, three yearly records above 1042 pounds butter, and she holds all the world's milk records from two to five years, and is the only cow in the world that has produced a total of 123,351.3 pounds milk and 4819.12 pounds butter in her first five lactation periods.

PRINCE ALCARTRA KORNDYKE is sired by Korndyke Queen De Kol's Prince, famous for the high production of his

backed by the greatest combination of short and long time production records yet known

daughters and size and type of both sons and daughters. His 89 A. B. O. daughters include one with 1090 pounds butter in one year, four with records from 30 to 35.42 pounds butter in seven days. PRINCE ALCARTRA KORNDYKE himself is a proven transmitting sire, for his first five two year old daughters to complete yearly test average 15,333 pounds milk and 675.92 pounds butter. You will invest wisely if you place one of his sons at the head of your herd. We have only a few left, out of good record dams, and priced well within their value.

**The J. S. GIBSON CO.**  
Williams, Cal.



Hogs are Money Keep Them Well With

## Economy Powder

Write for Sample and Valuable Stock Book

**Economy Hog & Cattle Powder Co.**

Hearst Bldg.

San Francisco, Cal.



SAVE YOUR HOGS



Miss Big Bone

A Red Cross offering, donated by Mark Bassett. She will be auctioned at the Kings County Poland-China Breeders' Sale.

## Kings County Poland-China Sale

The Kings County Poland-China Breeders' Association will hold its fifth semi-annual sale at Hanford on the county fair grounds, February 20. The animals consigned to the sale will be on the grounds for several days preceding the sale that they may be inspected by intending purchasers.

On the evening preceding the sale, February 19, at seven p. m., will be held a banquet and meeting of the State Poland-China Breeders' Association. W. Bernstein is sending out over his name a cordial invitation to the Poland-China breeders of the state to attend. He writes:

"The purpose of this meeting is the consideration of an extremely important subject, viz: 'Shall the organization lend its support to the movement to have a Roundup Futurity show this coming fall, possibly at

Portland, as that is the last place a show will be held. The following resolution, which has been adopted by the Oregon association will also be discussed: Resolved: That to conserve the nation's food supply we recommend the elimination of all breeding classes of swine over one year of age at all international, national, state and county fairs in the United States during the period of the present year."

One of the most patriotic breeders in California is Mark Bassett, the Kings County Poland-China breeder. He has one son in the service and two ready for such service as the country may ask. In addition we notice that at the coming sale of Kings County Poland-Chinas he offers one of his finest young gilts to be sold, the entire returns to be donated to the Red Cross. See picture of Miss Big Bone with this article.

## Auctioning the Hogs

Kern County Farm Bureau Conducting Series of Successful Sales. Account of Sales Written by J. H. Yetter of the Cultivator Force. Photos by Cultivator Photographer.

**K**ERN County, through its very efficient farm adviser, George C. Kreutzer, has a new version of "This Little Pig Went to Market," that is netting the members of the county farm bureau, who have hogs to sell,

from one-half to one cent, more per pound than they otherwise would receive. The new marketing idea has been thoroughly demonstrated to be sound economically and has proven so successful that inquiry is coming from many sources as to just what the plan



As the Farmers Bring Them In  
Wagon loads of Kern County hogs brought to the farm bureau sale.



Kern County Hog Growers' Sale

These sales are becoming a regular feature with the farm bureau of Kern County and with each sale their popularity increases. A fine bunch of stock is brought together which encourages liberal bidding.



**CUTTER'S  
BLACKLEG PILLS**  
"California's Favorite"  
for nearly 20 years  
For the Prevention of Blackleg  
in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

Prices:  
10 dose pkge. Single pills \$1.00  
50 dose pkge. Single pills 4.00  
10 dose pkge. Double Pills 1.50  
50 dose pkge. Double Pills 6.00  
Cutter's Pill Injector.... 1.50

Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago  
Eastern Agent

**Bernstein's Herd**  
OF  
**Poland Chinas**  
One of the Best in the West  
Size—Quality—Beauty

Are you looking for size?  
Buy Sunshine Maid 592760

The Reserve Grand Champion Sow of California weighing 700 pounds at less than two years old.

Are you looking for Quality?  
Buy Pride of Kings

Are you looking for Beauty?  
Buy Sunny California

Not only these three but our entire consignment will prove that these three things are found in our herd—Size—Quality—Beauty.

We sell 20 head in the Kings County Poland-China Sale, February 20th.

**Bernstein's Ranch**  
Hanford      Calif.

**It is Not an Accident**

when a bull sires a long list of high producing daughters when he himself is the result of many generations of matings of high producers, and such a bull is

**Dutchland Sir Pieterje Creamelle**

whose sire is by Pieterje Hengerveld's Count De Kol and out of the great transmitting cow Changeling. His dam is a daughter of the former world's record cow Creamelle Vale, and is by a grandson of De Kol 2nd, the foundation cow of the De Kol family.

**DUTCHLAND SIR PIETERJE CREAMELLE** now has 14 A. B. O. daughters, all records made in our herd, and he has had only a limited opportunity as our original herd of breeding cows was small. All of his daughters are heavy milkers with a normal high percentage of butter fat. His first daughter to freshen as a three year old made over 80 pounds butter in seven days. If you would breed better type into your herd, coupled with large milk flow and high butter fat test, secure one of the young sons of this sire that we now offer. Priced right.

**F. STENZEL**  
San Lorenzo      California

Fresno County Y. M. C. A. contemplating establishing labor camps in various portions of Fresno County.

is. Through its operation one of the members, H. G. Hull of Wasco, who had 98 head of hogs weighing 21,325 pounds in one sale, received \$16.60 per hundred f. o. b. shipping point for them, when the market in Los Angeles on the same day was 17 cents. This is believed to be the highest price paid direct to the producer anywhere in the state, if not in the United States, for fat hogs, and the selling cost amounted to only one per cent.

"There really isn't anything so very unusual about this plan," said Mr. Kreutzer to a California Cultivator representative. "You see, we figured it out that if we could get all the farmers who had fat hogs to sell at about the same time, to bring them together, and we could get all the buyers there who were making a business of buying hogs here, we could make the hogs up in nice fat, medium and light weight lots, giving the best grading that the hogs collectively would allow, and then having several carloads to bid on would save the buyers considerable time instead of running around over the country buying and making up shipments. Of course it wasn't all as easy as it looked. While this plan seems to be, and is new, yet our first sale was held nearly a year ago with fair success, and with each succeeding sale we have profited by the experiences gained at the former ones. The principal features of our marketing scheme are these:

"First. The farmers are canvassed by inquiry as to whether they have enough hogs to sell to make a sale, if so, a committee of five from the county at large determines the time and location of the sale and makes general arrangements.

"Second. We notify all the packing houses or their representatives in Los Angeles and San Francisco and our local buyers, that we will offer fat hogs for sale giving the time and place and as near the number and quality as possible.

"Third. We study the Eastern and Western markets ourselves, and a buyer representing the farmers joins in the bidding. He is a man selected for his knowledge of the markets and he bids according to what the hogs are worth, just the same as though he were buying them for himself.

"Fourth. One of the members of the county farm bureau acts as the auctioneer at a flat rate previously agreed upon. The farm bureau charges the farmer one per cent for making the sale.

"Fifth. As the hogs are brought in a committee of three in the membership where the sale is held receives the hogs for sale and grades them. This gives opportunity of eliminating any from any bunch that would cut down the value of the good ones. By putting all the good ones together and taking out the odd sizes and mating them up in lots according to how they will sell best we have the best lots that we can make up for the buyers to bid on. The local committee of three acts as judges or umpires or whatever one chooses to call them and their decision is final on the classification and on the sale and final disposition of hogs left in their care for sale.

"The result of this arrangement is that a man can sell his fat hogs at the lowest expense and under the most favorable circumstances. Sometimes it has happened that a man with only a few hogs could not get a buyer or two or three buyers to drive several miles to see them. Under our arrangement a man can put into the sale one hog or several car loads. The hogs are all weighed and designated by lots and the owners paid according to what each lot brought in the bidding. Where they don't quite weigh out after a few hours in the pens, the tare is deducted proportionately and the selling, bookkeeping and paying, all done on a cash basis is handled as smoothly and scientifically as in our country's large stock yards."

"Have you always found a keen demand for hogs?" was asked.

"I will say," said Mr. Kreutzer, "that I believe the representatives of the packing houses and our local buyers have always paid all they could according to the Los Angeles and San Francisco markets. The buyers have been very prompt in responding and ready to bid. They seem to appreciate the fact that this method of buying so many fat hogs together saves them considerable expense in time and traveling through the country."

Continued on Page 219

### Three Important Reasons For Buying a NEW DE LAVAL CREAM SEPARATOR At Once

There are three very strong reasons for the immediate purchase of an up-to-date De Laval Cream Separator.

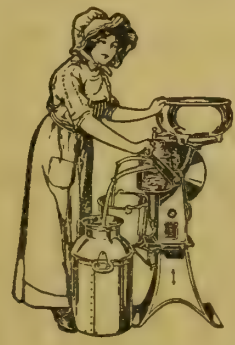
In the first place, a new De Laval machine will now save its cost in a few months—in more and better cream and butter and in time saving—at the present very high butter prices and great need of every minute of time.

In the second place, the patriotic duty rests upon every producer of butter-fat to save every ounce of it, and nothing is of greater food value to a nation at war. All European countries are encouraging the sale of the best cream separators in every way possible.

In the third place, railway delays are such that you can't depend upon quick delivery, and if you don't order your De Laval now there is no telling when you can get it. Moreover, the supply of labor and material is uncertain and all last year De Laval deliveries were nearly two months behind.

Again, De Laval prices have advanced very little thus far but must go higher if present industrial conditions continue, let alone become more difficult. Present prices hold good until March 1st only.

There was never a time when the immediate purchase of a latest improved De Laval Cream Separator was more important to everyone separating cream, or when it could less wisely be delayed.



See the nearest De Laval agent at once. Arrange to try a new De Laval machine for your own satisfaction. See for yourself just what it will do for you. If you don't know the nearest agent simply address the nearest General Office.

**DE LAVAL DAIRY SUPPLY CO.**  
LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

61 Beale St., San Francisco

### Do you want better dairy cows?



You can have them if you will study carefully the bull you select for service in your herd and get one from breeding that has proved to be in the first rank both for production and individuality. You can get such a bull in one of our young sons of

**PRINCE RIVERSIDE WALKER**

Who that has observed carefully the daughters and granddaughters of his sire, Prince Gelsche Walker, has not been impressed with their great capacity, splendid udders, and high dairy quality.

Who that has observed carefully his dam, Aaggie Acme of Riverside, has not been impressed with her almost grand champion bull out of the junior ideal dairy cow conformation? And her sire a champion female at the St. Louis Exposition.

And for the proof of power to transmit production, look at the dam of Prince Gelsche Walker, who is a 30 pound cow out of a 31 pound daughter of a 32 pound cow. And Aaggie Acme of Riverside is by a sire that has three daughters with records above 1000 pounds butter in one year, and she herself is the dam of the world's official yearly butter record cow, Aaggie Acme of Riverside 2nd. Not to overlook the fact that Prince Gelsche Walker is the sire of the heifer that holds the world's records for butter in seven days eight months after calving in both the senior two year old and junior three year old classes.

This is only a very brief sketch of the production, transmitting power, and splendid individuality behind Prince Riverside Walker, and while none of his daughters have yet reached milking age they are of most satisfactory type and promise. One of his young sons would surely work an improvement in your herd, and we can supply you with one at a modest price.

OUR ENTIRE HERD IS TUBERCULIN TESTED

**Tulare Holstein Farm**  
W. J. HIGDON, Owner      Tulare, California



**"The Best Managed Sale I Ever Attended"**

is what a prominent breeder from out of the state remarked after the Guaranty Sale at Sacramento.

We give to every sale, big or small, the same efficient service that won the approval of the breeder above quoted, a service backed by an equipment and organization that has already brought about a new order of things in public sales of registered livestock in California.

If you want to sell your whole herd or consign high class animals to a consignment sale, let us go over the matter with you.

**California Breeders Sales and Pedigree Co.,** J. M. HENDERSON, Jr., Pres., C. L. HUGHES, Sales Mgr.  
211-212 Ochsner Bldg., Sacramento, Cal.



## Get 100% Efficiency From Your Feed

At present prices you cannot afford to waste a pound of feed. But you are wasting it—losing good dollars—if your horses, mules, cattle, sheep and swine are not digesting it perfectly because of poor condition.

Make your live stock get the full benefit of everything they eat by using

### Pratts Animal Regulator

America's original Stock Tonic and Conditioner. It corrects common live stock troubles in a natural way. Sharpens the appetite—assists digestion and assimilation—regulates the bowels—tones up the whole system—makes rich, red blood—assures 100% feed efficiency—prevents loss and swells profits.

Begin using Pratts today. A thorough trial costs you nothing if results are not all we claim.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—“Your money back if YOU are not satisfied”—the guarantee that has stood for nearly 50 years.

Write for 64 page Stock Book—FREE.

PRATT FOOD COMPANY

Makers of Pratts Poultry Regulator and Remedies  
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## Elliott-Brant Rancho Guernseys

We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.

We have calves from A. R. cows with different sized records up to 750 pounds of butter fat. Our prices are reasonable and are based on breeding and records. Write and tell us your needs and we will tell you how we can fill them.

**Elliott-Brant Rancho - Owensmouth, Cal.**

D. O. Brant, Mgr.

## ABORTION IN CATTLE

PREVENTED AND CURED PERMANENTLY

YOUR COWS MADE PROMPT. REGULAR BREEDERS BY

**STERILOID**



### STOP LOSING CALVES

**TREATMENT:** If STERILOID is used at the first sign of

abortion the cow will so her full time and have a healthy calf. If your cows or heifers do not come in season, or fail to get with calf, use STERILOID. Cows get with calf after only one treatment. Write today for FREE BOOK. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with STERILOID. Also contains letters from breeders who have used STERILOID successfully.

**GUARANTEE:** We will refund money in every case when STERILOID FAILS to make good. Price \$1.00. Mail postpaid. In plain wrapper. Dept. L 398-408 Columbus Ave., New York City. Reference, Colonial Bank.

**MARTIN REMEDY CO.**

## BERKSHIRES



Forest Grove Duchess 5th

Booking orders for a few bred sows, in service to Maplewoode Duke and Highwood Standard 91st.

**MAPLEWOODE RANCH**

Calistoga, Cal.

E. M. HOLJE, Owner  
HOMER HEWINS, Jr., Manager



Raising the Standard of California Bacon

### MONTELENA HERD

## Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

**A. L. TUBBS CO.**

Calistoga - California

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

## Range Feed Suggestions

Don't Turn Cattle on the Range and Forget Them. Keep Watch!



LIVESTOCK Specialist Geo. W. Barnes of Arizona makes these practical suggestions:

In order to suggest and work out a satisfactory and practical scheme of range maintenance for Arizona, it would first be advisable to understand the causes which have been instrumental in causing deterioration of the grazing section.

The first and major cause has been over-grazing, and may come under several phases such as keeping too many animals on a given area, having watering places too far apart, keeping the herds or bands too long to a given section, failing to make proper allowance for a poor, dry season on some of the animal ranges.

Due to the fact that no restrictions were placed upon the free range, it was subject to great overcrowding. Many no doubt will say that they can see no apparent result from overstocking. This in a measure may be true, but the effects are certainly accumulative. In many sections settlers have come in, forming part of what once was range, and trails and paths leading to water become more and more traveled. This has had its effect, not only by too close cropping of the grass and browse, but by tramping out the grass, so that the soil will work and oftentimes large arroyos are

formed. When the soil is packed by animals its physical condition is injured and is often so closely tramped that plant growth is prevented. These effects are more noticeable about watering places which are not properly equipped for watering range stock.

Those who have watched the practice not only in Arizona but other range sections have noticed that when overstocking is practiced deterioration is hastened and a selective process goes on, the best plants being eaten closer and are the first to disappear. Plants thus weakened cease to be the main forage, and a less valuable plant, often a poisonous plant, then takes their place and becomes the leading species. This change comes about gradually, and is seldom noticed until a new plant is found oftentimes to be worthless as stock feed. The range man should notice the principal forage plants and grasses upon his ranch upon which cattle feed and watch them to ascertain if they are increasing or diminishing; by this method he would have some check in regards to condition, and could take steps necessary towards range improvement. A careful watch should be made to detect any undesirable or poisonous plant which may be scattered only occasionally over the range and by destroying these plants keep same under control and prevent them from spreading.

## A Leading Young Sire

When we take stock of the Holstein sires in service in California today, a place among the leaders belongs to Dutchland Sir Pietertje Creamelle. This bull was selected by Mr. Stenzel owned by F. Stenzel, San Lorenzo, as a herd sire right close to his beginning as a breeder of registered Holsteins and for the first two or three years he was therefore mated with only a very limited number of registered cows. The result is that his present list of A. R. O. daughters includes all of his registered daughters that have come into milk.

He is a bull of most desirable breeding, his sire being Dutchland Sir Pietertje Hengerveld, whose sire is Pietertje Hengerveld's Count De Kol and whose dam is the great transmitting cow Changeling. His dam is a 23 pound four year old daughter of Pontiac Butter Boy and the former world's record cow Creamelle Vale, 1155.85 pounds butter in one year. It is also worthy of mention in estimating his pedigree, that the mating of his paternal granddam Changeling, with his maternal grandsire Pontiac Butter Boy, produced the great bull Changeling Butter Boy, among whose daughters are Changeling Tidy Abbecker, 44.43 pounds butter in seven days, Changeling Tidy Abbecker Gem, 34.74 pounds butter in seven days, and Previous 2nd Changeling, 33.25 pounds butter in seven days.

But it is the performance of the bull himself that finally counts through his daughters, and it is here that Dutchland Sir Pietertje Creamelle proves his real worth. Bred to only a limited number of cows at first he now has 14 A. R. O. daughters as follows with following records butter in seven days:

Korndyke Ormsby Creamelle, senior three, 30.45; Lady Starin Pontiac Creamelle, junior three, 28.36; Pauline Inka De Kol Creamelle, senior

yearling, 24.43; Marie Clothilde Pontiac Creamelle, junior two, 22.52; Pauline Inka Creamelle, junior two, 21.10; Estudillo Princess Creamelle, senior two, 20.96; Korndyke Pietertje Creamelle, junior two, 19.50; Estudillo Bonnie Creamelle, junior two, 19.06; Jessie Clothilde De Kol Creamelle, junior two, 17.50; Maggie Beets De Kol Creamelle, senior two, 17.10; Kalsora Segis Korndyke Creamelle, senior yearling, 16.70; Witkop Aaggie Pontiac Creamelle, senior two, 16.50; Marie De Witt Creamelle, senior yearling, 15.45; Witkop Aaggie Creamelle Pontiac, junior two, 15.00.

It will be noted that these records were made at very young ages and that the first one to freshen as a three year old made over 30 pounds butter in seven days and the next one over 28 pounds. The daughters of this sire are uniformly good testers with a good flow of milk, a characteristic that is much sought for among present day breeders, and these things taken together seem to mark Dutchland Sir Pietertje Creamelle as one of the best Holstein sires yet developed in California.

### WESTERN BERKSHIRE CONGRESS MEETING AND SALE AT DAVIS

The coming Western Berkshire Congress meeting and sale at Davis, February 21-22, promises to be the most successful of any yet held.

The fact that a California herd brought back grand champion boar and grand champion sow from the National Swine Show proves that the best blood of the breed is in California; and if there was ever any doubt about breed superiority, that doubt was set at rest at the International at Chicago, where the Berkshires, in competition with all breeds grades and crosses, won grand champion barrow, grand champion pen of barrows and grand champion carload



# TAGUS

## Aberdeen Angus

Largest herd west of Rockies. Unlimited demand for our bulls in season.

The ideal breed for baby beef, feedlot, or range.


**(Beef Dept.)**

**Pacific States Corp.**

**Tulare, Cal.**

**H. C. MERRITT, Jr., Manager**

### ROSAMAINES HOLSTEINS



King Pontiac Netherland Segis 3rd CHOICE BREEDING STOCK FOR SALE A. R. O. Records up to 34 lbs. Butter in 7 Days

**ROSAMAINES RANCHO**

**Stalder Bros. RIVERSIDE, CAL.**

### HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

**Frank Reed Sanders, Mesa, Ariz.**

### Holstein Bulls

Well bred, vigorous, registered Holstein bulls of good type for sale. Steady sales have moved all our bulls of service age, but we have a few unusually good calves to offer at moderate prices.

**The McCloud River Lumber Company**

**McCloud, California**

### Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

**513 Hearst Bldg., San Francisco**

**Carruthers Farms, Mayfield, Cal.**

### HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

**Whittier State School**

**WHITTIER, CALIFORNIA**

a record never equaled by any other breed. Also first, second and third in heavy carcass contest, and the first prize carcass dressed 88.77 per cent.

The action of the United States food administration in setting a minimum price of 14½ cents for pork at Pacific coast points has guaranteed the producer against loss, and already its influence can be felt in an increased interest in breeding stock.

It is the patriotic duty of everyone to increase the production of pork to the utmost, and along this line the Western Berkshire Congress is giving away a number of registered boar and sow pigs as prizes in judging contests. Any bona fide farmer, or his wife, who does not raise pure bred hogs for breeding stock, is eligible to compete.

Then there will be an outstanding boar, "Red Cross Rival," by name, sold to the highest bidder, and the proceeds of the sale will go to the chapter of the Red Cross of which the purchaser is a member.

Then last, but by no means least, there will be 50 bred sows sold to the highest bidder. These sows are guaranteed by the Western Berkshire Congress to be as represented. Claims to be filed with secretary not later than six weeks after date of sale.

The best herds on this coast have contributed to this consignment and the richest blood of the breed is represented.

The grand champion boar of Omaha, Baron Duke 201st, will be on exhibition.

Everyone is cordially invited to attend this meeting and sale at the University Farm, Davis, February 21 and 22, 1918. Sale starts at 10 a. m. Friday, the 22nd. — Homer Hewins, Jr., Secretary.

### DRIED DEVIL FISH FOR HEAVES

Mrs. Flora Woodruff of Corcoran writes as to remedy for heaves. She assures us that this remedy was secured from an old Spanish fisherman near Pismo Beach who assured her that dried devil fish was a sure cure for the heaves. She says: "We had a horse which had been affected for sometime with the heaves, which has been entirely cured and is now working and used on the road. It is however necessary to keep some of the devil fish tied on the bit all the time." Mrs. Woodruff suggests we pass this on to other horse owners.

### BREEDS OF DAIRY CATTLE

Farmers Bulletin No. 893 is being mailed by the United States department of agriculture. It has 36 pages and touches upon factors to be considered in the selection of a breed, giving origin and history of Ayrshire, Brown Swiss, Guernsey, Holstein-Friesian and Jersey. The bulletin will be of interest to all dairy men. Copies may be had by writing Division of Publications, United States Department of Agriculture, Washington, D. C.

### JUDGING SHEEP

Bulletin No. 593, United States department of agriculture, primarily intended for the public schools, is of interest to every sheep breeder. This bulletin is ten cents per copy. Write Division of Publications, Government Printing Office, Washington, D. C.

The high price of other meats has increased the consumption of poultry and eggs on farms to the extent that the reduction in poultry receipts this fall has been apparent at nearly all receiving centers.

After the war the world's herds and flocks will be depleted, insuring the American producer high prices for many years to come. Now is the time to prepare.

## BUY A HOG AND HELP WIN THE WAR

### FIFTH SEMI-ANNUAL SALE

OF

### Kings County Poland China Breeders Association

WEDNESDAY, FEBRUARY 20th, 1918, at

**Kings County Fair Grounds, Hanford, Cal.**

### 80 HEAD Registered Poland Chinas

Bred Sows and Gilts to be sold without reserve from the best herds in Kings County. Come and make a bid on the Red Cross Sow donated by Mr. M. Bassett. She is one of his very best Sows.

**CONSIGNORS:**

M. Bassett	Trewhitt Bros.
W. Bernstein	J. M. Bernstein
J. A. Crawshaw	Oscar and Clarence Dimmick
F. D. Ross	

**Auctioneer: Col. Ben A. Rhoades**

For Catalog or Information Write

**F. D. Ross Hanford, Cal.**

## One of California's Best Holstein Herds At Public Auction

We will sell at public auction on Thursday, April 4, 1918, the entire herd of registered Holsteins owned by R. F. Guerin, Visalia, Cal., excepting the heifer calves which Mr. Guerin will keep for his future herd. Positively every female of milking age in the herd will be sold, also a number of heifers bred to freshen for the first time. Everything tuberculin tested and sold subject to tuberculin retest by the buyer.

This will be a rare chance to select and buy from a herd that has always been one of the most profitable in the state.

Catalog in preparation. Write for one.

Sale under management of

### California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., Pres. C. L. Hughes, Sales Manager

**211-212 Ochsner Bldg. Sacramento, Cal.**

Auctioneer: Col. Ben A. Rhoades

### Prize Winning HAMPSHIRE


The farmer who wants a hog that puts on 200 lbs. of firm meat at six and a half months of age buys the Hampshire.



Boars, gilts, bred and open, for sale from the P. P. I. E. Champion Hampshire stock, just as nearly perfect as they make them.

**F. A. Langdon Manager Llano Vista Ranch, Perris, Cal.**

**F. V. Gordon Owner**



### NEVER DRENCH CATTLE!

When your cows have stoppage or paralysis of the bowels use Dr. DAVID ROBERTS' **LAXOTONIC**

Excellent for Constipation in All Live Stock

READ THE "PRACTICAL HOME VETERINARIAN"

Send for free booklet on "Abortion in Cows"

If no dealer in your town, write

**Dr. DAVID ROBERTS VETERINARY CO., Waukesha, Wis.**



### KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets.

Jacks and Jennets for sale at all times. Come and see them.

**John Burrell**

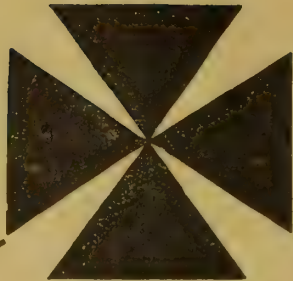
**R. F. D. B. Box 74 Hanford, Kings County, Cal.**

California Wonder



Santa Anita  
Rancho

Anoakia  
Breeding Farm



## REGISTERED HOLSTEINS

No greater conservation of feed, labor, and money can be made by the dairyman of today than by placing at the head of his herd the right kind of a herd sire.

A registered purebred Holstein bull of good breeding will get the kind of heifers that develop into profitable dairy cows, able to convert the feed they consume into profitable milk and butter production. The overhead expense, including labor, of handling a GOOD dairy cow is no greater than for a boarder, and the only way to breed GOOD cows is to use a GOOD purebred registered bull.

Right now we are offering a limited number of GOOD young bulls sired by

### MERCI LAD KORNDYKE BURKE

conceded to be one of the greatest individual Holstein bulls in the west, and as to his breeding—

He is sired by the noted individual and sire De Kol Hengerveld Burke, one of the greatest sons of De Kol 2nd's Butter Boy 3d, and his dam is that wonderful producer Winnie Korndyke Cornucopia De Kol, 31,034.14 pounds milk and 1201.06 pounds butter in one year, the first cow in California to produce over 1200 pounds butter in one year.

MERCI LAD KORNDYKE BURKE is siring a wonderful lot of calves. Come and see his beautiful sons and daughters and we feel sure you will decide to select one of his young sons to head your herd.

Inquiries or orders by mail will receive prompt attention.

SANTA ANITA RANCHO, Santa Anita, Cal.

W. H. Taylor, Supt.

Anita M. Baldwin, Owner

*Come to Stanislaus County for Registered Holsteins*

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

**Registered Holsteins**  
Young sons of Prince Hiske Walker out of A. R. O. dams for sale.  
H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.

**White House Holsteins**  
A well bred proven herd sire for sale, also a few bull calves.  
A. M. Bibens, Rt. 1, Box 307, Modesto, Cal.

### Creamcup Holsteins

Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. W. HOLDRIDGE, Rt. B, Box 366, Modesto, Cal.

**Sylvan Iris Holsteins**  
Headed by a son of Dutchland Sir Pietertje Creamelle. Well bred young bulls and a few registered heifers for sale. E. F. Young, Rt. B, Box 174, Modesto.

**Pelandale Holsteins**  
Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.  
J. A. Pelanda, Rt. B, Modesto, Cal.

**Segis Pontiac De Kol Dutch**  
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

### Registered Holsteins

Herd headed by a 30 pound grandson of Colantha Johanna Lad and a 32 pound grandson of Rag Apple Korndyke. My cows have won butter fat contests wherever entered. Young bulls for sale. Visitors welcome.  
J. W. Benoit, Rt. C, Box 183, Modesto, Cal.

**Thompson's Registered Holsteins**  
Service age grandson Winifred Hotelling 2nd, 33.92 pounds butter in seven days for sale. Also two bull calves, yearly record backing.  
Luther Thompson, Rt. A, Box 351, Modesto, Cal.



**Our Herd Has Been Built Around King Korndyke Hengerveld Ormsby 7th**  
A grandson of Pietertje Maid Ormsby, 35.56 pounds butter seven days, 145.66 pounds 30 days, who is sister to the sire of Duchess Skylark Ormsby, 1506 pounds butter one year, world's record. King Korndyke Hengerveld Ormsby 7th was grand champion at Stanislaus Live Stock Exposition, winning over the bull that defeated the California State Fair grand champion. Young bulls for sale. No females.

Kounias Registered Stock Farm, Modesto, Cal.

## BASSETT'S POLAND-CHINAS

Twenty of our best bred gilts will be consigned to the

KINGS COUNTY SALE  
AT HANFORD  
FEBRUARY 20

They are all bred to our best boars. You can buy them at your own price.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland-Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland-China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

FAIR DEALING, UNIFORM EXCELLENCE, SATISFIED CUSTOMERS, BEST PORK PRODUCERS, RESULT FROM YEARS OF SELECTIVE BREEDING.

M. Bassett

Hanford, Cal.



MAMMOTH HUSTLER

Full sister to Miss Big Bone in the Sale February 20.

### Field Notes From the Live Stock Men

H. B. Peake of San Bernardino writes that he has just shipped a fine young Poland-China boar to Oliver Smith of Blythe.

Kounias Registered Stock Farms, Modesto, is a growing breeding establishment that is going to be heard from regularly from now on. The herd of registered Holsteins has been selected with a great deal of good judgment of type, and the females are largely of one family, thus affording the best sort of foundation for intensifying blood lines. James Sullivan, who made a record for himself while in charge of the Stenzel herd at San Lorenzo, has been secured as herdsman and will have a string of promising heifers to go on test under his care this winter. Of recent records made in this herd, Dominita Colantha De Kol made 25.47 pounds butter in seven days, and Dominita Bonnie De Kol 4th is now making a record around 20 pounds. The three year old Lady Dominita De Kol, now in test, promises to make around 22 pounds. The senior sire at the head of this herd is King Korndyke Hengerveld Ormsby 7th, a splendid grandson of the great Pietertje Maid Ormsby. The junior sire is Toyon King Korndyke Soldene, son of a 33 pound daughter of King Hengerveld Aaggie Payne, and he is developing into a wonderful good individual.

J. W. Benoit, Modesto, has made a well earned success with registered Holsteins, and now has his farm and herd in shape for further progress. Mr. Benoit had a silo this year for the first time and is enthusiastic over the economy of feeding silage, especially during these days of high prices. The cows and heifers also show the effects of succulent feed and are in good condition. This herd shows a remarkably good butter fat test, the milk statements for months showing a uniform test from 4.1 per cent to 4.3 per cent. The senior herd sire is El Prado Wayne Colantha, a 30 pound grandson of the great Colantha Johanna Lad. The junior sire is a grandson of Rag Apple Korndyke, out of the 32 pound cow Jennie Terzool Hicks 4th, who also made upwards of 1000 pounds butter in 305 days and sold at auction for \$2250.

Tagus Ranch, Tulare, now has a herd of registered Holsteins of which any breeder might well feel proud. The dairy department of this great ranch organization is under the direction of Frank E. Gillam. When Mr. Gillam took charge of the herd it must be admitted that the herd was anything but in good flesh and fitness, although it was composed of animals of good type and breeding. Today the herd shows the effect of correct feeding and care and many of the cows are approaching the official test period in first class shape. The heifer herd is remarkably good, in fact the writer doubts if there is a better average lot of equal size to be found in a long journey. Not the least conspicuous among them are three beautiful daughters of King Segis Pontiac Janek, James J. Jeffries' splendid herd sire. The Tagus herd is headed by King Sadie Vale Rose, son of King Korndyke Sadie Vale and out of the 27 pound cow Queen Rose Paul, thus making him full brother to King Korndyke Sadie Vale 27th, one of whose young daughters sold in the Guaranty Sale for \$1400. Mr. Gillam has been weighing and testing the milk of every cow in the herd, and has culled the herd right down to the real producers, and it is upon these that the future Tagus herd will be built.

E. E. Freeman, Modesto, recently sold the first son of his herd sire Segis Pontiac De Kol to head the grade herd of M. Leonardo, who thus introduces great yearly record blood into his herd.

Dairymen often ask us what variety of beets to plant for cow feed, and inquiry among a number of successful beet feeders indicates that Mam-

moth Half Sugar is a popular beet with them.

Madrigal Mookie 2nd, owned by Tulare Holstein Farm, Tulare, recently made an official record of 20.01 pounds butter in seven days as a senior two year old.

Sunnyside Herd of registered Hol-



### When you Figure it all up —

you may find some of your cows are a liability instead of an asset. Why? Almost every cow can be a profitable producer if her system is working properly and she is free from disease.

Kow-Kure, the great cow medicine, is just what the average overworked milch cow needs. It works on the digestive and genital organs and puts the system in condition to prevent disease and produce properly. Also a sure remedy for Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite, Bunches and other common diseases.

Try Kow-Kure on your poor milkers—you'll find it makes good every claim; in many dairies it has turned losses into profits. Feed dealers and druggists sell Kow-Kure; 55c and \$1.10 packages. Write for free treatise, "The Home Cow Doctor."

Dairy Association Co.  
Lyndenville, Vt.



### World's Greatest Dairy Cow, Tilly Alcartra Why?

Because she has proven by every test that she is the most consistent producer ever known.

She has produced more milk and butter fat in her first five lactation periods than any other cow in the world, an average of 24,670 pounds milk and 963.80 pounds butter per year.

She is the only cow of the breed that has produced over 1000 pounds butter for three consecutive years, average 1140 pounds.

She was the first cow in the world to produce 30,000 pounds of milk in a year.

She is the only cow in the world that has produced over 60,000 pounds of milk in two years (60,278 pounds).

She has been awarded more prize money by the Holstein-Friesian Association of America on her production records than any other cow that ever lived.

She is California's first 40 pound cow.

**SHE IS A REGULAR BREEDER.** You can share the benefits of her great production by the use of one of her grandsons, by her son, King Morco Alcartra, whose sire is out of the former world record cow, Riverside Sadie De Kol Burke. They are priced mighty low, quality considered. Write today.

A. W. Morris & Sons Corp.  
Woodland, Cal.

### Duroc-Jersey Hogs

AT

## IRELAND

Ranch at Owensmouth  
City Office: 1219 Brockman Bldg., Los Angeles  
Spring Boars by Orion Cherry King V (Reformer) For Sale



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WHEN this celebrated roofing goes "over the top" of a building, the owner's roofing trouble ceases.

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—protects thousands and thousands of buildings of every shape and character from the ravages of weather.

For 30 years western farmers have depended upon "Pioneer Roofing" and that their confidence has not been misplaced is shown by the ever increasing sales.

There is a grade or weight made to meet the individual requirements of every type of building.

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## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy  
Perkins, Cal.

## THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

**ABSORBINE**



also other Bunches or swellings. No Blisters, no hair gone, and horse kept at work. Economical—only a few drops required at an application. \$2.50 per bottle delivered. Book 3 R free.

W. F. Young, P.O. Box 244 Temple St., Springfield, Mass.

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

steins, owned by R. F. Guerin, Visalia, will be sold down to heifer calves at public auction on Mr. Guerin's farm, Thursday, April 4. The sale will offer 51 head of cows of milking age, and all young except two, 21 head of yearling and two year old heifers, nearly all bred, and about ten good young bulls. For his future herd Mr. Guerin will keep nothing except the young daughters of his richly bred herd sire, Sir Veeman Korndyke Pontiac, the only son of Sir Veeman Hengerveld on the Coast, and he is out of a 30 pound daughter of a 29 pound cow. This sire now has about 30 young daughters in Mr. Guerin's herd, about 55 of the females in the sale are bred to him, and he is to be sold in the sale. The sale will be under management of California Breeders' Sales and Pedigree Company, Sacramento.

Aralia De Kol Pontiac Mead, the new state record senior three year old, has again increased her record and now has 34.16 pounds butter to her credit in seven days and is still on test. She is sired by Segis Pontiac De Kol Burke and is owned by A. W. Morris & Sons Corporation, Woodland.

Newcomers at farm of H. L. and E. H. Murphy are a litter of nine farrowed January 6, by Brighton Faoni Duchess 3rd 244111, sired by Kennett Lee 3rd 155390 of the old line of Murphy prize winners. The granddam of these pigs; Jenette Lee 109443, was shown by Geo. A. Murphy on the Oregon, Washington and California circuit of fairs, and was never defeated. During her life of four years she was made champion at the Alaska-Yukon-Pacific Exposition, and at the Oregon and California state fairs. There is good blood in these youngsters.

The owners of Toyon Farm Association, Los Altos, have an increasing gratification at the calves of FINDERNE Soldene Valdessa their herd sire. Aside from being excellent individuals in the ordinary sense, they are particularly conspicuous for their great depth of body. The latest arrival in the herd is a daughter of this sire out of a granddaughter of Lord Netherland De Kol which weighed over 115 pounds at birth.

Bert M. Carner is one California high school instructor who takes a lively interest in agriculture. He is principal of Gonzales Union High School at Gonzales, California, and the agricultural club of his school numbers upwards of 20 members. At his suggestion the entire club looked over the registered Holstein bulls sold at auction at Gonzales on January 19, and one member of the club, Alfred Clark of Soledad, bought a young bull in the sale the following day.

California Cattlemen's Association announces that a great many inquiries have been received from parties desiring to purchase cattle and from cattlemen desiring to secure pasturage and hay. Pasturage is available for many thousand head in Sonoma and Mendocino Counties. Any information concerning available pasturage throughout the state will be very gratefully received by the Secretary of the California Cattlemen's Association, 320 Sharon Building, San Francisco.

Hollow-Hill Farm on Tuesday of last week sold the last two Guernsey bull calves of service age sired by King of Hollow-Hill 25876; one out of Imp. Brittleware Wild Rose 48508, whose record is 508 pounds of butter fat at 4½ years, went to Middledale Farms, Goshen, Oregon, and the other out of the new class-leader cow, Imp. Brittleware Mistletoe 48510, whose record is 14,467.2 pounds of milk and 751.4 pounds of butter fat at 4½ years, goes to head the herd of C. S. Rassmussen, a prominent Guernsey breeder of Loleta. The amount paid for the latter calf was \$850, which is one of the highest prices ever paid for a yearling Guernsey bull in California.

Guy H. Miller reports: "I have sold two young bulls from Venadera Herd of Jerseys. Have sold to Mr. R. T. Kee of Bodega Wanda's Exile Duke No. 149823. His sire, Belleview's General, combines the blood of the well known Owl and Oxford Lad families. The young bull's dam is Wanda of Venadera, one of our well known show cows. She has been senior champion at the state fair, has won

Continued on Page 218

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Finderne Soldene Valdessa

The dam of FINDERNE SOLDENE VALDESSA is the world's record heifer Finderne Soldene Hengerveld, 35.34 pounds butter in seven days at first calving, and she is by the wonderful sire King Hengerveld Aaggle Fayne who has three junior three year old daughters with records from 31.94 to 37.33 pounds butter in seven days, and four senior three year old daughters with records from 35.33 to 37.13 pounds butter in seven days. One of his daughters holds the world's record in the junior two year old class for yearly production with a record of 1200.64 pounds butter, another holds the world's record in the junior three year old class with a production of 1395.06 pounds butter in one year, and a third daughter made 1075.29 pounds butter in one year as a junior three year old.

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## Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Transplanting

Please give information as to transplanting live oak, white oak, Christmas berry and bay tree. How large may they be when practical work may be accomplished?—Subscriber, Paso Robles.

The best advice is founded on experience, and while I have moved oaks at least 20 years old, here is what is being done at present by the Los Angeles park commission (of which I am a member). We have bought from a dealer at \$5.00 each a number of live oaks from 10 to 15 feet high and from one to three inches in diameter of trunk one foot above the ground. They are balled and sacked and warranted by dealer to grow, any dying within 60 days to be replaced by him without cost to us. The balls are

from 12 to 18 inches in diameter and of like height; none are larger. A few trees four inches in diameter (for special use) were boxed in 24 inch boxes. They have been grown in nursery rows and never moved since planting. I would advise amateurs to dig bigger balls of soil if convenient. The present time or next month is good for such work. The white oak (*Q. lobata*), being deciduous, may be moved without soil and with longer roots, but do not let roots get dry.

Bay trees may be handled in like manner and season with equal success. The Christmas berry is not so easily or safely moved, though same time and methods may be observed. But I would move plenty of soil and prune back top to a good round head, reducing natural top by one-half.—E. B.

### Not Laying Well

I have 200 White Leghorn hens, one year old, with a very good first

year's record. Their moulting time was long, (too long I think this year) and though they look fine now, they are not laying as they should. Can you write me what to do or feed to start them off?—Subscriber San Dimas.

A little additional protein in the ration is often needed to start hens to laying again after the molt. This additional protein may be in the form of buttermilk or skim milk, of green cut bone or of one of the vegetable proteins such as soy bean meal or linseed meal added to the dry mash. A moist mash in which cut-up greens have been mixed with the ground grains of the regular mash, and the whole moistened with milk, is one of the best things for hurrying up slow pullets or laggard molters.—J. A. K.

### Grapefruit and Milk

In the California Cultivator of January 26, 1918, page 106 we find a query with regard to eating grapefruit and drinking milk at the same meal. The question was referred to Prof. M. E. Jaffa who writes as follows; "I regret we have no direct evidence of injurious effects, if any, of the use of grapefruit juice in the diet of a child of five to six years old." We take exception to Prof. Jaffa's reply. Why should he regret having no direct evidence of in-

jurious effects of grapefruit taken by a child? On the other hand we are very glad grapefruit is such fine fruit for children to take at the same time they take mush and milk for breakfast. We grow lots of grapefruit and have some dairies in Imperial Valley and we do not like to have the children encouraged to discontinue the use of both. Have been a subscriber of the California Cultivator for a good many years and have not a grouch on, but we hope the professor's regrets will hereafter be a little more reasonable.—Frank L. Weed, Calexico.

We might refer this to Prof. Jaffa for his own information, but we think we can safely say that our subscriber has entirely misunderstood the professor's remark. The exact quotation of the one sentence is, "I regret we have no direct evidence of injurious effects, if any, of the use of grapefruit juice in the diet of a child of five or six years old." But later in the paragraph he does commend the use of grapefruit for young children. Now the real intention of Professor Jaffa's remark was simply to show that he regretted that he had no definite data at hand. Our expert and professional friends have a weakness for definite and absolute facts and often refer to precedents to prove their point. Professor Jaffa's friendship for food producers of California is too well established to need defense on a charge that he regrets he has no information that will prove injurious to any feature of productive industry, and the greatest favor to any industry is to give the truth regarding it, and if it is unwise to feed very young children on milk and grapefruit at the same moment, it is better to have given the warning, as Professor Jaffa did, than to injure the industry by ill effects from lack of proper feeding. Let us all eat more of grapefruit and in a way which increases its consumption. It is one of the most healthful fruits.

### Inoculation of Alfalfa

Is inoculation of alfalfa as beneficial as some people selling the cultures claim? What condition of soil, if any, makes its use necessary? Could you state the cost per acre, also exactly how it is applied to seed, and any other information you might have?—Subscriber, Winton.

If one is planting a new field of alfalfa where legumes have not been grown, there is no question but that nitrogen gathering bacterial cultures will prove beneficial. These cultures are sometimes secured from the soil of fields where alfalfa has long been established and grown luxuriantly. More often, and we presume it is more satisfactory in general, is the securing of cultures artificially prepared and which are offered by chemists. Full instruction are given with each treatment. The cost is not far from \$1.00 an acre for the material. Then there is slight cost of time in handling it so as to inoculate the seed.

### Poor Breeders

In regard to "Goats Not Breeding" in "Questions and Answers," issue January 26, the following might perhaps be of use to Subscriber, Anaheim:

Some goats do not seem to show when they are in heat. I owned one last year and never saw it in heat, but had it tied near a buck in a pasture and it bred and had three kids. This year a party brought two goats to breed and left them with me. One of them did not breed last year. I observed her very closely. She hardly gave any sign and there was practically no swelling. She got with kid all right. Another is irregular and her offspring were poor breeders. But the owner persevered and finally got them with kid. This difficulty seems



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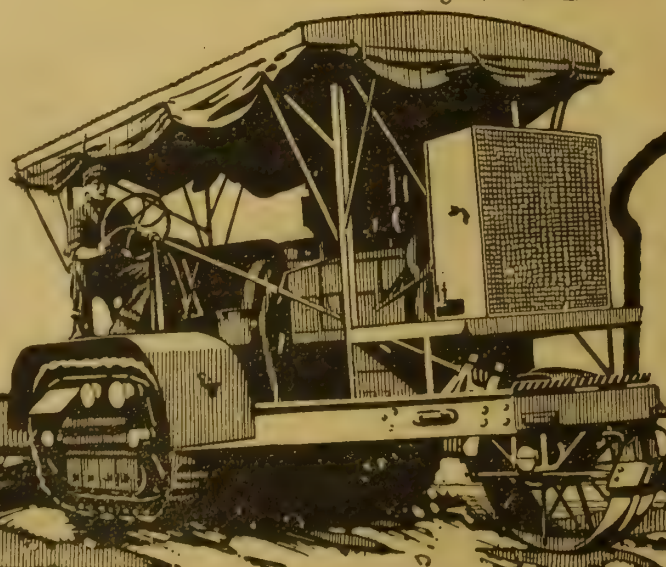
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to affect her kids and their kids. The feed does not seem to have any influence in breeding goats. I don't let my bucks run with the does, but in the Anaheim subscriber's case it might be advisable.—J. G. French.

## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.  
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

### Recording Contract

A man buys a tract of land on a contract of sale. Is it necessary for the contract to be recorded to be of value, California law?—Subscriber.

The contract between the buyer and seller is perfectly good without being recorded, but in order to give any third persons notice of the title of the buyer it is necessary that it be recorded. To record your contract is the only safe way to do.

### Penalty for Starting Fire

A has a summer resort. B has land near by. A, or some of his associates, start a fire which burns over B's range, doing damage. The fire warden notifies B that A was responsible. A denies this, saying that he was not at the resort when the fire started. Can B collect damage from A? — Subscriber, Lemon Cove.

Regardless of whether or no A was present when the fire started, if the person who started the fire was the agent or sub-agent of A, he could be held. If there was no relation of principal and agent between A and the actual person starting the fire it is difficult to see how A could be bound by the unauthorized act of someone with whom he had had no dealings. There are two methods, however, to get at this matter: First, in the political code there is a provision reading as follows: Every person negligently setting fire to his own woods or negligently suffering any fire to extend beyond his own land is liable in treble damages to the party injured; second, in the penal code it provides that every person setting fire, or causing fire to be set to any forest, brush, or inflammable vegetation growing on lands not his own without permission of the owner of such land; allowing fires to escape from the control of persons having charge thereof or to escape to the lands of any person other than the builder of the fire; or burning brush, or grass on his own land without taking every proper precaution before lighting the fire to prevent its escape; or leaving any fire burning or unextinguished on departing from a camp is guilty of a misdemeanor punishable by fine of not less than \$50 nor more than \$500 or imprisonment in the county jail for not less than 11 days nor more than six months, or both such fine and imprisonment.

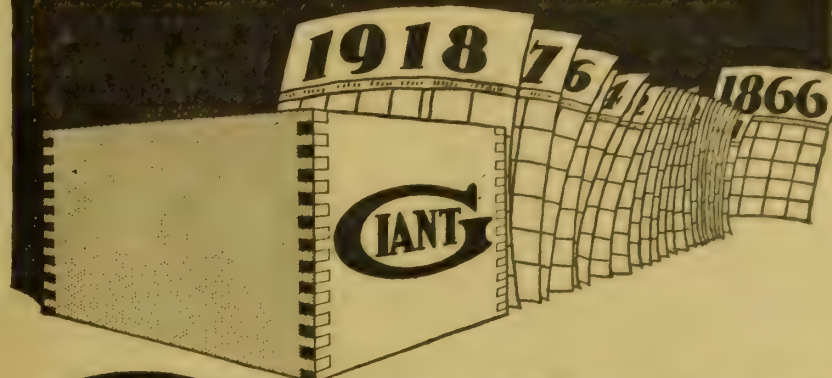
### Property Rights of Wife

What rights has a wife in property accumulated during marriage through the joint efforts of husband and wife?—Subscriber.

The husband has the management and control of the community property, both real and personal. Of the personal property he has absolute power of disposition, other than testamentary, provided that he cannot make a gift of the personal property, nor can he sell, convey, or encumber the furniture or fittings of the home, or wearing apparel of the wife or minor children without the written consent of the wife. As to the real prop-

Continued on Page 215

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**For Sale**—Pure Strains baby chicks from selected flocks, White Leghorns, R. I. Reds and Barred Rocks; hatches every week, order filled in rotation and shipped anywhere. Also Buckeye and Jubilee Incubators and Brooders. Stiles Poultry Supply Co., 645 G Street, San Diego.

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### POULTRY

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**Ceres Jubilee Hatchery** is now booking orders for S. C. White Leghorn Chicks, also a few choice cocks and cockerels for sale. All eggs used are from our own stock. Send for price list. H. L. Brown, Ceres, Motor Route A, Box 22.

**East Side Poultry Yards** will hatch little White Leghorns from two and three year old stock. Quality and price will suit. The party that rears chicks this year is wise. E. J. Look, 255 S. 18th St., San Jose, Cal.

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**Duroc-Jerseys**—Sold out of bred gilts. Two service boars. One of them an outstanding individual for sale. Also Fall Pigs, both sexes. Twenty-three ribbons on 11 entries, including 6 champion-hips, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

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**PLW Durocs**—Golden Models and Great Wonders are the most consistent winners at every show. Peters, Lamson & Walker, Devore, San Bernardino County, Cal.

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Large turkeys can be raised at practically the same cost as small ones. My toms will give you an increased weight of five pounds the first year. Either stock or eggs will give you vitality, size and beauty. Address all communications to J. Will Blackman, 607 East Third St., Los Angeles, Cal.

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**Wanted**—To hear from owner of farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

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**Several New and Slightly Used Engines.** ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.



## BEES PAY

Bee-keepers can obtain from the Apiary Department of the Diamond Match Company the finest quality of Bee-keepers Supplies at fair prices.

The Apiary Department, which is in charge of experienced Bee-keepers, is one of the largest of its kind in the United States and maintains a constant excellence of product and unsurpassed service.

Write for Catalogue and if a Beginner for Cottage Bee-keeping, which will be promptly mailed free.

**THE DIAMOND MATCH CO.**  
APIARY DEPARTMENT  
CHICO, CALIFORNIA, U. S. A.

## LEGAL

Continued from Page 213

erty the wife must join with the husband in the execution of any instrument by which said real property or any interest therein, is leased for a longer period than one year, or is sold, conveyed, or encumbered; upon the death of the husband, one half of the community property becomes the property of the wife, as to which the husband has absolutely no power of disposition by will.

## Filing on Water

How can I file a claim on a stream of water? Can I procure blanks to be filled out and filed with the proper authorities, and who are the proper authorities?—Subscriber.

A person desiring to appropriate water must post a notice in writing in a conspicuous place at the point of intended diversion, stating therein that he claims the water there flowing to the extent of (giving the number) of inches, measured under a four inch pressure; the purposes for which he claims it, and the place of intended use; the means by which he intends to divert it, and the size of the flume, ditch, pipe, or aqueduct in which he intends to divert it. A copy of this notice must within ten days after it is posted be recorded in the recorder's office of the county within which it is posted. Within 60 days after the notice is posted the claimant must commence the work of diversion and prosecute it diligently to completion. A notice which states the foregoing matters is sufficient even though untechnically worded. Blanks may possibly be obtained at a stationery store. If a stream of water has been used for cattle and domestic purposes for 12 years, has the user acquired a right to the water even though he has taken no legal action? An actual appropriation of the waters of a stream is effective, to confer a prior right as against any person who did not have at the time of the diversion, a superior right. This is true even though there is no compliance nor attempt to comply with the provisions of the code as to notice of the appropriation and such actual appropriation will be good as against any subsequent appropriation for the purposes for which the water has been actually placed to a beneficial use and for those purposes only.

## BEAN GROWERS ORGANIZE

Bean growers producing about 300,000 sacks of beans have organized. Incorporation papers for a non-profit sharing organization have been filed, and it is expected that 90 per cent of the beans grown in the state—excepting Limas—will be marketed through this organization. This will mean nearly 3,000,000 sacks under one management.

The name chosen is California Bean Growers' Association and directors for the year are: George A. Turner, J. M. Bigger and Edward F. Harris of Stockton; Fred W. Kiesel, J. H. Glide, George F. Maddock, Emery Oliver, Lincoln White, A. T. Spencer and Charles F. Meister of Sacramento; Cline Bull and T. W. White of Marysville; Peter Cook, of Rio Vista and J. B. Mendenhall, I. L. Borden, F. L. Hoag and William K. Brown, of San Francisco.

**RHUBARB**  
PLANT YOUR LAND NOW TO WINTER RHUBARB  
You should get big crop by next fall. Others making \$1000 per acre, so can you with WAGNER'S GIANT—plant me other. Get your plants from originator and avoid disappointment. J. B. WAGNER, Rhubarb and Berry Specialist, PASADENA, CAL.



## Chicks by the Thousand

Written for California Cultivator By Jean A. Koethen

**H**OW to get the greatest number of eggs has been the problem of hatcheries from the mud ovens of ancient Egypt down to our own scientifically planned incubator cellars. If the Egyptian hatchery man could keep one egg out of four as pay for hatching and still give the owner of the eggs a profitable deal, our incubator experts of the twentieth century should do better, and they do. At a little hatchery which I visited last week in the environs of Van Nuys the output was running 80 per cent right along. The man who runs the incubators showed me the figures on slips of paper tacked on the front of each machine: "360 eggs; 32 clear, 14 dead germs. 500 eggs; 22 clear, 19 dead germs. 500 eggs; 25 clear, 14 dead germs. 500 eggs; 11 clear, 7 dead germs," and so on. These figures do not include the chicks which fail to get out of the shell, of which there are always a few. Such chicks are never helped out. If they cannot get themselves out they are killed, for they are more profitable dead than alive.

The Holly Poultry Ranch, as one may see by the neat sign over the front gate, was not started originally

as a hatchery, but its owner, B. R. Holloway, found after a number of years as a successful general poultryman that hatching was a specialty he could carry to such advantage that he has gradually increased the size of his hatchery and cut down the other end of the business. A limited number of hens are kept, about 1000 hens and 1000 pullets. The hens are mated to Barron cockerels, one cockerel to 15 hens, so that there may always be fertile eggs ready for the incubators. In addition to the eggs laid by the hens on the ranch many thousands are bought each week from the poultrymen of the Van Nuys district, a weekly trip being made to collect them, so that all may be absolutely fresh.

The capacity of the Holly hatchery is 60,000 eggs. On the first of February it was running at a little less than capacity, about two-thirds of the incubators being full, and a hatch of 4200 chicks had been taken off the previous week. From now on the incubators will run at full capacity.

The hatchery is a long building built of brick. A row of windows on each side near the ceiling provides abundant ventilation without drafts, and there are several doors which can be opened or closed according to the

weather. On cold nights all the doors and most of the windows are closed. This keeps the temperature from dropping as it would in a less carefully arranged building. On warm days every door and window is opened wide to keep the temperature down to 70 degrees, a temperature which is maintained day and night, with little variation during the entire season.

"Three things are absolutely essential to a good hatch," said Mr. West, the incubator operator. "The eggs must be fresh, that is, not over a week old, and they must come from vigorous, mature, breeding stock. If our eggs did not contain vigorous germs to begin with we could not turn out such a large per cent of vigorous chicks. Then we are extremely careful to follow the directions of the incubator manufacturers exactly. Lamps are cleaned every day and eggs turned twice daily. To save time in turning so many eggs we use, till the last two days of the hatch, a self-turning tray devised by Mr. Holloway, which turns the eggs with a single jerk. When the incubators are closed on the nineteenth day the eggs are placed on the regular trays with nursery tray underneath."

Hot water incubators of 500-egg capacity are used. The heat is kept at 102 degrees the first week and 103 degrees the rest of the time. At hatching time the greatest care is used to keep the heat close to 103 degrees. If

it goes much higher than this there will be cripples. In order that there may be plenty of moisture while the hatch is coming off the cement floor is sprinkled at frequent intervals, so that it is never quite dry.

The breeding stock is kept in two long houses, each 120 by 16, and divided into eight sections holding about 125 hens. Every section has its automatic fountain, protected by slats, so that no filth can reach the water, its mash hopper and electric light, for the hens must get to work at 4:30 a. m., and its broody coop. A thick layer of straw covers the floors, but shavings, which are less hospitable to mites, are used for nest litter. Three times a week the droppings boards are cleaned, and when they have been thoroughly scraped they are sprayed with a solution of cresol, one part cresol to 50 parts water. Such persistent cleanliness is bound to have its reward, and the reward in this case is a flock of as vigorous, prolific White Leghorns as can be found in California.

The ration of the breeders is simple. They have the P. C. A. mash, which all Van Nuys poultrymen use, always before them, and are given a scratch feed consisting of 45 per cent kafir corn, 45 per cent barley, and ten per cent split beans. The beans are not fed because Mr. Holloway considers them better than other grains, but because he happens to have them. The green feed is cup up barley.

Chicks from the Holly Hatchery are not sent through the mail. Such a trip is too hazardous. They are delivered by the hatchery's own truck to poultry ranches within 40 miles of Van Nuys, and are not left till they are safely installed in the brooder or brooder house. The boxes in which they are packed for delivery hold 100 chicks each, and each box is divided into four compartments. Twenty-five chicks in one of these straw-padded compartments can travel in great comfort, with practically no danger of crushing. The boxes are of three grades, which Mr. Holloway calls "first air," "second air" and "third air." This simply means that one box has large round air holes, the second smaller air holes, and the third quite small ones. The kind of box used is determined by the weather. If the day is very cold the box with the smallest air holes is used and covered besides, for there must be no chilling on the journey. It is by such care of every detail that Mr. Holloway has built up his business.

### A DOZEN GOOD TIPS TO POULTRYMEN

Do not keep mongrel stock. They are not high producers, and their eggs are not uniform as to size and color.

Keep laying hens separated from setting hens.

Gather eggs carefully twice daily.

Insist that your buyer candle and grade your eggs and that he pay a premium for "firsts" over "seconds." You cannot afford to produce the best and take a flat "case-count" price along with the producers of small, dirty, stale, inferior eggs.

The sale of infertile incubator eggs will never help you to establish a higher market price for your product.

Separate the male birds from the flock except during the breeding season. Fertile eggs are poor keepers.

Keep nests free from filth and provide plenty of them. It is the foul, dirty, unattractive nest that compels the hen to seek the weeds or some other undesirable place.

Market eggs in a standard egg case.



## You Feed The World

And to deliver on this big contract you need the car more than ever.

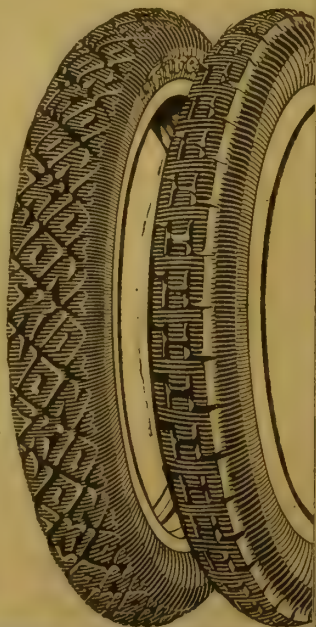
**A**ND it is important that the car be equipped with the tires that keep it going steadily, the year through at lowest upkeep cost. With Firestone equipment it is practically certain that your car will carry you wherever the work calls. They will get you there in comfort and on time, regardless of road and weather.

**FUEL-SAVING WITH FIRESTONE CORD TIRES.** The added size, with extreme flexibility of Firestone Cord Tires, means remarkable economy of fuel. There is easier, quicker response, an activity that supplements the motor power and gives the long coast with engine idle. This flexibility means, also, shocks absorbed, stone bruise and other injury avoided, longer tire life and they give road grip that means safe and confident travel.

**FURTHER IMPROVED FIRESTONE FABRIC TIRES.** Your car should have the benefit of the Firestone mileage features, the tougher, thicker tread, the added cushion stock and rubber between fabric layers. All these advantages increase resiliency and strength, giving you greatest comfort and longest wear. While doing your best in every hour of a long working day see that you have the most helpful facilities possible. In tires that means Firestone. Ask your dealer.

FIRESTONE TIRE & RUBBER CO., Akron, O., Branches and Dealers Everywhere

# Firestone Tires





### BUTTERMILK ADDED

THE U. S. GOVERNMENT AGRICULTURAL EXPERTS have proven that buttermilk prevents and cures White Diarrhoea and is of great importance in poultry feeding.

Send to U. S. Agricultural Dept. Station, Berkeley, Cal., for Bulletin 162 (free) explaining the value of buttermilk to poultry.

Globe A-1 Buttermilk Mash is a food poultry like and eat in preference to grain.

Costs no more than ordinary mash, but it's worth more because of the DRY BUTTERMILK added.

Sample and valuable feeding information free.

GLOBE MILLS, Los Angeles

### BUTTER GLOBE MILK DRY A-1 MASH

## Incubator Sale



While  
They  
Last

We offer the  
Best 125-egg  
Hot Air  
Incubator Made  
for \$7.00 f. o. b.  
Los Angeles

We have a limited stock of this wonderful hatcher and need the room for other goods, so order now before stock is exhausted.

**Aggeler & Musser Seed Co.**  
115 N. Main St., Los Angeles, Cal.

### Petaluma Incubators and Brooders

Electric, Hot Air and Hot Water. They are all good but the Electric is a World Beater, being a marvel of accuracy by self regulation. Can be attached to any electric wire of the ordinary voltage for house lighting purposes. Write for Catalogue.

### Harris Seed Co.

909 Sixth St. San Diego, Cal.

### Chickens

Will be hatched and raised properly to develop into strong vigorous birds making large profits if you use the famous

### PETALUMA INCUBATORS AND BROODERS

MADE BY THE PETALUMA INCUBATOR CO. PETALUMA, CAL.

CATALOG FREE

### Try the Coulson System of Feeding

Our free book "Chickens from shell to market" gives full particulars

Coulson Co. Petaluma Cal.

### WILL SAVE YOUR CHICKS

Any reader of this paper who will write P. J. Kelly, the Poultryman, at 53 N. 2nd Street, Minneapolis Minn., will receive a Free Copy of his new booklet "White Diarrhoea in Baby Chicks." It tells how to prevent, remedy and save the whole hatch. It's free and this paper urges you to write for it at once.

### Lower Prices

on Galvanized Surface Irrigation Pipe, Well Casing and other supplies. Write now for New Price List.

American Steel Pipe & Tank Co.  
354-56 Pacific Electric Bldg.,  
Los Angeles, Cal.

### AMERICAN SURFACE PIPE

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

Never haul to town over rough roads or in an open basket or pan exposed to the hot sun.

You will have the largest number of "firsts" if you market at least twice a week.

In keeping eggs, provide a dry, cool, well-ventilated place. Fertile eggs must be kept below 68 degrees to absolutely check germination.

Never wash eggs, it destroys their keeping qualities.

Eggs are easily affected by bad odors. Do not keep in a musty grain bin, or in the vegetable cellar, or where they can absorb the odors of kerosene and gasoline.—C. S. Anderson, Colorado Agricultural College, Fort Collins, Colo.

### CONTROL LICE AND MITES

There is nothing that is more detrimental to the health and growth of young chicks than to let parasites gain a foothold in your flock. If you notice them becoming listless, their combs and wattles becoming pale in color and the young birds losing in weight, we advise making an examination of such birds and also of your houses and coops to see if you can discover evidences of either lice or mites. Chicken mites are one of the worst pests found in the poultry yard. The growth of the young chickens depends upon the digestion and assimilation of nourishing food. The blood carries this nourishment to the various portions of the body, and, as long as mites live upon the body of the chick and remove the blood as fast as it is made, there is little chance of growth. There is great danger of mites, especially in the warmer sections of the country. All coops and perches should be regularly examined and brushed with a solution of three to five parts of kerosene mixed with one part of crude carbolic acid or with some of the reliable commercial products which you see advertised.

### WATER IS CHEAP AND IMPORTANT

By T. E. Quisenberry

Neglecting the drinking pan, especially during warm weather, and allowing the chicks to go without water, sour milk or buttermilk during the dry hot days of summer will cause greater injury to the young stock than the lack of sufficient food. Also the use of stale, dirty and stagnant water will often lead to a complication of chick diseases and digestive disorders. Water is very cheap in price and it is pure neglect on the part of the poultry man to allow his chickens to suffer for water. A man who neglects to keep fresh water before his chickens at all times does not deserve to succeed. Moisture is an absolute necessity in the life of the young chick for the following reasons: (1) To soften the food in the crop; (2) to dilute concentrated food; (3) to regulate the temperature of the body; (4) to aid in the digestion and assimilation of the food; (5) to carry nourishment throughout the body; and (6) to carry waste out of the system.

The manures most suitable for asparagus are those strong in nitrogen. Horse, sheep and hen manure are excellent. Nitrate of soda gives good results. Potash is another important element. A good source of it is wood ashes but commercial forms are also good. A good plan is to apply the barnyard manures as a mulch in the winter. In the spring the coarse remains may be worked into the soil, but it is better to rake off the refuse and apply some finely rotted manure.

# HATCH THEM ALL!

A good strong chick from every hatchable egg is what you should demand of your incubator. That's what you are entitled to and that's what you get when you use a Buckeye.

It is built up to a standard—not down to a price. Twenty-five years of development have established the Buckeye as correct in principle and exact in operation. There is no guess work or gambling with valuable eggs and more valuable time. Every machine is sold under this sweeping Guaranty:

The BUCKEYE is guaranteed to hatch more chicks and stronger chicks than any other incubator; to operate satisfactorily in any temperature down to freezing; to require no artificial moisture and no attention to the regulator from the time the hatch is started until it is finished.

Perfect mechanical construction is also guaranteed. Any Buckeye or part thereof that does not fulfill our guaranty will be replaced any time within 40 days.

Used by more than half a million breeders, big and little, it gives universal satisfaction. Our guaranty goes with the first hatch. Beginners with the Buckeye stay in the business because it pays. They grow big by adding more Buckeyes. That is the greatest cause of our tremendous growth of sales.

## Stop Your Brooder Losses

Raise all those good chicks. You needn't lose one if you employ the brooder that is scientifically designed and built to do the work. The Standard Colony Brooder has no rival. It stands alone. Makes three chicks grow where one grew before. Cuts installation and operating cost to less than half—labor to less than a fourth. Burns hard or soft coal. Fire lasts twenty-four hours from one filling. Completely self-regulating.

There is nothing to it but a smooth cast iron stove, a galvanized steel hover and the regulating apparatus. Easy to clean and keep sanitary. No wooden walls or curtains to harbor vermin and dirt. No corners where chicks can be crushed.

## Write Your Own Guarantee

Write down what you want a brooder to do for you. We'll sign it, and will send your money back without argument if your Standard does not fulfill your guaranty.

Buckeye Incubators and Standard Colony Brooders are endorsed by all Agricultural Colleges and Experiment Stations. Sold by over 6000 dealers. Your dealer will be glad to show them in operation.

Write for Buckeye catalog. It contains the most wonderful testimonials of success in poultry raising you ever read, from Buckeye and Standard users.

### The Buckeye Incubator Company

426 Euclid Ave. Springfield, Ohio

Pacific Coast Branch: Box 426 Oakland, Cal.

Los Angeles Agents  
FOR

## Buckeye Incubators and Brooders

Germain Seed & Plant Co.

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# P I P E

For Every Purpose NEW  
Threads and Couplings Hot Asphaltum Dipped

2nd Hand and NEW

Screw Casing Fittings and Valves  
Guaranteed for Pressure

TESTED and GUARANTEED

## Pacific Pipe Co.

Main and Howard Sts. San Francisco

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.



## FIELD NOTES

Continued on Page 211

the five day butter fat contest there and other prizes. She is one of the 14 Register of Merit daughters of Marigold's Exile King and has a yearly test of 531 pounds of butter fat, 624 pounds of butter. Wanda has three daughters in the Register of Merit with yearly records. Have sold to Mr. James Bioggi of Manchester Gazette's Exile General, No. 149824, sired by Bellevue's General, dam Gazelle of Venadera. Gazelle is also one of the Register of Merit daughters of Marigold's Exile King. She has a test of 403 pounds of butter, 342 pounds of butter fat, made as a two year old with first calf. She is on test again as a five year old, making a good record. Gazelle, like Wanda, is one of the Nettie Underwood family, both being granddaughters of that great old cow, the fountain head of Venadera's leading family.

Bridgford Company, Knightsen, are making more good records with their registered Holsteins as the test season advances, and some of the best prospects yet to freshen. In recent tests in the herd the leader is Countess Katie Hengerveld, a most attractive heifer that made 31.15 pounds butter and over 600 pounds milk in seven days as a senior four year old. She is a daughter of Judge Hengerveld De Kol and out of a 26.60 pound four year old daughter of Johanna De Kol 2nd Lad. The next highest record is being made by Adirondac Wietske Dairy

Maid, just past five years old, who now has over 30 pounds butter to her credit in seven days and is milking at present over 90 pounds per day. She also is a very pleasing individual, and her great capacity connected with the nice increases she has made each time over previous records stamps her as a cow from which still greater things may be expected. She is the dam of Sir Johanna De Kol Rag Apple, the young bull that H. E. Cornwell of Modesto bought in the Second Sacramento Sale last spring. Empress Korndyke Pontiac, the junior two year old whose record was mentioned in a former issue, has increased her seven day butter record to 23.15 pounds and has over 96 pounds to her credit in 30 days. She is a daughter of Spring Farm King Pontiac and out of a daughter of Korndyke Butter Boy and a 28.17 pound three year old daughter of King Segis Pontiac. Nattaline Walker, another heifer that freshened at two years 16 days, made 21.02 pounds butter in seven days and will have about 86.50 in 30 days. She is the daughter of King Walker 5th mentioned in a previous issue. Tidy Abbekerk Korndyke, fresh at two years two months, now has over 18 pounds butter to her credit in seven days and is still gaining. She started off under handicap but is increasing and is a most promising looking heifer. She is sired by Sir Rag Apple Korndyke and is out of Tidy Abbekerk Princess Aline, 26.16 pounds butter in seven days and she is the dam of Changeling Tidy Abbekerk Wayne, 44.29 pounds

butter in seven days out of three-quarters, a world's record.

## NOTES AFIELD FROM BRIGGS

At the Glenn County farm of Chas. L. Leonard the combined herds of S. F. Williams and Mr. Leonard are being managed by these veteran Jersey

crease in wheat, holds its own against its great 1917 record in barley, an increase of 25,000 acres in rice, a ten per cent increase in grain sorghums and a big acreage going into honey sorghum for silo work. Sixty-five silos were built in 1917 and at least 50 more will be built this year according to the present outlook.



Anselmo of Sleepy Hollow

Official record of 32.70 pounds butter in seven days. Highest record daughter of Anselmo. Property of M. Holdridge, Modesto.

breeders, and good yearly records are looked for from the 12 selected cows now on test.

Glenn County has a 5000 acre in-

The annual meeting of the Orland Jersey Cattle Club for election of officers and review of the year's work will be held about March 20. The exact date will be announced later. Several Jersey men from a distance will be present and a banquet will be served.

J. J. Flaherty of the First National Bank of Orland who has done so much to make the Orland district a Jersey center, states that he has received calls for good registered young stock from San Jose and other parts of the state.

E. J. Falk, manager of the Glenn County fair at Orland has set the fair dates for September 16 to September 21. Preparations are now under way to make it a bigger and a better fair than ever. Last year's profits and further appropriations are being used to erect new stock yards and corrals, poultry building and hog quarters. General exhibit will be housed in three large tents.

The A. J. Morey Jersey herd at Orland has a number of heifers coming fresh this year. He and his working partner, Mrs. Morey, plan to build a 100 ton silo and will then test all their milkers.

W. G. Garnett of Orland will build a 100 ton silo this season to care for the needs of his growing Jersey herd. Mr. Garnett says his luck has changed: for a time his cows all had bull calves but of late heifers are the rule.

A Jersey cow in the Orland district, King's Lass of Sunny Bank 238253, owned by W. G. Garnett, has just made a year's record of 521.60 pounds butter fat, dropping a heifer calf 59 days after completion of test. Her previous yearly test that placed her in the Register of Merit was completed on September 15, 1914, making a record of 463 pounds and 12.1 ounces of butter fat with an average per cent of fat of 6.135. She was born August 10, 1909. Her sire was King's Valet and her dam is N. H. Locke's great cow, Empress Lass.

River Garden Farms of Knights Landing, are putting out 250 acres Bartlett pears and about 400 acres of French prunes.

Elmer Armfield of Woodland is planting 450 acres to orchard, 200 acres almonds, 70 acres olives, the balance to Black Mission and Smyrna figs.

About 95 per cent of Yolo County's raisin growers have joined the Association on the new six year contracts.

About 175,000 acres of grain, including rice, will be grown in Yolo County this year. Its present condition is about 80 per cent of normal. Rains within a month will give a normal crop.

Horticultural Commissioner Gould of Yolo County declared war and started a squirrel drive in every sector of his district February 10. He hopes to make a 100 per cent clean up. Gould plans to use all up-to-date

## Silent, Steady, Sure In Its Work



**Lalley-Light  
Brings New Cheer  
to the old Home**

**L**ALLEY-LIGHT, in operation, is practically as silent as light itself. With it in the basement, you can barely hear, on the first floor, the low hum of its running.

It is quiet because its engine is designed and built expressly to run a direct-connected electric generator. That means, in addition, increased economy and efficiency.

Because it has big ball bearings to prevent wear—and noise—at every point where split babbitt or roller bearings are ordinarily used.

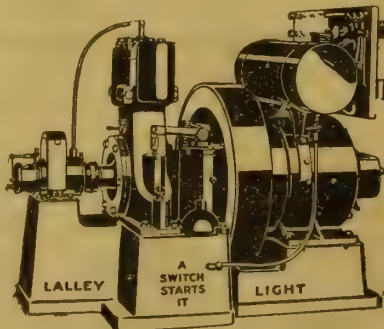
Because it has but three moving parts—no valves, no springs, no cams, to clatter and chatter.

Because the engine's patented construction permits it to run as smoothly and steadily as a perfectly governed steam engine.

Lalley-Light—with a record of seven successful years—brings electric light and power to the farm, and with them every convenience and comfort and cheer which electricity has conferred on mankind.

It gives you safe light—and eliminates fire risk in that direction. It is so simple that a woman, a boy, or even a girl, can run and care for it as well as a man.

It is practically two plants at the cost of one—for either the generator or the battery supplies current, independently of the other.



Generating Plant is 27 inches long, 14 inches wide, 21 inches high. Storage battery is included in complete outfit.

Lalley-Light is a complete plant—direct-connected engine and generator, and storage battery. No extras to buy, aside from the wiring, fixtures and bulbs you must supply for any plant.

Consider the comfort of Lalley-Light on the farm. Unlimited light always and instantly at your command, in house and barn; power for pump, churn, separator, and so on. Greater convenience and labor-saving than you have ever had—all for a few cents' worth of gasoline per day.

Do not put this paper aside until you send us a postal card with your name and address. In return, we will send you, free, our book completely describing and illustrating Lalley-Light; and tell you what the plant complete will cost delivered at home.

We will also tell you the nearest place where you can see Lalley-Light in actual operation. Be sure to write today.

Lalley Electro-Lighting Corporation  
1858 Mt. Elliott Ave., Detroit, Mich.

# LALLEY-LIGHT

ELECTRIC LIGHT AND POWER FOR EVERY FARM



German devices against the enemy from poison to gas.

Horticultural Commissioner Gould of Yolo County and his corps of assistants have inspected about 500,000 trees for this spring's planting. About 400,000 of these trees were grown in the county. They are of fine quality, the county being free of peach borer and other insects.

#### AUCTIONING THE HOGS

Continued from Page 207

"Sometimes the hogs are knocked down to the farmers' own buyer and in that event the farmers through the farm bureau own the hogs collectively. There is usually room for only a slight difference, which is usually adjusted on a give and take basis, making things satisfactory all around. Where the bureau has its own auctioneer and pays its own bills there is a minimum of expense connected with the selling."

Asked about cars Mr. Kreutzer told of one serious but amusing incident occurring after a recent sale:

"We had arranged everything we thought and had cars promised three days before the sale which was very successful. Evening came with the yards full of hungry, squealing, disgruntled hogs and no cars. The farm bureau got busy with telegrams and I think everybody but Herbert Hoover and President Wilson who had anything to do with transportation got telegrams from us as long as the recent declaration of war. It took \$52 worth of rolled barley at a meal to feed those hogs and we fed them four times before we got our cars and we were doing business on a one per cent margin. The hogs ate all the barley and considerable of a hole in our reserve fund but we are still doing business. The farm bureau always has more hogs at each sale than are expected. There will be several more sales in the county in the near future due notice of which will be given."

#### BIG TRACTOR DEMONSTRATION AT UNIVERSITY FARM

On April 17, 18 and 19 a tractor demonstration, that promises to draw visitors from every part of the Pacific Coast, will be held at Davis, on the University Farm. The demonstration will be under the auspices of the California Tractor and Implement Association, an organization composed of the manufacturers, and California representatives of manufacturers, of tractors and tractor implements. The association was formed for the chief purpose of securing cooperation in the conduct of a demonstration that would be educational in its nature and that would really show the visitor what the tractor is capable of doing and



#### Cuts Work in Half

KEEP you stalls and your cows clean with half the labor—save time and feed, have healthier cows and more milk if you have your barn equipped with

**James Sanitary Barn Equipment**

STEEL STALLS

STEEL STANCHIONS

JAMES LITTER CARRIERS

Can be installed in almost any barn old or new.

DRINKING CUPS.

FEED TRUCKS. MILK STOOLS. BULL STAFFS. FLOOR SCRAPERS.

HOG PEN EQUIPMENT.

All illustrated in our big 217-page Barn Book "The James Way," full of good suggestions and barn plans. Sent Free on request.

**DE LAVAL DAIRY SUPPLY CO.**

61 Beale St., San Francisco, Cal.

what equipment is offered for various kinds of work.

The days chosen for the holding of the demonstration are the Wednesday, Thursday and Friday preceding the Annual Farm School Picnic on Saturday, April 20, so that farmers who attend the demonstration may remain over for the picnic without having to make a special trip.

Several features will mark this demonstration that are entirely novel and that will greatly increase its interest for the farmer. Particulars will be given next week.

#### COUNTY HORTICULTURAL COMMISSIONERS

President Sharp of the state association of county horticultural commissioners announces that he has appointed Commissioner Brock to succeed Roy K. Bishop on the executive committee. The committee is now composed of Chas. F. Collins, chairman, Fred P. Roulland, John P. Coy, A. A. Brock and F. W. Waite.

#### THE FARMERS FIGHT

The Farmers' Protective League of California has been a power in California during the past four years and proposes to continue to look after the welfare of the farming interests, i. e., providing the aforesaid interests wish it. But as it has some problem the league is issuing the following statement or appeal to farmers:

#### LAST CALL—LEAGUE WANTS HELP!

The Farmers' Protective League is entering into its fourth year. For three years it has fought the farmers' fight, through two elections and before two sessions of the legislature. It has accomplished much. You have been benefited by it unbeknown to yourself. It is the only body of its kind in the state, organized and officered by farmers alone, for legislative work. As in frequent affairs of this kind, it has no entangling alliances or leadership by other interests who generally lead and gently exploit the farmer.

In the coming year there occurs an election of legislative members and a governor. More members of our calling from rural districts are desired in both houses of that body. Rural matters are largely in the hands of officials incompetent to understand rural needs, and ever ready to see that farmers do not fill such places. The fault is our own. The organization of all classes of farmers, of all callings of the industry, is essential, that each may help the other in his needs.

The present officers of this league have labored unremunerated, long and hard for the good of any and all classes of farmers in this state. In many instances, in fact in most in-

stances, thanks have not even been forthcoming for their efforts. Voluntary praise and appreciation has been received sparingly. They have carried the load as long as possible. More help, new blood, new directors on the board and more enthusiasm is now needed.

You, who read this, it is your affair. You must take hold of it in your locality. Workers are necessary in each of the 58 counties of the state to organize at once. Time is short. A fund of \$50,000 is desired. This is a stingy small sum if properly divided among all farmers. If a few have to bear it it is a large one.

What does it matter how large crops we raise or the price obtained if we permit others to make laws practically confiscating our efforts? This organization is a going one. It is ready with files of information and data, with experience and understanding. If it should be compelled through your lack of interest to cease activity, you will sustain a loss not replaceable without great expense and time.

Every reader has a duty. That duty is to get busy in your own community and county to the end of organization. It will mean some work, but it will mean just as much a part of business as to plant and harvest.

One without the other is work and effort incomplete.

Last call. Are you all done! If you are, the hammer falls!

## PACIFIC REDWOOD PIPE

embodies these advantages:—

It has 20% greater carrying capacity than either riveted steel or cast-iron pipe, costs much less and lasts at least as long as the latter and several times as long as the former.

Redwood is immune to the attacks of insects, acids and alkalies.

It is not affected by heat or cold. Arid or humid climates do not reduce its life.

Here we have long life, continuous service, complete satisfaction, and at a cost so low that none should lay any other than Pacific Redwood Pipe.

Our engineers will be glad to give you an estimate of the cost of the pipe you should have, if you'll tell us the conditions creating your needs.

Address nearest office.

**PACIFIC TANK & PIPE CO.**  
318 Market Street, San Francisco  
910-12 Trust and Savings Building  
Los Angeles

Pacific Tank and Pipe Co.  
318 Market St.  
San Francisco. Dept. C9

Gentlemen:  
Please send promptly your catalogue of Water Tanks.

I need a tank to hold..... gallons.

It should be mounted on a tower  
.....feet high.

The water to be delivered from  
.....

Pipe { Length.....  
Size.....

Name.....

Address.....





**MILWAUKEE**  
**Mayer**  
**CUSTOM MADE**  
**HONORBILT**

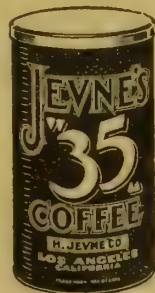
For style and comfort wear

**Mayer**

**HONORBILT SHOES** For all the Family  
Ask your dealer for Mayer Shoes. Look for the trade-mark on the sole.

**F. Mayer Boot & Shoe Co.**  
Milwaukee, Wis.

Having told your Grocer  
To "Send You  
Jevne's "35,"  
Coffee"



—as a good housewife you will in future *always* tell him to send you Jevne's "35,"

That is the way thousands of other good housewives insure good coffee for their table.

Your grocer can always supply you

**H. JEVNE CO.**

LOS ANGELES

## The cheapest water on earth

Using the Eclipse Wood Windmill for pumping guarantees the cheapest water supply possible. Wind costs nothing. The Eclipse has been sold for 50 years—and mills erected 38 years ago are still pumping, with no repair expense.

Figure your Eclipse pumping cost on the basis of at least 38 years of service and your water supply will cost you \$1.65 a year. Talk ECLIPSE Windmill economy with your dealer.

**ECLIPSE**

**only \$1.65 a year**

**FAIRBANKS, MORSE & CO.**  
Chicago, Illinois Manufacturers



**THE ORIGINAL**  
**Indoor Closet**  
**Ro-San**

30,000 SOLD—FIFTH YEAR  
**More Comfortable, Healthful, Convenient**

Eliminates the out-house, open vault and cess pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

**ABSOLUTELY ODORLESS**  
Put It Anywhere In The House  
The germs are killed by a chemical process in water in the container. Empty once a month. No more trouble to empty than ashes. Closet absolutely guaranteed. Guarantee on file in the office of this publication. Ask for catalog and price.

**ROWE SANITARY MFG. CO.** 1702 3rd ST., DETROIT, MICH.  
Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

## Household Department

### RED-ROBED FRANCE

The Huns stripped off my own green gown  
And left me stark and bare;  
My sons, they spread a red robe down  
And wrapped me in it there.

The garb they brought was red as blood—  
The robe was red as flame;  
They veiled me in it where I stood  
And took away my shame.

Was ever web so costly wove  
Or warp so glorious spun?  
I'll wear no vestment prized above  
That wide and scarlet one.

Though younger sons, some happier day,  
Weave me a fair green gown  
Anew, or bid me don array  
Of corn-ripe gold and brown.

The names (like breads, told one by one)  
My heart will still repeat;  
Will call, with tears, each dear, dear son  
Whose red robe wrapped my feet!  
—Everybody's Magazine.

### NOW WHICH IS THE HUSBAND?



F a woman's husband and her brother trade heads, then which is her husband?

Such is the rival of the riddle of the Lady and the Tiger now put forth for people to puzzle over. This perplexity is set forth in one of the fairy tales of ancient India just translated from the Sanskrit by Professor Arthur W. Ryder, head of the department of Sanskrit of the University of California, and now published as a volume entitled "Twenty-two Goblins."

"Long ago there was a king named Glorybanner. His city was named Beautiful. On a certain day in each year a great crowd of people came there on a pilgrimage to bathe in the lake called 'Bath of Gauri.'

"One day a man named White came there from another village to bathe, and the youth saw a maiden who had also come there to bathe. Her name was Lovely. She robbed the moon of its beauty and White of his heart. His father went to the house of Lovely's father and asked that the girl might be given to his son. Then when the time came, White was married, and went happily to his father's house with his sweet bride.

"Now one morning White set out for his father-in-law's house, together with his brother-in-law and Lovely. When they came to the city Beautiful they saw the great temple of Gauri. And leaving them without, White went in and bowed before the goddess whose 18 arms had killed the horrible demons and whose lotus feet were set upon a giant that she had crushed. And when he had worshipped her an idea suddenly came to him. 'People honor this goddess with all kinds of living sacrifices. Why should I not win her favor by sacrificing myself?' And he fetched a sword from a deserted inner room, cut off his own head, and let it fall to the floor.

"Presently his brother-in-law entered the temple. When he saw his brother-in-law with his head cut off he went mad with grief, and cut off his own head in the same way.

"Then Lovely entered the temple, and when she saw her husband and her brother she cried 'Alas! this is the end of me! What is my life good for now?'

"Before attempting to kill herself she prayed to the Goddess Gauri. Then she tied a rope to an ashoka tree, but while she was arranging the rope about her neck a voice from heaven cried 'Do nothing rash, my daughter! Leave the rope alone! Though you are young, I am pleased with your unusual goodness. Place the two heads on the two bodies, and they shall rise up again and live through my favor!'

"So Lovely left the rope alone and joyfully went to the bodies, but in her great hurry and confusion she made a mistake. She put her husband's head on her brother's body and her brother's head on her husband's body. They then arose, sound and well, like men awakened from a dream.

"Then Lovely noticed that she had made a mistake in their heads, and she was troubled and did not know what to do.

"Now, then, which was her husband.

### MIL O MUFFINS THE BEST EVER

If you haven't yet tried milo meal, make haste, you're missing something extra good. The Cultivator force has been enjoying muffins, hot cakes, etc., from milo meal sent in by W. H. Macy of Orland who grinds the yellow milo on his own farms, as you may have noted in last week's Cultivator.

Here is one recipe that was very satisfactory:

One and one-third cups of milo meal, two-thirds cup flour, two heaping teaspoons baking powder, pinch of soda, one cup sour milk, tablespoon sugar, pinch salt, two tablespoons shortening (if drippings are used, add no more salt). Bake in hot greased muffin pans in quick oven.

Here is another, using eggs:

One pound milo maize flour, one pound wheat flour, one-half pound shortening, one and one-half ounces baking powder, four eggs, four ounces sugar, one quart milk. Cream sugar and shortening, add eggs, milk, milo maize and flour and baking powder sifted together. Bake in muffin pans.

### More Recipes Wanted

If you have tried milo, kafir, feterita, rice flour, barley meal, or any other wheat substitute in quick baking powder breads, tell the rest of us through the Cultivator how you did it. As you will note we are also asking this week for yeast bread recipes, using substitutes for wheat flour.

For these bread recipes, either for yeast or quick breads, we will continue subscription to the Cultivator three months. Please send with your recipes name and address of one to whom you wish extension credited.

### HOUSEHOLD QUERIES

#### Bread with Wheat Substitutes

Please give us proven recipes for making the new kind of bread from white flour and substitutes combined. —Subscriber, Pomona.

To this subscriber we sent copies of the Cultivator of January 19, 1918 in which on Page 92 are two recipes for yeast bread, substituting one-third corn meal and one-third stale bread crumbs; Cultivator of December 15, 1917, Page 621, substituting one-half oatmeal, one-half barley, one-half mashed potato, or equal amount of rye; Cultivator of October 13, 1917, two-thirds corn meal.

The Cultivator will be glad to receive from our housekeeper subscribers other recipes which they have tested and found good for making bread with wheat and substitutes. A three months extension of subscription will be placed to the credit of all sending such recipes that are published in the Cultivator.

### PROOF

Sponge: "I think a street car has just passed."

Blotter: "How yuh know?"

Sponge: "I can see its tracks."

## The Cultivator Patterns



8723—Ladies' Slip-on Blouse. Cut in sizes 36, 38, 40 and 42 inches bust measure. This is a slip-on blouse with kimono sleeves; the front and back panels are in square apron effect.

8117—Child's Box Plaited Dress. Cut in sizes 4, 6, 8 and 10 years. This little dress is cut in one piece from shoulder to hem and it is slashed in front for slipping on over the head.

8702—Ladies' Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The simple waist has a graceful shawl collar and square vest of contrasting color and material; the skirt has two gores, and it is slightly gathered all around.

8117—Child's Box Plaited Dress. Cut in sizes 8 years. This is a one piece dress belted in long waisted effect and may be made with long or short sleeves.

8703—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The waist is draped in surplus effect; a one-piece skirt with straight lower edge is gathered to the underwaist.

8173—Ladies' House Dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. A plain waist and three-gored gathered skirt are joined at the normal waistline.

8705—Ladies Four Piece Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The front gore is in panel effect and the side and back gores are gathered.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

### HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

Pattern Department  
California Cultivator  
Los Angeles



CONTRIBUTED SANDWICH  
RECIPES

Ida R. Wehmeyer, Vista

Grind raisins and half as many nuts as raisins. Mix with enough cream to make a thick paste. Spread between thin slices of bread. A date paste may be prepared in same way, only adding a little lemon juice.

Another: Cold fried liver makes delicious sandwiches. Chop very fine, season rather highly. Add minced onion, a hard boiled egg and dressing enough to spread easily. Serve with lettuce leaves between thin slices of rye bread.

Minnie G. Childs, Tustin

Avocado and Walnut Sandwich—Peel and mash avocado, season with salad dressing, mixing to consistency of thick cream. Spread on thin slices of unbuttered white or brown bread, sprinkle with chopped walnuts, press bread firmly together and cut in triangle shape. Make plenty, they are good.

Hot Cheese Sandwich—Cut bread thin, butter sparingly, cover with sliced or grated cheese. Press firmly together. Have ready a hot skillet, place sandwiches therein, turning them so they will be a very delicate brown on both sides. I brush the skillet with a little butter to prevent sticking. A delicious sandwich to serve with hot cocoa on a cool evening. Cut in long pieces and serve on hot plate.

Mrs. C. W. Leeper, Lancaster

War Sandwiches of 1918—Take a rabbit (jack rabbit), soak in salt water over night to remove blood. In morning remove from salt water, cut slime off or scrape well, then par-boil in soda water 30 minutes or perhaps a little longer, being careful not to cook soda into meat. Take out, put on some more water, simmer awhile to take taste of soda out, then cook until tender in the third water, after adding two bay leaves, and some like sliced onion too. When meat is tender chop fine or run through food chopper, place in vessel (crockery, enameled or porcelain), cover with lid, which fits down tight on meat and place heavy weight on same. Put in cool place (let freeze if cold enough). When pressed well it is ready to slice and use in sandwiches. Forget not to salt and pepper to taste before pressing. Rabbits of any kind will do, but in most places the jack rabbits are more plentiful. If for any reason you find the meat is too dry you can put a little of the last water it was boiled in with the meat before pressing, or better still perhaps use some salad dressing.

DELICIOUS BEAN-OLIVE  
CROQUETTES

Try this and see how you like it.

One pint boiled blackeye beans, mashed, one egg, one-half cup ripe olives, two tablespoons flour, dash of red pepper, or part of chili cut fine, salt and black pepper to taste. Form into small cakes and fry.—Mrs. M. H. Dewey, Oroville.

## REAL PENALTY

"I have come here," said the angry man to the superintendent of the streetcar line, "to get justice; justice, sir. Yesterday as my wife was getting off one of your cars the conductor stepped on her dress and tore a yard of frilling off the skirt."

The superintendent remained cool. "Well, sir," he said, "I don't know that we are to blame for that. What do you expect us to do? Get her a new dress?"

"No, sir. I do not intend to let you off so easily as that," the other man replied gruffly. He brandished in his right hand a small piece of silk.

"What I propose to have you do," he said, "is to match this silk."—New York Times.

## MAKING HOUSEWORK EASIER

Written for California Cultivator by  
Ellen C. Cannady

Spread old newspapers down where they will catch dirt, ashes, lamp trimmings and soot. If the range is wiped with soft paper after cooking greasy food, and washed with suds once or twice a day, it will look better and be cleaner than if it is kept blackened. Old papers may be used to lighten many a disagreeable task and save the hands wonderfully.

If the housewife will wear sleeve protectors, oilcloth aprons and rubber gloves while washing dishes, dusting or mopping the floor her laundry work will be greatly lessened. Cover the pantry shelves with oilcloth and the kitchen table with zinc or heavy tin, and it will be easy to keep them clean.

The equipment and tools for a certain kind of work should be kept together. If there is a closet near the range for the kettles and pans, and shelves above the work table for baking powder, sugar, spices and things used in making bread or cake, you will not have to walk back and forth across the room for everything that is needed. Use glass fruit jars for cereals, coffee, tea and cocoa, and they can be kept dry and airtight. It will not be necessary to label them, for one can see at a glance what they contain.

A soft soap made by pouring one gallon of boiling water over a pint of Gold Dust washing powder will be a great labor saver. It is excellent to remove grease from the kitchen sink; add a little to a pailful of warm water when you mop the kitchen floor or wash the painted woodwork. Nothing will clean oilcloth or linoleum so quickly without injuring the colors. In fact you will find a great many uses for it, and after you have tried it you will not be willing to do without it in your kitchen.

If sheets are folded straight and even when they are taken from the line, and the hems and selvedge edges ironed, they will be ready for use.

Have a high stool in your kitchen and use it instead of standing while preparing vegetables, beating eggs, making cake and ironing. You can do the work just as quickly and as well.

If you will put the ground coffee in a perforated aluminum cup with a tight fitting lid and lower it into the boiling water in the coffee pot, it will answer every purpose of an expensive percolator and is easy to care for. After it has boiled a few minutes the cup is taken out and the coffee is set where it will keep hot without boiling until it is served.

## HE UNDERSTOOD

The pale-faced passenger looked out of the car window with exceeding interest. Finally he turned to his seat-mate.

"You likely think I never rode in the cars before," he said, "but the fact is, pardner, I just got out of prison this mornin', and it does me good to look around. It is goin' to be mighty tough, though, facin' my old-time friends. I s'pose, though, you ain't got much idea how a man feels in a case like that."

"Perhaps I have a better idea of your feelings than you think," said the other gentleman, with a sad smile. "I am just getting home from Congress."—Argonaut.

## SPEAK SOFTLY

Speak softly; it is better far

That angry words be barred.

Speak softly wheresoe'er you are—  
But keep on thinking hard.

Every ball of the YUBA TREAD kept at work at food production helps as much as a hundred balls flung into German trenches.

Write for the Catalog

Yuba  
Manufacturing  
Co.

Dept. B20

433 California St.

San Francisco

SEEDS  
1918  
CATALOG

of Seeds, Plants, etc. is ready for you. It's full of useful information and Hints on Gardening. Send for it today.

Morris &amp; Snow Seed Co.

439 So. Main Street  
Los Angeles, Cal.


PRICES PAID BY  
US FOR RAW  
FURS ARE  
EXTREME-  
LY HIGH

Write for Price List

E. R. SKINNER & CO.  
1121 FRONT STREET  
SACRAMENTO, CAL.

Soil, Water and Fertilizer Analyses

Mark Walker, B. S.

211 W. First St.

Los Angeles, Cal.

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

You will not be able to make your Income Tax returns without instructions.

Moore's War Tax book was written especially for you. It is easy to understand, as many examples are worked out.

There is a penalty attached if the tax is not paid on time---

March first is the date set for returns.

Send 50 cents (no stamps) and get a copy of this complete analysis NOW.

This advertisement will not appear again.

The ten Bosch Company

340 Sansome Street  
San Francisco

## MACHINERY

OF EVERY DESCRIPTION  
BOUGHT and SOLD  
BUTTRISS & McCLELLAN  
205-7 N. Los Angeles St. A-5473 Bdy. 8098

Number 102  
the Sunset Limited,  
is a fast train

—Leaves Los Angeles at 8:30 every morning, arrives New Orleans in 57 hours and 30 minutes — only two nights on the road. Connection with fast train at New Orleans for New York makes the journey only four nights from here to New York. Also connects with Southern Pacific steamers for New York, and carries through tourist sleeper daily to Washington, D.C. The SUNSET EXPRESS, another good train, leaves at 3:30 p. m. daily.

## SOUTHERN PACIFIC

Ticket Offices

212 West Seventh Street

606 South Spring Street

Pacific Electric Bldg., Main Lobby

Station—Central Ave. at Fifth Street  
Phones: 60641, Pico 2000—Day or nightSee the  
Apache Trail



## A Load of Culverts that went to One of Our Allies



## When War Makes Time Precious and Labor Scarce

Governments turn to culverts that can be bought ready-made, shipped promptly, and installed quickly by unskilled labor.

## "ARMCO" IRON CORRUGATED CULVERTS

not only meet all requirements as to speed of delivery and ease of installation but they fulfill every demand for endurance and strength. The iron used in "Armco" Culverts is remarkable for its purity and evenness. If you have ever pulled an old hand-wrought nail out of a building that has stood for years, you will know that pure iron endures.

"Armco" Iron Culverts last for years and years without a cent for cost of maintenance. Not affected by frost. Stand up under heavy loads. Withstand spring freshets. Measured in terms of service they are an investment—not an expense.

For full information as to rust-resisting "Armco" Iron Culverts, Flumes, Sheets, Roofing, and Formed Products, write to

ARMCO IRON CULVERT MFRS. ASSOCIATION  
CINCINNATI, OHIO

This Mark Appears  
on every section



Resists Rust



## DEEP WELL TURBINES

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



"Write for Catalog No. 48"

BYRON JACKSON IRON WORKS, Inc.

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LOS ANGELES

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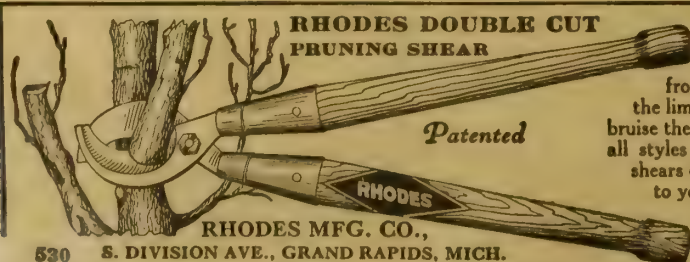
## THORNLESS Blackberry

Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

Ekstein Nurseries

Modesto

California



RHODES DOUBLE CUT  
PRUNING SHEAR

Patented

RHODES MFG. CO.,  
S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door.

Write for circular and prices.

## Los Angeles Market

Los Angeles, Feb. 13, 1918.

### BUTTER

Produce Exch. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....48  
Dairy Exch. prices past week:  
Feb. 6 7 8 9 11  
'18 ..... 48 48 48 48 48  
Rcts. for 5 days ending Feb. 11, 206,300 pounds.

### CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....30  
Tillamook Trip .....27  
Domestic Swiss .....34

### EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extra .....40  
Pullet .....38  
Case Count .....39  
Dairy Exch. prices past week:  
Feb. 6 7 8 9 11  
'18 ..... 50 49 40 40 40  
Rcts. for 5 days ending Feb. 11, 1849 cases.

### POULTRY

We quote to producers:  
Broilers .....34@35  
Fryers .....32  
Hens—Leghorns .....26@27  
Roasters, 3 lbs. and up .....28  
Ducks, lb. ....27  
Roosters, old .....17  
Turkeys .....28@30  
Geese, lb. ....25

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning February 13, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. 10.00@10.50  
Heifers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....3.50@4.00  
Hogs—  
Av. 125 lbs. ....13.50@14.50  
Av. 150 lbs. ....14.50  
Av. 175-200 lbs. ....15.25  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent. ....10.50@11.00  
Prime wethers .....10.00@10.50  
Ewes .....14.50@15.00  
Lambs .....10.50@11.00  
Yearlings

### POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....1.75@2.15  
Russets .....1.90  
Salinas .....2.50  
Sweet, sk. ....4.50@4.75

### ONIONS

Wholesale selling price:  
Brown .....2.25  
White .....3.00  
Garlic .....6

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....90@1.15  
Beans—String, lb. ....25  
Limas, lb. ....25  
Ky. Wonder .....25  
Beets, sk. ....2.00  
Brussel Sprouts, lb. ....12  
Cabbage, lb., 3¼; sk. ....2.20  
Red, lb. ....4½  
Carrots, doz. ....30  
Cauliflower, doz. ....75  
Celery, doz. ....80  
Cucumbers—Hothouse, doz. ....1.25@2.50  
Egg Plant, lb. ....15@16  
Horseradish, lb. ....15  
Lettuce, doz. ....30  
Leeks .....30  
Mint, doz. ....40  
Mustard, doz. ....20  
Onions, green, doz. ....25  
Oyster Plant, doz. ....40  
Peas, Tel. lb. ....12@15  
Peppers, Chili, lb. ....18  
Parsnip, doz. ....40  
Parsley, doz. ....35  
Radish, doz. ....25  
White .....35  
Rhubarb—Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....80  
Squash—Crookneck .....70@75  
Hubbard, lb. ....73  
Tomatoes, lug. ....2.25  
Turnips, doz. ....35  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.65@2.00  
Jonathan .....1.80@2.25  
King David .....1.75@2.00  
W. W. Pearmain .....1.40@1.85  
Spitzenberg .....2.00@2.65  
Y. Newton .....1.35@1.75  
Avocados, doz. ....6.00@9.00  
Bananas, lb. ....5  
Pears, Winter Nellis, lug. ....2.00

### CITRUS

Lemons, 4.25@5.00; juice .....3.00  
Grapefruit .....3.00  
Limes, basket .....75  
Oranges—Navels, bx. ....3.50@6.25  
Tangerines, lb. ....8

### DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
(20-lb. bx., faced, 50s, 1½c less). Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 18; extra ch., 18½; fy., 19; pears, 12½; peaches, ch., 12; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 14; 40-50s, 13½; 50-60s, 13; 60-70s, 10½; 70-80s, 10; 90-100s, 9.  
Figs—Callmyrns, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....24  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....16  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20

No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

### HONEY

Prices of wholesaler to retailer:  
Extr. W. W., lb. ....20  
Comb, W. W. case .....5.00  
Light Amber, case .....4.75

### RICE

Wholesale quotations:  
Cal. ....\$7.50  
Broken .....5.60@6.00

### BEANS

These are prices made by wholesaler to retailer.

Lady Washington .....13.00  
Limas .....14.00  
Pinks .....9.00  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....13.00  
Blackeyes .....9.00  
Tepary .....9.00@10.00  
Lentils .....25.00

### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oats .....28.00@30.00  
Volunteer Oat .....18.00@20.00  
Wheat .....28.00@29.00  
Barley .....27.00@30.00  
Alfalfa .....27.00@29.00  
The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

### GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal .....2.20  
Alfalfa Molasses .....2.30  
Barley, Rolled .....3.50  
Barley, Reclaimed Whole .....3.55  
Barley Hulled .....4.15  
Beet Pulp .....2.25  
Bran, (Light) 65 lb. sk. ....1.95  
Cocoanut Meal .....2.75  
Cottonseed Meal .....3.50  
Corn, Yellow .....4.45  
Corn, White .....4.45  
Corn, Cracked .....4.50  
Corn, Egyptian .....4.05  
Corn Feed Meal .....4.55  
Mixed Feed (80 lb. sacks) .....2.12½  
Milo, Maize, Field Run .....3.70  
Oat Chop .....1.90  
Oats, White .....3.70  
Oats, Rolled White .....3.75  
Oats Hulled .....4.75  
Oats Rolled Chicken Groats .....4.85  
Oats Eastern Red .....3.70  
Oatmeal .....3.85  
Red Dog .....2.65  
Rye .....4.25  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Buckwheat .....5.00@5.10  
Canada Peas .....6.40@6.50  
Charcoal, 50 lb. sk. ....3.40@3.50  
Clam Shell .....70@95  
Grit Granite .....75@85  
Hemp .....5.50@5.60  
Oyster Shell .....1.35@1.45  
Red Millet .....4.65@4.75  
Sunflower Seed .....5.15@5.25  
Soya Bean Meal .....3.50@3.60  
Scratch Feed .....3.90@4.00  
Scratch Gritless .....4.10@4.20  
Vetch .....5.10@5.20  
Rice Bran, ton .....40.00  
Middlings, ton .....45.00  
Rice Polish, ton .....49.00

## San Francisco Markets

San Francisco, Feb. 12, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Fresh extras .....52½  
Dairy Exch. quotations past week and year ago:  
Feb. 5 6 7 8 9 11  
'18 ..... 52 52 51½ 51½ 52½  
'17 ..... 37 38 38 39 38½

Rcts. wk. ending Feb. 11, 461,100 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25½, Y. Am. ....27½  
Cal. Young Am. ....27  
Jack cheese, full cream .....26@27  
Half skim .....14@17

### EGGS

Extras .....42½  
Firsts .....42  
Selected Pullets .....41½

Dairy Exch. quotations past week and year ago:  
Feb. 5 6 7 8 9 11  
'18 ..... 34 34 33½ 33½ 32½  
'17 ..... 34 34 33½ 33½ 32½

Rcts. wk. ending Feb. 11, 19,029 cases.

### POULTRY

We quote from producers, lb.:  
Hens, lb. ....34@36  
Broilers—1 to 1½ lbs., 50; 1½ to 1½ lbs., 45; 1½ to 2 lbs., 40; 2 to 3 lbs., 35.  
Roosters .....32@35  
Squabs, doz. ....3.50@5.00  
Ducks .....25@30  
Geese .....20@25  
Belgian Hares, live, lb. ....20@22  
Turkeys, dr., 34@36; live .....27@28

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ¼ to ½c more.  
Steers, lb., 9@10½; undesirable, 6@8; cows and heifers, 7@8½; undesirable, 4@6; calves, 7½@10.  
Hogs—Hard grain-fed, weighing 100 to



Hogs—Hard grain-fed, weighing 100 to 140 lbs., 14¢@14½; 140 to 175 lbs., 15¢@15½; 175 to 300 lbs., 15½¢@15¾; 300 to 400 lbs., 15¢@15½.

Sheep—Wethers, 12¢@12½; ewes, 10¢@10½; lambs, 13¢@15.

#### POTATOES

Wholesale selling prices at wharf, cwt.:  
River ..... 1.00@1.60  
Yakima Gems ..... 1.40@1.75  
Sweets ..... 4.25@4.50  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.75@2.00; high top, 1.50@1.75; Garnet Chile, 2.75@3.00; White Rose, 2.00@2.50; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

#### ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown ..... 1.70@1.75  
Bermudas ..... 2.75@3.00  
Garlic, lb. .... 4¢@5

#### VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 40¢@75  
Jerusalem, 20 lb. bx ..... 75  
Asparagus, lb. .... 15¢@25  
Beets, sk. .... 1.50@1.75  
Brussel Sprouts, lb. .... 4¢@6  
Carrots, sk. .... 75¢@1.25  
Cauliflower, cr. .... 1.75@3.00  
Celery, cr. .... 1.00@1.25  
Egg Plant, lb. .... 40¢@1.35  
Lettuce, cr. .... 1.00@1.25  
Parsnips, sk. .... 1.00@1.25  
Peas, lb. .... 10¢@14  
Peppers, Bell, lb., 20@25; Chili, 10¢@14  
Pumpkins, sk. .... 85¢@1.00  
Rhubarb, bx. .... 2.25@2.50  
Squash—Marrowfat, sk. .... 85¢@1.00  
Cream, lug ..... 1.00@1.15  
Hubbard, sk. .... 90¢@1.15  
Tomatoes, cr., 1.00@1.25; Mex. .... 2.00@3.00  
Turnips, sk. .... 75

#### FRESH FRUITS

Apples—Spitzenburg, 1.25@2.65; Red 1.25@1.50; Newton Pippins, 1.15@1.75; Pears—Winter Nellis bx., 2.00@2.75; winter pears, lug, 1.50@1.75.  
Strawberries, ch. .... 6.00@10.00  
Avocado, doz. .... 1.00@3.50  
Bananas, Hawaiian, lb. .... 4½¢@5  
Pineapple, doz. .... 4.00@5.00  
Citrus Fruits—Lemons, bx. according to size, fy., 3.00@6.00; ch., 2.50@5.00; lemonettes, 1.50@2.25; grapefruit, 2.50@3.00; ch., 2.00@2.50. Oranges—Bx. Navels, fy., 3.00@5.50; ch., 2.75@4.50; do culls, falfa, 18; do sage, 19; amber, 15.

#### DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, lb. standard, 9½; choice, 9½; extra choice, 10; fancy, 11.  
Figs—In 50-pound boxes, per pound: White Adriatic, standard, 8½; choice, 9½; extra choice, 10½; fancy, 11½; Calimyrna, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 13½; ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8; 40s, 8½; 30s, 9½.  
Apples—In 50-pound boxes, lb.: Fancy 15½; ex. ch., 14½; ch., 14½.  
Pears—Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-oz. 45 to cs, 5.25; ch., 16-oz. cartons, 3.00 for 36s; do, 12-oz. cartons, 45s to cs, 3.10. In bulk: Sun Maid, 1.75; fy., 1.90; ch., 1.75.  
Sulphur-bleached Thompson, extra fy., 5.37½; fy., 5.12½; ch., 4.87½; soda-bleached, 4.75.  
Loose: One-crown, 4.15; 2-crown, 3.40; 3-crown, 3.65; 4-crown, 3.20.

#### NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. X. L., 19½; No Plus, 18½; Drakes, 16; hard shell, 11½.  
Chestnuts, Cal. lb. .... 10¢@20  
Peanuts ..... 11¢@12½  
Pecans, lb. .... 19¢@20  
Pine Nuts ..... 19¢@20

#### HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15@18.

#### BEANS

Jobbers' prices, cwt., recleaned:  
Limas ..... 12.60@12.75  
Bayous ..... 8.90@9.00  
Small Whites ..... 12.25@12.50  
Mexican Reds ..... 8.25@8.50  
Large Whites ..... 12.00@12.20  
Blackeyes ..... 8.10@8.25  
Pinks ..... 7.90@8.00  
Red Kidney ..... 13.00  
Cranberry ..... 11.75@12.00  
Teparies ..... 8.75@9.10

#### RICE

The United States food administration has fixed maximum prices on California rice as follows: Rough rice, lb., 4c; clean rice, lb., 7c.  
Rough, lb., 3.9¢@4c.  
Cleaned, central, No. 1 hard, 6.90¢@7.00.  
Brewers' and screenings, nominal.

#### MAY

Under date of February 9, Scott, Magner & Miller says:  
Receipts past week, 1192 tons. Demand is very light in San Francisco and although receipts are firmly held prices are lower than asked for same grade in the interior, to say nothing of the freight which must be added. The demand from the lower Coast sections where very little rain has fallen continues good, and we believe that should this section get a good drenching in the next week the demand for hay from there would increase because everyone would then figure on feeding their stock until such time as grass was available. Without rain many, on the contrary, will probably have to allow their stock to perish, as it would be next to impossible for them to ship hay in at the present prices to keep them going. Although we have had very nice weather with from one inch to three inches of rain in the Bay sections very little rain has fallen in the

southern Coast section and the lower San Joaquin Valley where it is so badly needed. Referring to the proclamation of the president recently issued pertaining to the licensing of hay dealers, we are just in receipt of a telegram from Washington stating that only those who handle in the aggregate \$100,000 worth of feed stuffs per annum, including hay, will be required to take out the license. This will relieve many of the small dealers from the trouble of making out monthly reports of sales.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling must be added according to conditions.

Fancy Wheat Hay, (light 5 wire bale) ..... 29.00@30.00  
No. 1 Wheat or Wheat and Oat Hay ..... 27.00@29.00  
No. 2 Wheat or Wheat and Oat Hay ..... 25.00@27.00  
Choice Tame Oat Hay ..... 28.00@29.00  
Other Tame Oat Hay ..... 25.00@27.00  
Wild Oat Hay ..... 24.00@27.00  
Barley Hay ..... 25.00@27.00  
Alfalfa ..... 25.00@27.00  
Stock Hay ..... 20.00@22.00  
No. 1 Barley Straw ..... 60¢@90

#### GRAIN

Grain Exchange prices, cti.  
Corn, Cal. Yellow, cwt. .... 3.25@3.50  
W. Egyptian ..... 3.40@3.50  
Brown Egyptian ..... 3.20@3.25  
Barley, Feed and Brewing, cwt. .... 3.35@3.40  
Milo ..... 3.20@3.30  
Oats, Red Seed ..... 3.25@3.35  
Feed ..... 3.00@3.10  
New Black ..... 3.25@3.50  
Rye, Utah ..... 4.00@4.25  
Wheat—Government prices: Common white hard, base price is \$3.50 per central, or \$2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft wheat, base price 2 cents per bushel less, or \$2.08 per bushel; white club (including Sonora), \$2.06 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, 3 cents per bushel reduction; if 56 to 58 pounds, 6 cents per bushel less; if less than 56 pounds, grain becomes sample grade and sells on its merits up to within 1 cent per bushel of 56-lb. wheat. Sacked wheat 4 cents per bushel more, less tare for weight of sacks.

#### FEEDSTUFFS

These prices applicable to San Francisco, with \$1.00 less at Sacramento and Stockton, are for cash at the mill in carload lots, and include sackage, with an additional rate of 50 cents per ton in less than carload lots.

Wholesale prices per ton. Prices fixed by food administration as San Francisco price; Sacramento and Stockton \$1.00 less on carlots at mill door:  
Bran ..... 34.00@35.00  
Middlings ..... 41.50@42.50  
Mixed Feed ..... 37.00@38.00  
Shorts ..... 35.00@36.00  
Rolled Barley ..... 66.00@67.00

#### SEEDS

Prices in round lots, lb.:  
Millet, recleaned ..... 4½¢@5½¢  
Alfalfa ..... 20¢@21  
Flax ..... 6¢@6½¢  
Hemp ..... 4½¢@5½¢  
Rape ..... 2½¢@3

#### Citrus Fruit Market

Los Angeles, Feb. 13, 1918.

The weather is moderating in the East and orange prices are improving. A few cars of frosted fruit still on hand are selling around \$1.00, but good Navels are

bringing around \$5.00 for small standard sizes; large sizes heavily discounted. The small crop in California and the traffic congestion have matched up this season; if California had had her usual heavy crop to move, there would have been much red ink from delayed and spoiled fruit. Of course some cars caught in the Eastern blizzards have been frozen and sold at a loss, but on the whole the returns in cash to the growers of the state are estimated this year at about 75 per cent of normal, although the crop is showing up about 40 per cent in volume. Mild weather is maturing the Valencias early.

Lemons are bringing good prices in all markets, and a big yield is expected from the next two months' pickings. Heavier shipments of foreign lemons are being received than last year.

#### Shipments

Shipment of oranges from Southern California to date since November 1, 1917: Oranges, 3535 cars; lemons, 840; total, 4375. Last season same date: Oranges, 6402; lemons, 1418; total, 7820. From Central California to date: Oranges, 1881; lemons, 102; total, 1983. To same date last season: Oranges, 3894; lemons, 146; total, 4130. From Northern California to date: Oranges, 202; same date last season, 842.

#### AT THE AUCTIONS

February 6  
New York: 5 cars Nav., 1 Val., 1 Lem. Nav. \$4.00-\$6.05, Val. \$2.65, Lem. \$2.45-\$3.75.  
Cleveland: 4 cars. Nav. \$2.20-\$4.90. Cincinnati: 1 car Val. \$2.85, 1 Lem. \$3.75-\$6.05.  
Philadelphia: 1 Lemon showing frost damage, \$1.05-\$1.35.  
St. Louis: 1 Nav. 1 Val. 1 Lem. Nav. \$3.25-\$4.10, Val. \$3.65, Lem. \$5.60-\$6.05.  
February 7  
New York: 2 Nav. 1 Val. 1 Lem. Nav. \$4.20-\$6.30, Val. \$2.55-\$3.60, Lem. \$2.10-\$3.10.  
Boston: 3 cars. Frozen Nav. \$1.20-\$1.75, Lem. \$1.00-\$3.35.  
Philadelphia: 1 Val. badly frozen \$1.65.  
February 8  
St. Louis: 1 Nav. 1 Val. Nav. \$2.70, Val. \$4.20.  
Boston: 3 cars. Nav. \$3.60-\$6.05, Lem. \$1.40-\$1.75.  
Cleveland: 1 Nav. \$5.65.  
Cincinnati: 1 Lem. \$4.10-\$6.05.  
Pittsburg: 1 Nav. \$3.15-\$4.20, 1 Val. \$2.40, 1 Lem. \$1.60-\$3.75.  
February 9  
New York: 8 cars. Nav. \$3.70-\$5.20.  
February 11  
New York: Nav. \$3.85-\$4.75.  
No sales in Boston or Philadelphia.

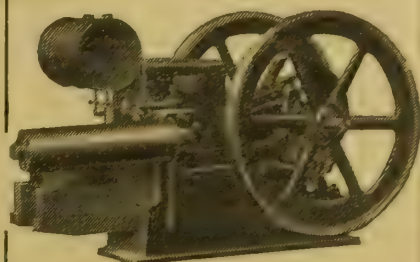
#### THE TRUCK CROP SITUATION

For the week ending February 1, 1918. R. G. Risser, assistant truck crop specialist reports that for Southern California personal field inspection showed the cabbage crop in a more thrifty growing condition, but aphids still present. Growers are receiving from \$50 to \$65 per ton, representing a strong advance.

Cauliflower is needing rain. The height of the season has been reached, but three or four months of shipping are still expected. Aphids have been checked.

Lettuce is showing frost injury around Los Angeles, necessitating trimming of heads. Size and color of shipping stock are below normal. Imperial lettuce is making half of a normal yield. Size and quality is variable. Some heads are making seed stalks. Some immature stock is going out but efforts are being made to prevent such shipments.

#### WITTE IRRIGATING ENGINES



#### Kerosene-Distillate 2 to 22 H. P

Pump your water with a WITTE. All you need is a centrifugal and my Special Model Kerosene-Distillate Engine. I can lay your engine down at least cost. Save the middleman's profit—Get your engine NOW, while prices are still low. Have reliable power for all your work. Made in standard sizes—2, 3, 4, 6, 8, 12, 16 and 22 H. P. Battery or magneto equipment. I am in a position to offer you the best prices and make immediate shipment. 30-Day Trial—5-Year Signed Guarantee. Largest exclusive engine factory in the world selling direct to user. Cash, Payments, Bank Deposit or No Money Down. Suit yourself as to terms. Don't make a deal until you have investigated my offer.—Ed. H. Witte, President.

#### WITTE ENGINE WORKS

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3101 Empire Bldg., Pittsburgh, Pa.

#### ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

BRENTWOOD IRRIGATED FARMS, In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address  
BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco

#### For Sale

Sour Orange Seed Bed Stock, strong, thrifty, one year plants 8 inches and up. Absolutely free of scale.

#### Walker-Hubbard Nursery Company

SAN FERNANDO, CAL.

Office First National Bank Bldg

#### PLANT TREES

You may have put off planting on account of dry weather. The present showers are tree insurance for any trees you plant now.

#### The Time to Get Busy is Right Now

We have a fine block of stock in each of the following sorts, as well as a general assortment. Trees are in splendid, first-class shape for planting. And we can make immediate shipment.

French Prune and Robe de Sergeant on Myrobalan.  
French Prune and Sugar on Almond.  
Sugar Prune on Apricot Root.  
Cherries—All Sorts.  
Apricots on Peach and Apricot Root.  
Almonds on Peach and Almond Root.

Bartlett Pears on Japanese Root.  
Bartlett Pears on French Root.  
Also Standard Sorts on Both Roots.  
Tuscan and Phillips Cling in Yearlings and June Buds.  
MISSION OLIVES on Picholine Root.  
Figs—Apples—Freestone Peaches—Nectarines, etc.

Submit a list of wants for quotation.  
Mail your list right now to Dept. J

Remember! We will take your Liberty Bonds in full or partial payment for trees.

J. E. Bergtholdt  
Sec. & Mgr.

SILVA-BERGTHOLDT CO.  
NEWCASTLE-CALIFORNIA



Foot-hill grown trees are immune to crown-gall and root-knot

Roots such as are grown only on our foothill soil and location THEY ARE TREE INSURANCE



# THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

## The Tested and Guaranteed Tractor

With An Organization That Stands Back Of It

### An Appreciation

November 8, 1917.

I have been highly gratified by the treatment I have received from all your local and traveling representatives.

Your substantial branch house building first drew me, after which an examination of the machine convinced me that you had yourselves first paid the price in producing a tractor worth selling and now I find that the service which your representatives have so cheerfully and conscientiously given me since buying my Sandusky is the best proof possible of your determination to make The Sandusky Tractor of real value to your customers.

I shall certainly never be afraid to put myself in your hands when looking for farm machinery of any kind.

Very cordially yours,

(Signed) N. J. NOBLE.

(Address furnished upon request.)

Mr. Noble's letter reproduced herein carries a worth-while message to the man who is thinking of buying a tractor. An examination satisfied him that we had "first paid the price in producing a tractor worth selling." Our free service, he adds, "is the best proof possible of your determination to make The Sandusky Tractor of real value to your customers."

Last, but not least, Mr. Noble says: "I shall certainly never be afraid to put myself in your hands when looking for farm machinery of any kind."

There are thousands of Sandusky Tractor users who are just as enthusiastic about, and as appreciative of, the ideals that our President, Mr. J. J. Dauch, started striving for more than fifteen years ago.

First, to satisfy himself on his own work that he had a tractor "worth selling," and then standing back of it in such a way as to make it of

### "Real Value To The Customer"

This same spirit has been developed throughout the entire institution, from the engineers and mechanics in the factory to the men in the field, including the many dealers who are now establishing Sandusky Sales Rooms and Service Stations throughout the country under our policies and guidance.

Both the 10-20 Model J and the 15-35 Model E Sandusky Tractors are tested and guaranteed—tested through years of practical experience in the field and guaranteed by an organization capable of fulfilling its guarantees—one of the oldest exclusive tractor manufacturers in the country.

Our booklets "Power On The Farm," issue J-74 covering the 10-20 Model J, and issue E-74 covering the 15-35 Model E Sandusky Tractor, cover in detail their excellent design, high-grade construction and exceptional abilities.

Write for either or both copies today. Outline your local conditions and requirements fully so that we may know whether your land is adapted to power farming and if so, what tractor to recommend. Our recommendation is an UNQUALIFIED GUARANTEE OF SATISFACTORY OPERATION. We give you an opportunity to TRY IT ON YOUR OWN WORK, and back this up with the only GUARANTEED FREE TRACTOR SERVICE plan in existence. Write today.

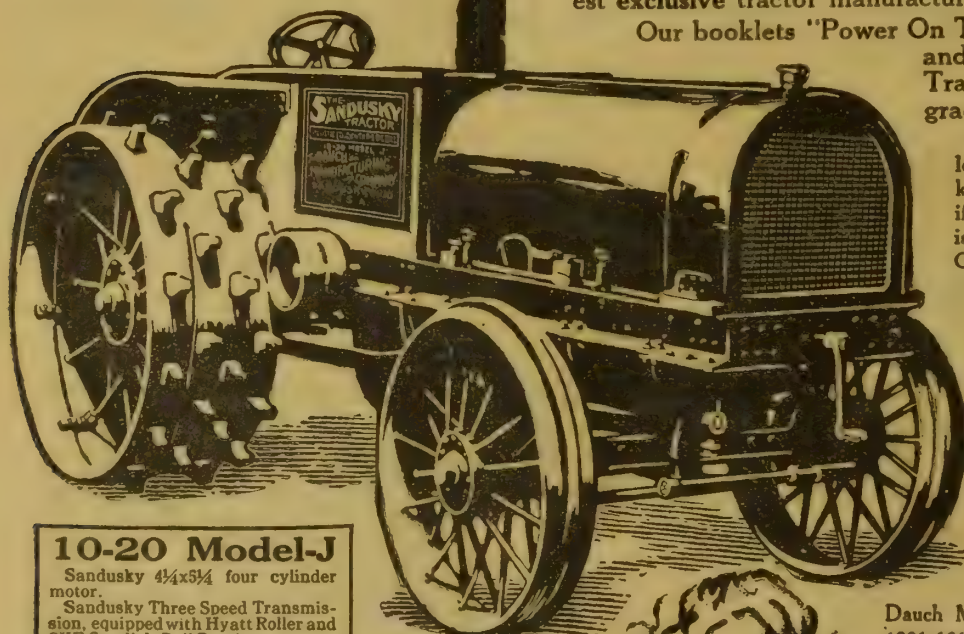
### The Dauch Mfg. Company

Sandusky, Ohio, U. S. A.

Los Angeles, Calif., Branch:- 126 N. Los Angeles St.

Principal Factory Branches: Bloomington, Ill.; Lincoln, Neb.; Fargo, North Dakota; Sioux Fall, South Dakota; Lewistown, Montana; Wichita, Kansas; Los Angeles, California; Sacramento, California;

Dauch Mfg. Co., of Texas, Dallas; Export Office, 42 Broadway, Rooms 1001-1010, New York City.



### 10-20 Model-J

Sandusky 4½x5¼ four cylinder motor.

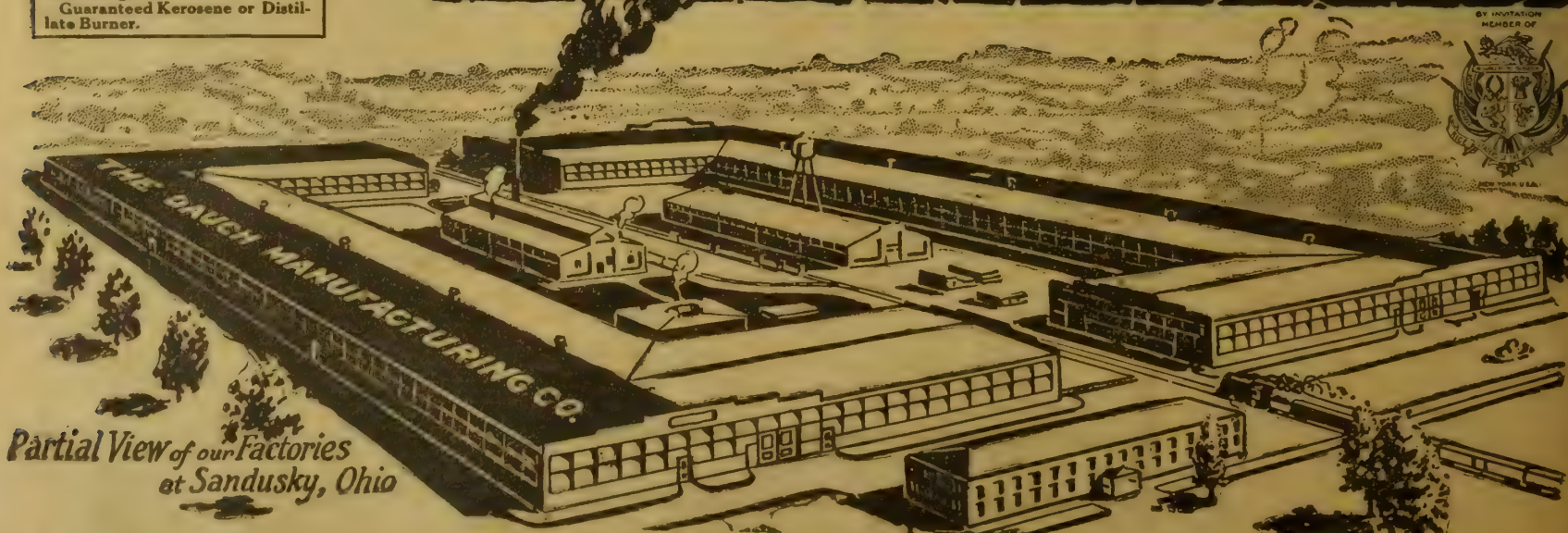
Sandusky Three Speed Transmission, equipped with Hyatt Roller and SKF Swedish Ball Bearings.

Famous Timken Worm and Gear Drive—direct on low.

Wheel base 76 inches; weight, 4,080 pounds.

Protection throughout against sand and grit.

Guaranteed Kerosene or Distillate Burner.



Partial View of our Factories at Sandusky, Ohio





# CALIFORNIA CULTIVATOR

*THE LIVESTOCK and DAIRY JOURNAL*

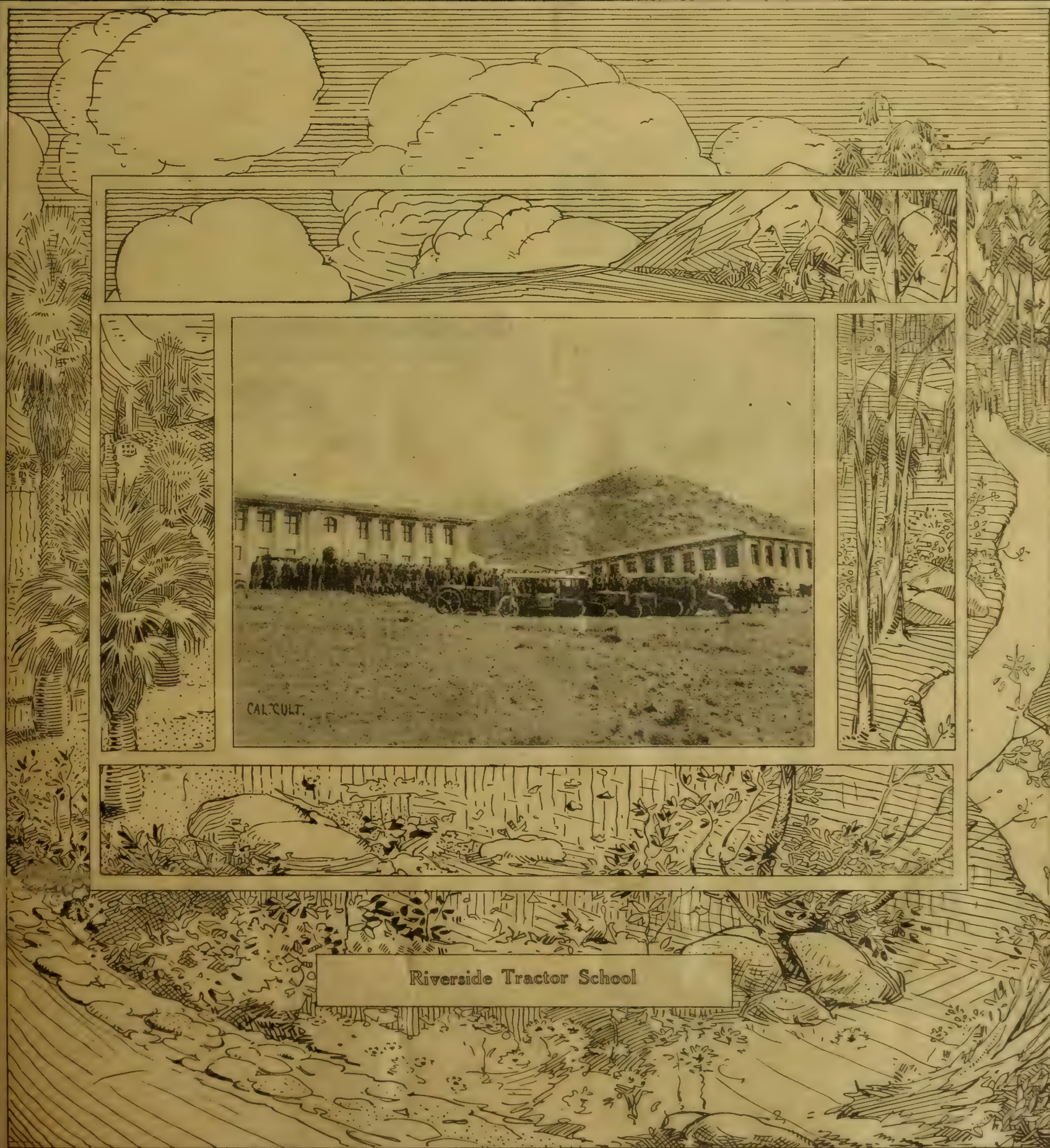
An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

February 23, 1918

SAN FRANCISCO



Riverside Tractor School



## TEAGUE QUALITY CITRUS TREES

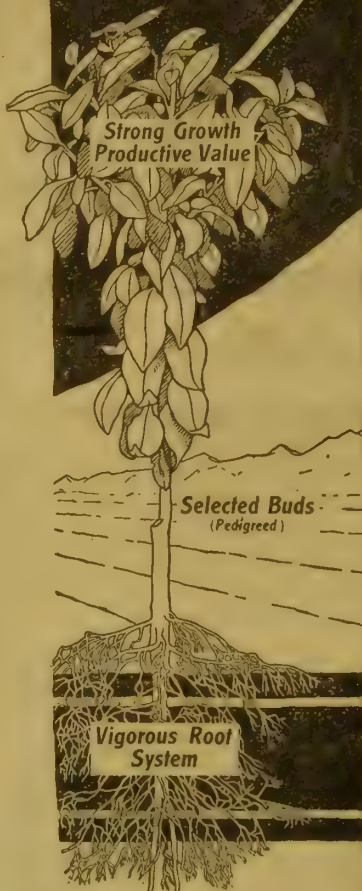
AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

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This simple attachment spreads all kinds of straw—does a real job. Spreads it uniformly, heavy or light, as you desire.

It has this big advantage—it handles perfectly the heavy, partly rotted straw found in the bottom of straw stacks.

One man can load and operate it. Only two levers—one lever puts both beaters in and out of gear, the other regulates the quantity.

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**TEST SPECIAL is Guaranteed  
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Farmers and  
Growers

## "Right-About Face" with FULL POWER!

Remarkable Performance  
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BEFORE you write out your check for any tractor, note how the Bean TrackPULL turns right around into the same row with tools down deep all the way, without pivoting, or overloading one side of the tractor, or doing anything else that is injurious, or difficult, or that a tractor shouldn't do. Note how this tractor takes its turn with its full load, just as easily at it takes the same load down the straight-away. Note the reason for this in this tractor's single track with which it pulls and you steer. See how easy it is to steer, and how that great PATENTED SINGLE TRACK FEATURE also makes the TrackPULL Tractor as flexible as the best team you ever had.

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"Almost Like  
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"Mine acts like it understood—almost animal intelligence," is the way one man puts it—and you'll want that, too, in a tractor. For ease of handling, as well as the ability to make right-about-face turns with full power, has got to be in the tractor you use in an orchard or vineyard or in the field, where there's a lot more than just straight-away work to do.

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Send right now for the Bean TrackPULL catalog, learn the price of this great machine, and get the name of the nearest factory-agent who will demonstrate how the Bean TrackPULL Tractor does the kind of work that's waiting for it on your place. Mail us this coupon, now before you forget it. Find out the truth about tractors right now!

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Please send Tractor Book with full information about the Bean TrackPULL Tractor.  
Name .....  
Street .....  
City .....  
County ..... State .....  
No. of acres ..... Kind of crops grown .....



# California Cultivator

Vol. L, No. 8

LOS ANGELES: February 23, 1918

One Dollar Yearly

## Tractors Tractable and Teachable

Likewise Drivers and Would-Be Drivers Learn as to the Likes and Dislikes and Details of the Insides of the Machines. Men and Women from San Diego to Santa Rosa and Connecticut and Kansas to the Pacific Enrolled at Riverside Tractor School.

### Editorial Correspondence



**Q**UESTION: What do you mean by alternating current, and—what is electricity anyhow?" That and numberless other questions reminded me of the little old red school house days back in old Ohio when we used to snap our fingers

a corps of efficient tractor men from factory and salesroom of eight different makes of tractors; Bean, Best, Cleveland, Holt, International, Sampson, Waterloo Boy and Yuba, make up a most efficient educational force.

I am tempted to write; "It's the biggest ever," but will refrain. However, there are 210 registrations and every

each tractor supplied by the manufacturer. All the class gather in the lecture room of the citrus experiment station at eight o'clock each morning. The lesson starts with lecture, one and one-half or two hours, by Prof. Davidson. He is aided by charts, drawings, photos, magnetos, engine parts and, in fact, whole tractors, and occasionally by a good story. All units are in this one class. When Professor Davidson has finished the units are taken in hand by the factory instructor on the tractor. Various parts of the machine, its principles, manner of handling, are all explained. There is no "talking shop," no sales are being made or attempted, but the how of tractoring is given. It's an operator's course and has no more

of shop work or mechanics than is necessary to make an efficient farmer operator.

The university men all speak highly of the spirit shown by the representatives of the various tractors. They are teaching tractoring and not "my particular tractor."

Then comes luncheon. As the station is some two or three miles out from Riverside, the cold school lunch or "bite" suffices.

At one, sharp, class convenes for another lecture, then more practical work with tractor, or, as on this, Wednesday afternoon, Prof. L. J. Fletcher gives field talk and demonstration of the dynamometer and explains how the layman may determine as to horse-

Continued on Page 231



Coming Down the Line

The tractor with dynamometer is making its test of horsepower requirement. Class lined up on either side with stop watches and notebooks ready for computation.

and preface our questions with "Please may I speak?" For nearly every question asked at the tractor school at Riverside was prefaced with "Question—What, etc.," and be assured "Question" brought quick and satisfactory answer—unless possibly the occasional unanswerable.

It is a really truly school. Professor J. B. Davidson of the University Farm at Davis is master. L. J. Fletcher, R. B. Lundy, R. S. Vaile and

fellow—or lady, for there are eight—is on hand with pencil and notebook. There have been two other schools in this state, at the University Farm. The last, which was the largest, had an enrollment of 187 for two weeks. Arizona and Colorado are scheduling schools which may be large, but when they beat 210, they will have a large school.

The class is broken up into eight units; about 25 in each unit, one for



Explaining Use of Dynamometer

Tractioneering class in the field computing horse power required to pull two bottoms through experiment station soil. The plows are connected with the tractor by the dynamometer attachment, and Prof. L. B. Fletcher, instructor in agricultural engineering at Davis, is showing class how to make the computation.

## Cauliflower Profitable



**A** GENUINE surprise is in store for the dairyman, the orchardist, the small fruit grower, or anyone who has been farming along the older established lines, when he takes a look into some of California's specialized productions. California is a

wonderful state in opportunity for the farmer who believes in diversification. It seems to be even more wonderful in the possibilities which it offers to the specialist. We believe there are even more farmers engaged in specializing in California than in any other state in the Union. There is the mushroom

Compton, Los Angeles County, Growing Hundreds of Acres. Shipped to Eastern Centers Cooperatively

grower, the asparagus grower, the breeder of pure bred live stock, the grower of raisins, of prunes, of cherries, and so on through the entire range of food crops of the world.

One of the newer of these special crops is cauliflower. The photographs on this page give a better idea than

we can give otherwise, but here are a few notes to add to the interest:

The place is Compton, chosen because it is proving a producer of wonderfully fine cauliflower. The crop is handled cooperatively, almost entirely. In the association, the California

Continued on Page 250



One of 57 Varieties

This is evidence of the labor shortage. The Heinz Pickle Works' plant is immediately behind the camera as view is taken, and this great pile is surplus over what the works is handling. The men are removing outer leaves from the heart or edible portion. The casks are filled with two grades of cauliflower, only the very finest being used under the "57" brand.



Saved for Seed

Here is a head of cauliflower which is not going to market. As noted, the leaves are pushed back to give a view of the hard, compact, fine-grained cauliflower. It is not abnormally large, but its quality is the highest. Ideal cauliflower must not only be compact and white and hard, but the leaves must gather together over the top to prevent staining, or weathering, of the edible portion. In other words, it must be kept almost a pure white.



# Farm for Profit

## and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

### MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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### THAT REALLY PROTECT

FITTED WITH GALVANIZED WIRE TIES WHICH GO ALL THE WAY AROUND THE TREE

10 Inch.....\$ 9.00 per 1000	18 Inch.....\$12.50 per 1000
12 " ..... 9.50 " "	20 " ..... 15.00 " "
14 " ..... 10.50 " "	24 " ..... 17.50 " "
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WRITE US OR SEE YOUR NURSERYMAN FOR DISCOUNTS AND FREE SAMPLES

### Angelo & Son

398 Bay St. San Francisco

DEALERS: Write us for our sales proposition.

Write  
for  
Catalog  
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Prices



## Citrus Trees

Budded on Sweet and Sour Orange Seedlings. Those budded on sour seedlings are best adapted to the heavier soils. Let us know the location of your land, character of soil and irrigation facilities, and we will be glad to advise you. All trees delivered to customers in the best possible condition. You will find our catalogue of deciduous, citrus and ornamental trees and roses very helpful.

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Address Dept. A Fresno, Cal.

## Buy the Famous, Sturdy Heat Resisting Tucker Franquette Walnut

This walnut is propagated from walnut trees originally imported direct from France in 1871, now grown in Kern County, and is scientifically budded and grafted on native drouth and heat-resisting black root stock. The Franquette walnut brings the highest market price. It is especially adapted to hot interior climate but thrives in any walnut-growing section. This walnut is making Kern County famous.

Write us for prices on Peach, Apricot, Plum, Grape and Citrus Stocks. • Satsuma Plums Formosa Plums and Almonds.

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## Yamamoto Citrus Nursery

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Wholesale and Retail 250,000 Orange, Lemon and Grapefruit Trees 1, 2 and 3 years old. Florida Sour Seedling Stock—300,000 trees one year old. Trees Planted and Guaranteed on Contract.

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## First Class Sour Orange Seed Bed Stock

Grown at Laguna Bell Acres. Stock one year old. 200,000, 8 to 30 inches high, absolutely free from scale. Also first class Rhubarb for sale.

Locke Nurseries, C. H. Harle, Mgr., 27 N. Olive St., Alhambra, Cal.

## Clovers for Cover Crop and Forage



A SUBSCRIBER at Modesto has written the Cultivator for information as to uses of the common white clover and "Indica." This was referred to Prof. Jno. W. Gilmore of the University of California, who answers:

"It is true that in California there are two kinds of so-called sweet clover, and there are several other kinds which are not abundantly grown in this state. These two kinds of sweet clover mentioned also are known under various other common names such as White Sweet Clover, Bokhara Clover, Siberian Melilot and Honey Clover. The yellow flowered kind is sometimes called bitter clover. The principal uses made of these two kinds of clover in California are: for the white flowered kind, green forage, hay and as a cover or green manure crop. The yellow flowered kind is used almost exclusively as a green manure or cover crop in the citrus sections of Southern California. The white flowered kind, to which most commonly the name of sweet clover is given, is a perennial and is adaptable to a very wide range of soils and climates. It is also quite drouth resistant but responds readily to applications of water, and under such circumstances gives an abundance of green forage or pasture. It can be cured for hay but the relative coarseness of the stems prevents the securing of hay of most excellent quality. When fed green or pastured the cattle do not eat it very readily at first but have to acquire a taste for it. After the taste for it has once been acquired it is highly relished and is nutritious. In feeding it green or in pasture one must be careful since it causes bloat-

ing when eaten in considerable quantities. After cattle have become used to it, however, the danger from bloat-ing is somewhat reduced.

"Since it does not produce so good pasture or hay as alfalfa it would seem desirable to grow sweet clover only on those lands upon which alfalfa may not be grown because of poor soil or lack of water. Under conditions, however, of light soils and lack of water, it may be grown with variable success and result in the enrichment of the soil as well as furnishing spring feed.

"The yellow flowered clover, sometimes called bitter clover and technically known as *Melilotus indica*, is an annual and in California is grown exclusively as a cover or green manure crop on those lands where organic matter is decidedly deficient. It grows well, however, along many roadsides and waste places throughout Central and Southern California. It has little or no value as a forage crop, mainly because of the small leaf, abundant stem and other characteristics of its growth. As a cover crop it should be planted early in the fall in order that it may germinate with the first rains, or oftentimes it is planted in the latter part of the summer and germinated by irrigation. When treated in this way it produces an abundant cover early in the spring which permits of early plowing and preparing orchard lands for the summer cultivation and irrigation.

"The seeds of both of these kinds may be secured in the market and that of the indica or bitter clover is relatively cheap in comparison to the amount of green material that it will produce."

## Watching the Pests



S TATE Horticultural Commissioner George H. Hecke is in Southern California looking after citrus matters. Especially is he giving attention to any possible infestation of the dreaded citrus canker. Of course it is known that it is now infesting Florida, nearly all of the Gulf states, especially Texas, and both California and Arizona are dreading its march to the West. As a step in the fight against this pest, Avery S. Hoyt spent several months studying its habits at first hand in Florida and the Gulf states. We have given in the Cultivator some of Mr. Hoyt's findings, with illustrations which were certainly convincing of the deadly nature of the disease.

Now this fight against citrus canker is being somewhat affected by war conditions, that is, through the taking of some of Mr. Hecke's most efficient helpers from the ranks of the producers into the trenches. Mr. Strong, who has been in the Southern California office at Los Angeles will

soon be in the engineering corps. Mr. Hoyt will volunteer for special work, C. P. Claussen, at the head of the branch of the insectary located at Alhambra, has also joined the fighting forces. While the work of the commission is far from being demoralized, it is seriously affected. However, Mr. Hecke is doing his best to keep the remainder of the force in working condition and is making such substitution as is necessary. It is to be hoped that Mr. Claussen, Mr. Hoyt and Mr. Strong will soon again be in the force of the state horticultural commission and aiding in the work of reconstruction.

The work of the state commission is being enlarged almost every day. The new squirrel legislation has given additional work to every commissioner in the state, and some very thorough work is being done in squirrel eradication. It is expected that at the next session of the state legislature more effective weed control legislation will give the commission better control of the weed pests which have wrought such havoc in many sections of our state.

## Refining of Inferior Olive Oils

By W. V. Cruess and C. C. Scalione

The most common defects of poor olive oil are: (a) Disagreeable or "rough" taste, (b) disagreeable odor, (c) dark color, and (d) high viscosity. Usually two or more of these defects are present in the same oil.

A study of Californian oils has been made during the past two years with the objects of determining why they

have not sold as well as imported oils and how the defects of many of the oils of this state might be remedied. The recommendations for treatment given in this article are based on both laboratory and factory experiments and have been well tested. The defects and methods of refining the oils to overcome these faults will be taken up in the order noted above.



**Flavor**

Many olive oils possess what is variously termed a strong "fruity" flavor, a strong "vegetable" flavor, or a "rough" flavor. The cause of this flavor lies in the quality of the fruit used. Such oil is not unfit for table use, but is merely considered a second grade product. It is, however, difficult to sell such oil in normal years.

More serious defects in flavor are those caused by improper methods of manufacture. The most common faults in manufacturing methods are: (a) Fermentation or molding of the olives in bins or sacks before crushing; (b) use of machinery that has not been thoroughly cleaned and which may contain rancid pulp and oil; (c) proximity of pomace piles or other material giving off disagreeable odors; (d) standing of oil too long in contact with the black liquor after pressing; (e) bacterial decomposition of the oil during storage; and, (f) rancidification of the oil because of too long or improper storage. These may all be avoided by the manufacturer in ways that will be self-evident to the experienced oil maker. To discuss this side of the situation adequately would mean a complete dissertation on the principles of oil manufacture. The present publication deals only with the treatment of oils which for the above reasons are of poor quality.

\* \* \*

The writers of the article refer to tests on the treatment of oil of poor flavor with bone black, wood charcoal, superheated steam and other methods and give much technical information as to correcting disagreeable odors, dark color, reducing viscosity, and end with the following summary:

**Summary**

(a) California oils possessing a "rough" or disagreeable flavor may be refined by treatment with bone black, soda ash and water at 180 degrees to 190 degrees Fahrenheit for two hours, followed by cooling, filtration with kieselguhr, and aging several months.

(b) Disagreeable odors may be removed by the same process together with the use of a stream of carbonic gas.

(c) Excessive color is a common defect of Californian oils. It is removed by treatment given under ("a"), or if excessive color is the only defect, by bone black and filtration alone.

(d) "Thickness" or high viscosity is caused by the presence of large amounts of stearin and palmitin. These may be removed by chilling the oil below 32 degrees Fahrenheit and filtration of the chilled oil. The equipment necessary seems too expensive under present conditions, but the process may prove practicable and profitable should the oil industry expand greatly.

**A FUNCTION OF SULPHUR IN FRUIT PRODUCTION**

By R. R. Snowden

An earlier conclusion of the writer's seems to be confirmed by actual experience.

In your issue of July 8, 1916 the writer said: "I have found that a decided deficiency of sulphur in the soil of an orange orchard is inimical to the quantity of fruit rather than the quality. Apparently the fruit tends to lose its power of clinging to its stem, and consequently dropping is more or less in evidence." The 30 acre Navel orange grove of H. E. Gilley near Porterville was treated after deficiency of sulphur was found by analysis of the soil with two tons gypsum per acre and nothing else. Now Mr. Gilley reports that he had

this season 65 per cent of a full crop, while the neighboring groves had but 15 per cent, the loss in each case being due to the prevailing "drop."

Mr. Meaker of Glendale makes the same kind of report on his grove, but he had no drop at all.

**Retarding or Hastening Blooming**

I have found that application of manure in conjunction with a dearth of moisture in the soil will cause an orange tree to bloom earlier; and I hold that the converse must be true. This is a reasonable conclusion, for moisture is conducive to tree growth, while on the other hand whatever is inimical to the prosperity of the tree will stimulate the function of reproduction.

In accordance with this conclusion the groves should be kept moist to retard blooming so as to escape the belated frost which we are so apt to have yet.

**SIZE OF FARM BUSINESS**

The number of acres is an important factor in the size of the farm business. Notwithstanding all that has been said and written on the advantages of the small farm it is generally true that a fair acreage in crops is one of the essentials in securing adequate size of business. This means the land on which crops are planted and harvested during the year. The large size of farm does not indicate that a man is doing a large business.

It is the land that is actually being used which has an influence in increasing the volume of business. The size of the crop area which is most profitable will vary with the type of farming done. And it must be remembered that the arguments in favor of large size of crop area do not conclude that all farms should be large or of one size. Men vary in their capacity to manage land. Also, some men prefer to operate a small farm at less profit, than a large farm at more profit.

Of course, everyone knows that the crop area of a farm might be increased to the point where it would be no longer profitable. It is apparent that the farms having large crop areas have a better opportunity to utilize labor profitably. Many of the same operations are required in preparing for planting, tilling and harvesting a small area as for a larger area. Also, the small area often requires more turns in working the field in proportion to the larger area. Then, the machinery requirements are usually higher per acre on the smaller area. All these items enter into a higher cost of producing crops. To a certain extent, therefore, the advantages are with a large crop area.

The Stanislaus Fig Growers' Association in its recent meeting at Ceres elected Walter Case president and J. W. Buck, secretary-treasurer.

**FUMIGATING OF NURSERY STOCK**

Fumigation of nursery stock as a means of pest control is becoming recognized in California as an economic proposition. It is one of the best known methods of destroying woolly aphids scale pests and other injurious insects. If handled properly it does not injure the stock or affect its growing qualities. We recommend that the nurserymen in California give serious consideration to this method of pest control. If nursery stock is treated at point of origin and a certificate of fumigation sent with each shipment, we believe that the satisfaction of customers, the reduction in condemnation at point of delivery and the assurance that the fumigation is done properly will more than pay for the cost. Fruit growers should be willing to pay extra for fumigated stock for it gives them a reasonable assurance that they will have no infestation of scale or woolly aphids.

**PRETTY TIGHT PLACE**

A stingy millionaire in New York was solicited to contribute toward raising a statue to Washington. The miser refused with the excuse:

"I keep Washington always in my heart."

"Well," replied the indignant applicant, "I don't believe the father of his country ever got into such a tight place as that!"—Pittsburgh Chronicle Telegraph.

**BEST IN THE LONG RUN**

*World Standards*  
*Wheat -*  
*Gold -*  
*&*  
**GOODRICH**  
**TESTED TIRES**

**A** wheat is the standard and measure of food, and gold of money, so Goodrich Tested Tires, are the standard and measure of tires the world round. Wherever you see that name and trademark on a tire, you can be sure you will get maximum service in that tire, backed up by the good faith of the maker.

In the purchase of any product, experience dictates you put your buying faith in a standard brand. It safeguards you from deceiving appearances. Nowhere are appearances more deceiving than in tires; and your best protection is Goodrich, the name which for a half century has stood for the best in rubber.

Whether you need an automobile tire, large or small, a tire for your truck, motorcycle or bicycle, trust the trustworthy brand of Goodrich. You are sure of the service because it is a service proved the nation over by Goodrich Test Car Fleets. The teeth of the roads of the nation have gnawed at Goodrich Tires and the tires, fighting back, conquered with phenomenal mileage.

Get Goodrich pneumatic tires for automobiles, motorcycles, or bicycles, and get the greatest tire strength and mileage for your money.

Get Goodrich Truck Tires and you get truck tires that in actual test have outworn steel. Trust in the Goodrich brand, and you will save time and money, and gain comfort by it.

**THE B. F. GOODRICH RUBBER COMPANY**

**THE CITY OF GOODRICH · AKRON, OHIO.**

Where You See This Sign  
Goodrich Tires are Stocked

Ask Your Dealer for Them



# SPRAY

**For Big  
Crops  
of Good  
Fruit**

**and Spray with a  
BEAN POWER SPRAYER**

*It Pays to Clean Up Your Trees*

Scaly, moss-covered trees may pay fair profits—but they can never bring you the full returns you can get from trees that are clean and healthy.

## RIGHT NOW IS THE TIME TO DO THE WORK

- If you haven't a good Sprayer—get a Bean—
- the Sprayer with non-sticking, non-rusting, troubleless bell metal ball valves.
  - the Sprayer with the Patented Pressure Regulator which automatically maintains any desired pressure.
  - the Sprayer made without stuffing-boxes in the pump—and hence, without stuffing-box troubles.
  - the Sprayer with porcelain-lined cylinders—proof against injury by any spraying liquid.
  - the Sprayer with eccentrics instead of cranks.
  - the Sprayer with the Novo Engine—the simplest, sturdiest, most efficient little engine on the market and unsurpassed for sprayer use.

### Bean Sprayers Made in all Sizes

Send for Our Complete Catalog of Hand and Power Sprayers, Spray Hose and Accessories. Ask for descriptive literature of Bean Giant and Pony Spray Guns. Send the coupon—now. Also, see your nearest Bean dealer. We have representatives in all fruit-growing sections.

## Bean Spray Pump Co.

212 West Julian St.

San Jose, Cal.

Bean Spray Pump Co., 212 West Julian St., San Jose, Cal.

Gentlemen: Please send me your catalog and information on Power Sprayers Hand Pumps Spray Materials

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Insure your profits. Give your land plenty of water independent of the rains.—AND—Let Hercules furnish economical power for pumping. Don't Wait—Write or call.

Submit your pumping problems to us.

DEALERS: We have a very liberal proposition for unoccupied territory—write us.

Land will only produce  
LARGE AND PROFIT-  
ABLE CROPS when suf-  
ficiently irrigated.



**SMITH-BOOTH-USHER CO.**  
The Pump and Engine House of the Pacific Coast  
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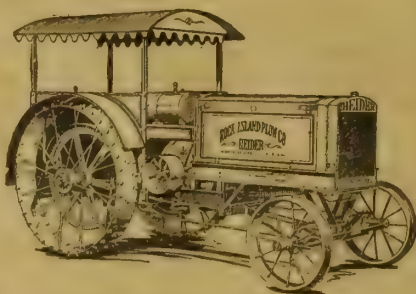
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## HEIDER One Man TRACTOR

Two sizes, 12-20, 9-16. Simple friction transmission. Lowest cost of upkeep. Smallest fuel consumption. Has power for all needs.



## For Sale

Sour Orange Seed Bed Stock, strong, thrifty, one year plants 8 inches and up. Absolutely free of scale.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

## Land Settlement in California

Commission Selects Tract Near Chico, Butte County. Hundreds of Prosperous Farms Will be Built

**T**HE last session of the state legislature made appropriation of \$10,000 for the expenses of maintaining the land settlement commission and enabling it to make a trial of the Australian method of subdividing tracts of land into small holdings, not exceeding probably 100 acres and selling this land to bona fide farmers on long time payments at low rate of interest, thus building up the state and giving farmers a chance to farm on a basis which gives a living chance for success. With this appropriation was another and greater, for \$250,000, to be used in financing the movement.

Northern California has the honor of furnishing the first land, description of which is given to us by Dr. Elwood Mead of the commission. Dr. Mead writes:

"Our board has bought 6000 acres of land near Chico. It is a part of the Stanford University lands and the Lott Ranch, both tracts being parts of an old Spanish grant. Owing to the refusal of these two owners to sell or subdivide, these lands have been held intact while the country adjacent has been subdivided, closely settled, and is highly developed. Chico is only six miles away, reached by two highways, one being the state highway, so that the people on this tract will have the advantage of a state normal school and excellent high schools. We hope to secure the establishment on the tract of an agricultural school under the vocational training act. The Northern Electric railway crosses the land; the state highway and Southern Pacific adjoin it. One gravel road crosses it east and west; another one is to cross it north and south. A part of the land now leased rents for \$20 an acre. A part of it is in crop and a considerable part has been levelled and is ready for irrigation. The price paid was \$100 an acre. That includes land, water rights and improvements. It will be sold on conditions which will simply enable the state to receive back the money loaned to help this development, and that means that the people will get the land at far better figures than any private subdivider could give. The terms will be 20 years time on amortized payments, the interest being five per cent, payment on the principal three per cent, so that the settler who pays eight per cent per year will get his farm free of all encumbrances. The same interest will be given on money to help build barns and other improvements. If a settler wants a longer time he can obtain it by securing a loan from the federal land bank, but it is not believed that settlers will need a longer time on these lands.

"The applications on file insure a demand for much more land than the state can furnish in this settlement or with the appropriation made by the last legislature. It means that there will be not simply a few, but hundreds, of men equipped by character, experience and money to succeed and to build up fine communities in this state and increase our production immediately, but which we will have to turn away because the board has not the funds with which to meet the initial payments on land and give the help which the act provides for promptly equipping the farms.

"That is only half the story. There was offered the state a considerable number of tracts of land admirably suited to closer settlement. They ran all the way from Siskiyou County to Imperial County. The three tracts which the board finally considered, which the experts of the University declared suited to the purposes of the act, would all be successful communities if subdivided and sold under the act's conditions, and the board believes the kind of organized community development which this act provides for is the type of development which this country, and especially California, needs, and that it is unfortunate that it is not in a position to extend the area so that settlements could be car-

ried out on all three tracts, because there is every reason to believe that suitable settlers for the entire area of all three would be ready to utilize these opportunities."

With his letter Dr. Mead encloses the following circular which the board is sending agricultural engineers and others interested in rural organization and advancement:

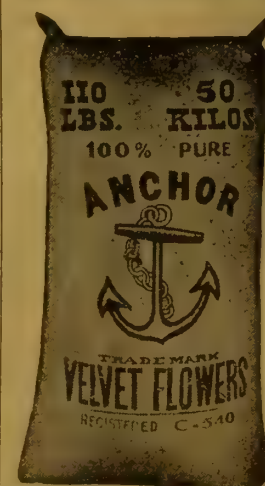
One of the most important of the board's duties is the preparation of plans for farm houses and farm buildings and for the grouping of these buildings. We wish in doing this to mobilize the experience and knowledge of this country and hope that we will have the cooperation of all who are interested in making rural life more attractive, so that nothing which will contribute to the success of the state's plan will be overlooked. The cost of these houses will range from about \$800 to \$1000 for farm laborers' houses, up to \$3000 for farm houses. Within these limits of cost we wish to erect homes which will be convenient, sanitary and have something of beauty. Wood is the cheapest material in California, but it is not believed that the cost of concrete and masonry construction is prohibitive.

The farm buildings will include hay sheds to hold 100 tons of hay; dairy barns for 10 to 30 head of cows; houses and sheds for hogs up to 200 in number; and sheds and shelters for sheep up to 500. The climate of California is an open one, with no freezing weather but with considerable rain. Farm buildings will be erected to conform to these climatic advantages.

In pursuance of its plan, the land settlement board solicits contributions of photographs of farm houses and farm buildings, pamphlets giving plans and estimates of farm buildings and references to investigations or reports on this subject. The board hopes, with the interest and assistance of the public, to make these farm colonies of California an illustration of what can be done, by preliminary study and organization, to lessen the expense and increase the attractiveness and profit of rural life.

The California Associated Raisin Company guarantees present prices of raisins to August 1.

## SULPHUR



Fleur de Soufre  
Anchor Brand,  
Velvet Flowers of Sulphur and Eagle Brand.

Packed in barrels and double sacks are the finest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVENING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

SAN FRANCISCO SULPHUR CO.  
624 California St., San Francisco, Cal.

Highest Quality of  
Citrus and Deciduous Nursery Stock

at the Lowest Prices

## SUSAN'S NURSERY

Del Rosa Heights

P. O. Highlands, R. R. No. 2

Home Phone 8233



**TRACTOR SCHOOL**  
Continued from Page 227

power required, or being used, to propel the three 12 inch bottoms.

Or perhaps Prof. Lundy demonstrates babbitt pouring, or pipe fitting, or soldering, or general overhauling of a tractor.

Then another "recess" (with the accent on the re) and all break for town. After dinner all gather in Poly auditorium and listen to address by Dean Hunt on "Agriculture in Canada," or by Prof. Vaile on "Irrigation," or other practical talk, till every attendant is ready for bed.

Two high school classes with teachers have transferred their week's work from Pomona and Ontario High Schools to this school. A Connecticut visitor in California is taking advantage of the opportunity, and two Kansas men delayed return home a



Prof. J. B. Davidson  
Prof. Davidson was in charge of the tractor school at the citrus experiment station. He is professor of agricultural engineering at the university farm school at Davis.

couple of weeks to attend this school, so with attendants from nearly all California the "graduates" of this institution will have wide influence on agriculture.

Request has been made for continuance another week, but that probably will not be. Within another year another will be held however, for the interest shown here is proof of its worth.

**AGAINST THE BORER**

In a communication from Sacramento we note: "Methods for inspecting all deciduous fruit nursery stock grown in Alameda, Santa Clara, San Benito, Monterey, Santa Cruz, San Mateo, Napa and other counties, where the peach tree borer, a native pest, is found, were outlined recently in a resolution adopted at a meeting here of county horticultural commissioners, nurserymen, fruit growers and state officials.

"The action grew out of a difference of opinion which developed between county commissioners and nurserymen as to the method of procedure, to guard against the spread of the pest. The resolution was presented at the meeting by a committee appointed by Geo. H. Hecke, state commissioner of horticulture.

"It provides that two inspections shall be made by county commissioners prior to shipment of nursery stock and that a final inspection shall be made by the county commissioner at the point of destination, at least two weeks after the shipment has been dispatched. It is further provided that all shipments shall be rejected in the final inspection where there are five or more larvae on the roots or where the stock is two per cent or more infected."

# L. A. Auto Tractor Attachment

**With Enclosed Gear and Perfected Cooling System**

The L. A. Tractor Attachment is an established success, having performed all kinds of farm work, and placed itself through sheer value as the cheapest tractor unit to buy, and operate, on the market.

It has proven its ability to do the work of three or four horses in any soil.

Repeated tests show that in plowing, harrowing and all farm work our tractor will accomplish three to four times the work of your horses.

At slight additional expense, depending on make of car, the L. A. Attachment can be fitted to other cars besides the Ford.

**ENCLOSED GEARS:** The greatest improvement in tractor attachments since their inception is the enclosing of the driving gears, an exclusive feature found in the L. A. Tractor Attachment only. The wheel is cast with a solid web in the



**Price \$275 f. o. b. Los Angeles**  
Including cooling system, new high efficiency tractor radiator, high duty fan, and automatic water circulator.

L. A. Auto Tractor Co.,  
Los Angeles, Cal.  
Gentlemen:—I am more than pleased with your Tractor Attachment and was certainly surprised at the power it developed when attached to a Ford.

It will easily pull anything that 4 to 6 horses will. I would advise the same tools that four horses are used on.

I know one man who has used your attachment through one season on a second-handed Ford and up to the present time has had no trouble, either with the Ford or the Attachment. At that rate I could afford to buy a second-hand Ford every year. It will not hurt the car any more than if it were used on the road.

For a cost of about \$50.00 I had an extra pair of Pinions made to fit a Mitchell car, and now I can use it on my Ford or the Mitchell as I choose.

I am very much enthused over the Attachment. Very truly,  
(Signed) PHILIP H. HAYES, Cupertino, California.

center, and the ring gear is made with a ledge against which the felt lined dust shield bears, retaining the oil and keeping out all sand and grit. Gears protected in this manner from dirt and well lubricated will last indefinitely. Open gears cannot last, no matter how good the material. This has been proven hundreds of times.

**THREE POINT SUSPENSION:** Our method of attaching to the Ford axle is on the true three point suspension principle which maintains the gears in perfect running alignment at all times, regardless of the irregularities of the surface of the ground or when crossing furrows at any angle. There is no strain on the car, as is the case when one part is attached to the Ford axle and the other part to the frame.

Do not confuse the L. A. Tractor Attachment with any other. There is a vast difference, in the principle and in the quality of the machine. The L. A. Auto Tractor Co. are the originators and patentees of this attachment.

**Big Opportunity for Live Agents** **Catalog and Further Information Mailed on Request**

## L. A. Auto Tractor Co.

**52nd Street and Santa Fe Ave.      Telephones: South 1600    Home 29347    Los Angeles, Cal.**

# Olive TREES



**Well Rooted**  
Insure You a Uniform Orchard

Roeding's "true trees" are scientifically grown under ideal climatic and soil conditions. Whether you are going to plant an Olive, Citrus or Deciduous orchard, you rightly want the best trees.

**Write for 96 Page Book**  
Tells all about preparation of soil, planting, pruning, irrigation, best trees to grow for home or commercial purposes. It is the largest, most interesting and practical book on horticulture ever published for FREE distribution on the Pacific Coast.

**Varieties**  
The three most commonly planted varieties of olives are: Mission, Manzanillo and Ascolano. The Sevillano, or better known to the trade as "The Queen," is also a favorite with some.

**Demand**  
The demand for California Ripe Olives and California Olive Oil more than keeps pace with planting. A much larger acreage in this state should be planted at once if we are going to supply the trade.

**Fancher Creek Nurseries**  
211 Holland Building  
**Fresno, California.**





## Big-Scale Harvesting

ONE of our customers, who realized that his opportunity had come for cutting out a lot of the old delays, worries, and high costs of his yearly harvesting, invested in a **Deering Harvester-Thresher**. This letter of his describes the good average experience:

American Falls, Idaho, Aug. 23.  
"The Deering Harvester-Thresher, purchased from the International Harvester Company, has proved very satisfactory, having cut about 150 acres, averaging about 15 acres per day, with but one man, cleaning and saving the grain better than any thresher I have operated. The machine is very economical, being the cheapest way of harvesting I know; the same is true of the cost of help. The saving in my thresher bill for this year will more than pay for the cost of the machine; in addition, a great saving of work in the house has been made, and in the feeding and help that is required for the old-time way of harvesting.

Yours truly,  
Martin Garn."

Do your harvesting and threshing in one operation, turning the old unnecessary threshing expense into clear profit, saving time, doing away with the risks of long-drawn-out harvest. Own a **Deering Harvester-Thresher** for this year's harvest. Let your threshing-bill saving pay for it. Write for folders.

### International Harvester Company of America

(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.  
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah  
San Francisco, Cal. Spokane, Wash.

## The Evolution of Irrigation



Just as the Open Irrigation Ditch was superseded first by wooden, and then by concrete flumes, so were the latter in turn forced to give way to the "K-T SYSTEM" of underground conduits, equipped with gates and valves. This provides for a perfect distribution of the water at the exact spot required, and at just the time it is needed. It also eliminates the constant losses resulting from evaporation, seepage, and ditch choked with weeds—wasting land, water, time and money.

Write today for our Special Booklet,  
which gives complete detailed information.

**KELLAR-THOMASON CO.** 1226 East 28th Street  
Los Angeles, Cal.  
"Originators of the Valve System of Irrigation."

## Save Your Crops

The labor of an entire year may be swept away by one night of frost. Save your crops by installing the

### "Bolton" Orchard Heater

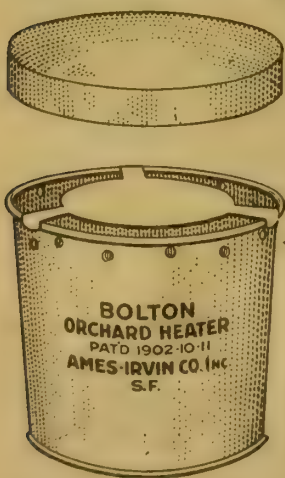
Burns cheap fuel oil. Can be lighted quickly. Produces maximum heat, evenly distributed. Burns a long time on one filling. No waste—you light only as many as required to keep desired temperature.

SEND FOR BOOKLET "C"

Tells you how to save your crops the Bolton Way. Filled with valuable frost prevention information.

### Ames-Irvin Company

Irrigation Pipe, Orchard Heaters, etc.  
8th and Irwin San Francisco, Cal.



# LIME

Pulverized Limestone.....\$3.35 per ton  
Ground Limestone.....\$2.50 per ton

This is the One Element Lacking in Most California Soils. Write for Booklet  
**Riverside Portland Cement Co.**  
640 Title Insurance Bldg., Los Angeles, Cal.

Make the reading of advertisements in the California Cultivator a habit.

## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Treating Cloth with Oil

Please tell me how to prepare a solution to use on muslin for cold frames to make them rain proof and prevent mildew and rot. Should it be applied with a brush or should the cloth be dipped in the solution?—Subscriber.

There is no satisfactory treatment for cloth. That is, if oil is used it is hardened and is liable to "burn," though it does effectually prevent mildew. Treating with creosote, which is an effective remedy for mildew, is rather expensive. Where the cloth is over a frame and not in danger of breaking from handling, raw, hot linseed oil is used. We have seen canvas stretched and treated with hot oil which makes an excellent roof, even shedding rain, and will last several years. Have the oil only hot enough so it will penetrate. If boiling or especially hot it will scorch and destroy the cloth.

### Home Made Peanut Butter

Please tell us how to make peanut butter at home in a small way.—Subscriber, Garden Grove.

The ordinary home food chopper is very satisfactory, running peanuts through first with a coarse knife then with the fine meal or paste knife.

### Paste for Labels

What is the best paste when used for pasting labels on honey cans?—Subscriber, Hemet.

As a rule ordinary flour paste is used. However here is a formula in "Successful Canning and Preserving" as given by Powell and published by the Lippincott Company, Philadelphia: One cup flour, one teaspoon powdered alum, one cup cold water, one-half teaspoon oil of cloves, three cups boiling water. Mix flour and one cup cold water thoroughly. Add boiling water and bring slowly to boiling-point, beating all the while to prevent lumps. Boil for five minutes. When cooked, add the alum and oil of cloves, pour into glasses with covers.

### Coating for Orchard Heaters

What is the best coating for orchard heaters or fire pots when stored away for the summer?—Subscriber.

This question was referred to James D. Culbertson, assistant manager of the Limoneira, Santa Paula, and he answers:

"To protect the bottoms of our oil pots we have adopted the policy of dipping them in hot asphaltum after thoroughly cleaning off all old paint or asphaltum and dirt. Rust spots are carefully scraped and inspected before dipping. This gives a thick, heavy coating, impervious to moisture, if well applied. The pots are dipped in this hot asphaltum to a depth of about three or four inches. Above the asphaltum dip we paint them with orchard heater enamel which we have been purchasing through the Supply Company. It is more expensive than an asphaltum paint such as we might make with distillate and asphaltum, but very much more durable in the sun and rain. It is also more nearly fireproof, though we have found no paint that will withstand the heat where the pot approaches a red heat. This enamel may be applied either hot as a dip, or with a brush. A slight

warming improves its spreading qualities when being applied in the latter way. Before dipping pots into the hot asphaltum we first scrape from the bottom the previous year's coating, only removing the roughest of it in this way. Then we place the pot for a minute or two over a burning pot to burn off the remainder of the paint, and heat it well for the dipping. A hot pot dips much better than a cold one."

### Concrete Fence Posts

Are concrete fence posts a success? Are there any bulletins published on the subject?—Subscriber.

Concrete fence posts have proven completely successful, the only objection being the cost, but length of life of the concrete posts considered, the cost is perhaps lower than for wooden posts. There have been bulletins published on this subject. Write U. S. D. A., Washington, D. C., for Farmers Bulletins 403 and 481. Also write to Portland Cement Company, 111 West Washington Street, Chicago, for bulletin on Concrete Fence Posts.

### Feed for Balancing Hog Diet

What food when mixed with corn would give the best growing results for small hogs?—Subscriber, Julian.

Alfalfa will be the best. Also to balance your corn you could use skim-milk, tankage, restaurant and hotel wastes. See articles by J. M. Bomberger of Green Gold Ranch, in the issues of May 11 and June 15, 1917, of the California Cultivator.

### Milk Substitute for Calf

What good mixed meals could be used as a substitute for milk to feed very young calves?—Subscriber, Escondido.

There are many excellent calf meals on the market which many of our subscribers have found satisfactory. "Feeds and Feeding" by Henry and Morrison gives the following as substitutes for milk: "Several different concentrate mixtures have been used with more or less success as substitutes for milk in calf feeding. While carbonaceous grains are better supplements to skim-milk than are concentrates rich in protein, substitutes for milk must supply an abundance of protein, as does milk itself. At the Pennsylvania Station Hayward fed calves whole milk for seven to ten days and then gradually substituted a home-mixed calf meal consisting of 30 parts wheat flour, 25 parts coconut meal, 20 parts skim-milk powder, ten parts linseed meal, and two parts dried blood, the mixture costing about three cents per pound. One pound of the mixed meal was added to six pounds of hot water, and after stirring for a few minutes, cooled to blood heat before feeding. With careful feeding the calves receiving the calf meal made as good growth as others fed skim-milk. Hayward points out that calves raised upon a milk substitute should have warm, dry quarters as they are apt to be less resistant to disease than milk-fed calves."

### Rabbits not Breeding

What is the matter with does that will not breed? The fault is not with the male, for I have bought a new one of entirely different stock, still no results. Does in good condition, not too fat, plenty of green feed, dry alfalfa, bean straw, and beet tops. No grain



for nearly a year. Oldest three years old.—Subscriber, Anaheim.

Does overfed will often fail to produce young. If your rabbits are not too fat and your bucks not barren specimens, then try the following system: Forced matings are rarely successful. If does continue to refuse the buck, leave them (one at a time with him) over night in a hutch that has previously been occupied by a buck and feed soaked peas. This will help to produce the desired results. Never permit the buck to be placed in the hutch of the doe, but put the doe in the buck's hutch, and never permit the buck to pull or bite the doe. About five days after the mating try them again, and if the doe refuses, it is a pretty sure sign that she will kindle. In some cases the doe will accept the buck up to within a few days of the time she is due to kindle. In breeding it is most important to have your stock in the best of condition as regards their fur, and if a little thin instead of too fleshy, so much the better. If your doe repeatedly fails to breed, repeat above performance a couple of times, and if she still fails, dispose of her. It may be possible you are overworking the service of your bucks, as three does a week are sufficient for the service of a buck during the breeding season.—R. V. M.

Pump Connection

Please inform me as to pumping plant with direct connection, that is without belt, having engine and pump down in pit, as I think the direct connection will eliminate the slipping of belt. What I would like to know is does the atmospheric condition have any effect on the engine? That is, will there be air circulation enough for engine with buildings over it? And where can such an outfit be bought?—Subscriber, Kingsburg.

Pumping plants with an electric motor connected directly to the pump are sometimes used but we do not know of any such plants run by gasoline or distillate. There can be no objection to connecting a gasoline engine directly to the pump except the difficulty of installation and the fact that the speed of the engine and pump cannot be changed to suit the variation of the water level. This also applies to direct connected electric motors. If proper sized pulleys are used there need not be more than 2½ per cent loss of power from engine to pump, and if the proper width of belt is used, and properly installed, the loss from slipping will be negligible.—J. B. N.

Depraved Appetite

Cows that are fed on home grown alfalfa, pumpkins, uncured beet pulp, and bran do not seem to be satisfied. They chew the roof shingles, fences, and other pieces of wood. They also have salt and sometimes green barley. What remedy could be applied for this condition?—Subscriber, Anaheim.

This is a desire which may result in starvation unless treated. The cattle will often eat old rags or even droppings from other cattle, soil or other strange and unappetizing material. The following treatment is recommended in the book called Diseases of Cattle issued by the department of agriculture:

"The aim in such cases must be to improve the process of digestion and to supply the animal with a sufficiency of sound and wholesome feed. The following should be given to the cow three times a day, a heaping tablespoon constituting a dose: Carbonate of iron, four ounces; finely ground bone or 'bone flour,' one pound; powdered gentian, four ounces; common salt, eight ounces; powdered

fenugreek, four ounces; mix. In addition to this, three tablespoons of powdered charcoal may be mixed with the feed three times a day, and a piece of rock salt should be placed where the animal can lick it at will."

We may add, by the way, that every owner of a cow should write to the congressman of his district, Washington, D. C., and ask for a copy of this book. We believe the Division of Publications will mail it on the payment of 75 cents or \$1.00, but no doubt the congressman will be glad to send it from his allowance.

Another book, "Productive Feeding of Farm Animals," by F. W. Woll also gives much the same mixture and sug-

gests plenty of sunlight, fresh air, sanitary stalls or boxes, scald pails daily and never let feed ferment.

Grafting Cherry

I have a Spanish cherry tree which does not bear. Can I graft another into it that will bear? How do you graft? Must the tree be cut back?—Subscriber, Puente.

Cut the top off and graft in the branches the same as you do other trees, only put in all the grafts you can so as to take the sap rapidly. Cut the branches off high enough to get into the small limbs. Saw across the corners of the stumps and trim out with a knife or chisel and cut the

scion to fit. Incline the tops of the grafts out slightly, thus making sure that the inner barks of the scion and stalk match. Rewax if signs of cracking appear.—J. W. M.

Eggs in Water Glass

Last summer I put up a lot of eggs in water glass in jars according to directions in California Cultivator. In some the water glass made a thick white jelly and the eggs are keeping well; in others the whole jar remained transparent and in these the eggs are not so fresh and some even run together when broken into a cup. I mixed the solution all at one time. Is the solution too weak or was it not mixed well? The directions on the can say

Continued on Page 250



He's Learned Something

Only a few years ago this orchard was planted. And now it's only fit for kindling wood. It's coming out, roots and all. It's coming out in a hurry too, not only because it isn't worth the space it occupies but also because the man who owns it has learned something. (Something that perhaps you already know.) He has learned the value of dynamite on the farm. He is saving time, labor, and money by blasting out the old trees with

HERCULES DYNAMITE

And when he plants his new orchard he's going to plant it right—in holes blasted with dynamite, not dug with a spade. Here too he saves time, labor, and money. But, more important, he plants the trees as they should be planted. He gives the roots a chance to grow through receptive soil. They don't have to fight for every inch they make. That's waste of energy that ought to go into fruit.

The new orchard will bear a year earlier

than any of his others have. It will give finer fruit and more fruit. It will be a real money-maker.

"And how did this man come to use dynamite?" you ask. He answered an advertisement just like this one. He got a free book, "Progressive Cultivation." He read it. That's the story. Your copy of the book is waiting for you. Fill out and mail the coupon below. You'll get "Progressive Cultivation" by return mail.



HERCULES POWDER CO.

1013 Chronicle Building,  
San Francisco, California



Hercules Powder Company,  
1013 Chronicle Building, San Francisco, Cal.

Dear Sirs:—Please send me a copy of "Progressive Cultivation." I am interested in dynamite for.....

Name.....  
Address.....





Established 1877

Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

Published By

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Advertising rates furnished on application.

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The California Cultivator is a Member of

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Entered at the Post Office at Los Angeles, California, as Second-Class Matter.

**Saturday, Feb. 23, 1918****OUR ADVERTISERS RELIABLE**

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

With more than 200 registrations the management of the tractor school feels that the time and effort expended was justified in the case of the school just closed at the citrus experiment station. From early Monday until late Saturday pencils and notebooks were kept busy by one of the most inquiring bunch of pupils we have ever seen. The picture shown on the cover gives one a faint idea of the attendants at the school, for their interest was manifested in their faces and in their intense application to the problems before them. There were men and women from nearly all sections of the state, and a more patriotic bunch is seldom brought together, for every moment was used to prepare for more and better California production.

**INCOME TAX**

The time for filing income tax returns has been extended until April 1. Nevertheless, everyone who can get within reach of the internal revenue collector's office should make immediate returns if possible.

**SUGAR BEET HEARINGS**

The hearings in Los Angeles are ended. The evidence covers thousands of pages and report will be made to Washington. Meantime it is hoped that the rains and the probability of a fair price being secured will induce general planting.

**FARM BUREAUS**

Two important farm bureau meetings were held during the past week in the southern end of the state, one at Holtville and one at Los Angeles. Both will be referred to more particularly next week. This

latter was the first in the county and was largely attended. Dean Hunt gave his address on "Canada at War," from which quotations will be made.

**STRENGTH TO HIS ARM**

California's live wire, Senator Johnson, has delivered some hot shot in the senate regarding using the people's money to pay eight per cent interest on the watered stock of great railway corporations. The farmers feel that the cost of living has been held down at their expense, with no guarantee as to their investment, and now in addition to take their earnings to pay long profits to railways is the last straw. They are hoping for more enlightenment in this situation from our senator.

**IT RAINED**

It did not rain as much as we would wish—and human nature perhaps has not the capacity for being satisfied with the blessings given us—but from Shasta to San Diego a twelve months drouth, the longest in the history of the state, has been broken by liberal rains. As this is written, on Tuesday, the rain has only amounted to about one inch in some sections; in others reaching to one and a half inches or even more, but there is still promise and sufficient length of season for abundance of rain and for abundant crops.

**SPECIAL CROPS**

It takes a specialist to grow a special crop, but results sometimes justify the specializing. On the third page of this issue is a story of how one section is making a name and no little wealth for it is now growing one of California's most successful special crops, cauliflower. The cauliflower industry has been developed within a very few years, and the particular section described has only been a commercial producer for about four years. But once it was found that the Compton district was adapted to cauliflower culture some of the brightest farmers of the section started investigating varieties, methods of culture and methods of marketing. Real success, however, was not secured until cooperative marketing was taken up. Now hundreds of carloads of some of the finest cauliflower ever shipped is being sent out and with profit to the grower.

**ANNUAL ASSEMBLY**

The farmers club, the farm bureau, the Grange, and every other organization which brings producers together to discuss farm and marketing methods is accomplishing great good for the producing interests. It has been our pleasure to attend the last two annual assemblies of the Imperial County farm bureau, and we have attended no similar meeting or convention in California which has made more of the opportunity. The one held this year at Holtville called from the state university at Berkeley, from the quarantine office of the state horticultural commission at San Francisco, from the state marketing bureau at Sacramento, from the department of agriculture at Washington, and from other organizations interested in agriculture, well qualified speakers, everyone bringing inspiration in the information given directly and in the showing made that the state and nation is aiding agricultural advancement.

The Holtville meeting will be given

more particular attention in next week's issue with some photographs taken for the Cultivator. For the present it is sufficient to say that it was a great meeting and we believe could have been greater had the sessions been extended over two days instead of being crowded into one with simultaneous sessions in different parts of the town.

**A BETTER MARKET**

The farmer often feels that in the present marketing situation he is between the deep blue sea and—another deep blue sea in his effort to make both ends meet. This situation was faced at the recent meeting of the National Milk Producers' Association, one of the newer organizations of the country, of which the California Dairy-men's Association is a member through its representative, Mr. Ayers.

In the resolutions adopted at this meeting is the following paragraph:

"We voice the opinion that the time is come when in order to quiet the feeling of unrest among producers the federal government should insist that farmers of every class receive their costs of producing plus a reasonable profit or the ultimate production will be reduced to the danger point."

Of course patriotism is appealed to and is sufficient to induce many to do their utmost, but there are limitations even to human effort.

**GO TO SCHOOL**

As we look out upon the problems growing greater every day it seems that the circumference of the world is increasing. Fortunately there never was a time when the opportunities were so many for securing information or ability to solve these problems as today. The nation, the state, and local organizations vie with each other in planning for all of us opportunities for growing. Perhaps many of us recall looking forward to the time when the duties of the school-room would be passed and we would be free from such irksome labors, but as we have heard many a farmer remark within the past few months, we never get free from the necessity of learning new lessons. Our own university has for some years conducted a correspondence school so that the busy farmer has been able to continue with his studies. The department at Washington and the food administration have given a great fund of information which is helping on some of the problems now before us, and the farm bureaus with their farm adviser leaders are likewise helping to meet the increasing difficulties, for as feed for livestock goes up and as the cost of labor and of all farm implements becomes almost prohibitive the full use of our abilities is surely demanded.

**TO LESSEN TENANCY**

One of the newer agricultural organizations of the country is the American Association for Agricultural Legislation of which a Californian, Dr. Elwood Mead, is president. Wishing to know more of the purpose of this organization we wrote to Dr. Mead, and he tells us that the aim was to "form an association to promote legislation which would give broader opportunities for men to own the land they cultivate and to lessen the growing evil of tenant farming. Subsequently it was expanded to include all agricultural legislation because of the belief that our agricultural community life needs to be reorganized, that the marketing of products is only less important than the conditions under which they are grown, and that by leaving this entirely to agencies which have no direct relation to either the consumer or producer there has been built up in this country a situation especially favorable to speculative manipulation, and it is a cumbersome and costly method of distribution. These are the main ideas of this association."

**This Week's War News**

The Italians have been aggressive and at various points have driven back the Teutons.

There have been three air attacks on London during the past week with only nominal damage.

The campaign against the I. W. W. and German spies is being prosecuted with greater vigor in this country.

Bolo Pasha, the French traitor, has been convicted and sentenced to death and Senator Humbert, charged with being connected with him, has been arrested and placed on trial.

The ship builders strike has been declared off, but not before President Wilson took a hand and suggested that to continue the strike at this time was nothing more nor less than treason.

There have been no important sinkings during the past week, and the submarine campaign is still being shown ineffective. Slight damage was caused to Dover by submarine shelling. Less than a dozen casualties were reported.

The Ukrainian forces have been driven from Kiev by the armies of the Reds, and the strange situation of the Rumanians, Ukrainians and the Austrians fighting against the Bolsheviks prevailed for a time. It appears that Rumania is under entire control of the Central Powers, and humiliating peace may be made.

The Turks are announcing that since the Russian armies have been withdrawn from the Armenian country the Armenians are brutally slaughtering the Ottomans. This is taken as the first announcement of slaughter of Armenians which the Turks propose to carry through. The former massacres were preceded by similar announcements.

The condition in the Central Powers appears to be practically the same as last week, though so far as known the strikes and rioting have been largely brought under control by the army. Whether they are to make their long advertised attack on their West front or, as anticipated by some, attack the allies at Saloniki and in northern Italy, is as yet a matter of guesswork.

It is now rumored that the Kaiser is demanding an immense indemnity paid in wheat by the Russians, and that peace with the Kaiser is the order of the Bolsheviks. Presumably the Kaiser will still insist on a controlling hand in Poland and other border states to be erected. Meantime the internal conditions of Russia are approaching civil war, and thousands have been slain.

The French and Belgian front has shown no particular activity during the week. So far as reported the American boys have acquitted themselves with honor, and have shot down one German airplane during the week. Artillery action has been almost incessant, and an aggressive movement is anticipated as soon as winter breaks. A number of German prisoners were captured in a raid made by French soldiers aided by American artillery in the Champagne district.

**CHISEL TEETH**

America had better look out after this war. I shall stand no nonsense from America after the war. — The German Emperor to Ambassador Gerard.

And ye have heard men say, Blessed are the peacemakers, but I say unto you, Blessed are the war-makers, for they shall be called, if not the children of Jahve, the children of Odin, who is greater than Jahve.—Neitzsche.

There is really only one nation that the United States should be afraid of in this war, and that is procrastin nation. — St. Louis Star.



# Agricultural News Notes of the Pacific Coast

## Northern California

Eldorado County received a two inch rainfall last week.

Petaluma is still shipping carlots of eggs to New York City.

Sutter County is ready for the appointment of a farm adviser.

Berkshire congress and sale, University Farm, Davis, February 21, 22.

The second annual auto show is scheduled for San Francisco this week.

Butte County peach growers are giving heavy irrigations to their orchards.

More than 500 cars of rice have been shipped from the Sacramento Valley.

April 17-19 are dates of the great tractor demonstration at Davis, Yolo County.

The government has confirmed titles to holders of land sold by the state on Eel River.

Supervisors of Butte County have appropriated the \$2000 necessary expense for a farm adviser.

Because of the mild winter lumber camps of Humboldt County have been operating to almost full capacity.

Butte County is to have a farm adviser, the board of supervisors having appropriated the necessary expense money.

Sacramento County viticulturists shipped over 48,000 tons of grapes last year; the net receipts were \$1,847,847.

The annual University Farm picnic will be held at Davis, Saturday, April 20. It will be preceded by a three day's tractor demonstration.

The Sutter County farm bureau is assured as a sufficient percentage of the farmers have been signed up and paid their dollar membership.

A. E. Miller of Mosquito, Eldorado County, is reported to have erected last year the first silo in that county. There are several now and more are being planned.

An alfalfa meal mill is to be established at Woodland, Yolo County, and a small portable plant is to be secured which will work in various portions of the county.

The Ferndale dairying section of Humboldt County has produced 23 per cent more milk during the month of December, 1917 than during the corresponding month in 1916.

The food administration grain corporation is notifying holders of grain that where unsatisfactory prices are secured the corporation will undertake to sell and secure full value.

Strawberry growers of Castella, Shasta County, have developed an extensive business in selling strawberry plants to growers at Watsonville. Last season they totaled \$10,000 for these vines.

At the last meeting of the Humboldt Dairymen's Association held at Ferndale, the growers decided on account of scarcity of carrot and beet seed that they would in the future raise their own.

The California Wool Growers' Association is backing the plan to establish an advanced registry for sheep in California. Those desiring to take advantage of this registry should notify Prof. R. T. Miller at the University Farm, Davis. Prof. Miller is the secretary of the California Wool Growers' Association.

## Central California

Fresno will observe Raisin Day as usual.

Large fig plantings are being made in Fresno County.

Seed potato buyers are finding demand lower than anticipated.

Farm Adviser J. F. Grass of Merced County is planning a campaign for increased production of hogs.

A bunch of 25 head of cattle were poisoned, it is thought with strychnine, on a ranch in Auberry Valley, Fresno County.

At a recent meeting of cattlemen at Fresno it was reported that plenty of alfalfa was available in San Francisco at \$28.50 per ton.

Oakdale, Stanislaus County, is planning early use of irrigation water and reports the flow at the head gates less than any preceding year.

Fort Romie, Monterey County, grange has just installed officers for 1918. The master is W. H. Boswell; the secretary, Mrs. Jennie Dudgeon.

Modesto ranchers are still holding meetings asking for consideration of irrigation district taxes which they think should be exempt from income tax.

Investigation as to dairy conditions near San Jose has brought out the fact that sanitary conditions in practically all Santa Clara Valley dairies are excellent.

It now appears that the castor bean demand is not so insistent as was anticipated, and producers who had contemplated extensive plantings are thinking the second time.

The California Grape Protective Association recently met at San Francisco. President Swett presided and made appeal for the preservation of the wine industry of the state.

The newly formed California Egyptian Cotton Growers' Association estimates that more than 10,000 acres will be planted in the San Joaquin Valley to Egyptian long staple cotton.

California alfalfa buyers have been notified that quarantine against alfalfa from Colorado has been extended to include Delta County in that state. The quarantine now covers all of Utah, eight counties in Idaho, four counties in Wyoming.

High schools of Monterey and Santa Cruz Counties are planning for working through farm bureaus arrangements for work on farms at vacation time. To the end that best information as to labor may be had a regular campaign of enlistment is planned.

The regular meeting of the Stanislaus County Duroc-Jersey Swine Breeders' Association at Modesto resulted in a resolution protesting against method of fixing prices according to "pork-corn ratio." J. M. De Vilbiss is president of the association.

Kings County's fresh peaches brought her \$180,000 while her dried peaches brought \$740,000—nearly a million to the good from the peach crop, besides nearly a half million from apricots. The same county's raisins netted her over a million and a quarter.

President Roeding of the Kings River conservation district called a meeting of Fresno district land owners at Fresno last Thursday to consider the Pine Fat project. The dry weather has emphasized the necessity of conserving the water of the Kings River.

## Southern California

Fumigation in practically all citrus orchards has ceased for the season.

There is much interest in Pomona in proposals to erect a dehydrating plant.

The supervisors of Riverside County have awarded contract for building of roads in the Coachella Valley.

Imperial Valley recently made one shipment of 49 cars of live stock in special train to Los Angeles market.

The farm center at Corona, Riverside County, has succeeded in securing the improvement of a bad piece of roadway.

A temporary embargo was placed on citrus fruits because of Eastern congestion. All trains are now moving regularly.

Licensed food dealers of Southern California met Commissioner Merritt in Los Angeles last week to discuss the new food regulations.

Fruit growers around Lankershim, Los Angeles County, are hoping to have cooperative cannery in operation for next season's pack.

County Horticultural Commissioner Waite of Imperial County announces that ladybirds are now ready for distribution in the barley fields.

The Riverside County farm bureau organized a farmers patriotic rally which was held at the boys' polytechnic high school at Riverside last Tuesday.

Owing to injuries received in the Ojai Valley fire last summer another death is now recorded, which makes the twelfth death as result of that great conflagration.

Blythe, Riverside County, has endorsed a project calling for the issuance of \$1,250,000 bonds for forming a protection and drainage district along the Colorado River.

Robert Reese, cow tester for Imperial County Association, has made report as to January tests, with long list of cows producing 45 or more pounds of butterfat.

Farm Adviser Essig of Ventura County is making a live stock survey. He asks all cattle owners to notify his office at Ventura of amount of feed needed and kind wanted.

J. A. Prizer, for years in charge of citrus orchard properties in San Diego County, has taken work with the citrus experiment station, taking work formerly conducted by W. M. Mertz.

The commission appointed by Food Commissioner Hoover to investigate the sugar beet situation has finished its hearings in Los Angeles and will now go to sugar beet section of Central California.

The commission appointed by Mr. Hoover to investigate as to cost of producing sugar beets in Southern California is now holding its hearings in Los Angeles. It will later go to other beet producing sections.

The Fruit Growers' Exchange of Southern California are issuing warning to ranchers not to delay irrigation of groves in hope of rain. It is necessary to put on the water at once to get a satisfactory setting of oranges.

The action brought in the United States district court involving validity of the lye peeling process patent will be brought to trial May 1. All cooperative canneries in California and many independents are uniting in this action.

## The Coast and General

Chicago is now offering Japanese eggs on the market.

Yakima, Washington, will hold a dairy products show February 28 to March 2.

Nearly a half million people used Pike national forest in Colorado for recreation every year.

One-third of the apple crop of Hood River, Oregon, is still in cold storage plants and warehouses.

A new sugar factory is being built at Rigby, Idaho. It is offering \$9.00 per ton for sugar beets.

A census of lumber produced in this country during 1917 is to be made by the national forest service.

A three days meeting of live stock producers of the Northwest closes today at Spokane, Washington.

Fuel Administrator Schwabacher is appealing to railway firemen and to all others to conserve to the utmost all fuel.

Farmers at Pilot Rock, Oregon, are planning erecting of a \$12,000 grain elevator. It will be cooperatively owned.

A half million acres of federal land have been thrown open for pasturage of New Mexico live stock. The stock will be admitted on March 11.

Every enlisted man in the army will be given an identification number. Numbers will begin at one and run consecutively without prefix or affix.

Farmers under the Roosevelt Dam, Arizona, can now secure funds through the federal land bank. John Orme of Phoenix has been appointed appraiser.

Utah farmers have agreed with the sugar manufacturers on a price of \$9.00 per ton with a fifty-fifty split for any advance on the price of sugar over \$7.45 per cwt.

The annual "round-up" of farmers and their families at Lehigh, Utah, brought out an attendance of over 500. Greater production and more perfect conservation were discussed.

The Farmers' Union of the three counties of Nez Perce, Lewis and Clearwater, Idaho, has elected C. W. Booth of Nez Perce, president, and R. L. Anderson, also of Nez Perce, secretary-treasurer.

There was a very enthusiastic meeting of the Agricultural Federation of Idaho, at Lewiston. O. M. Tronaas of Bliss, Idaho, was elected president. There was much discussion as to the labor question.

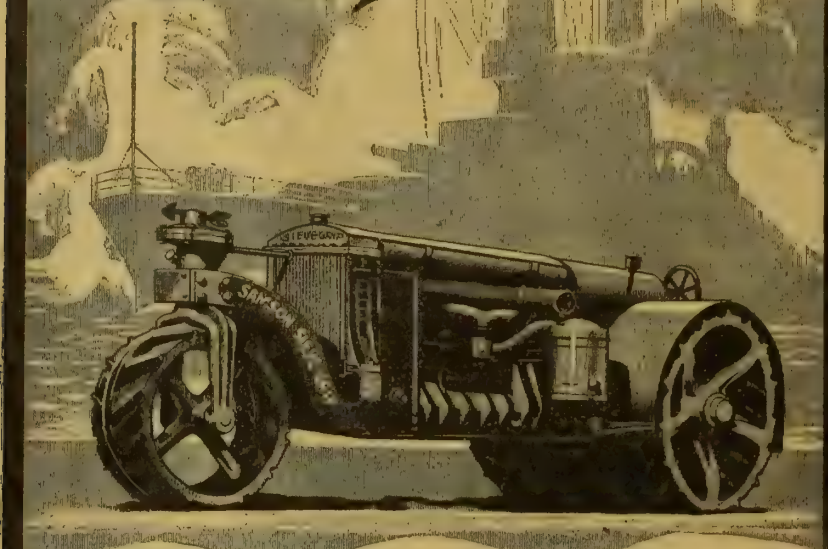
The cotton growers of the Salt River Valley are contemplating an organization which will aid, not only in marketing but growing, to better advantage. The labor question will be most serious next season.

California grew in 1917, 9000 acres of onions and was surpassed by only one state in the Union, New York which grew 9800 acres. In bushels California surpassed, as her lesser acreage produced nearly 1,000,000 more bushels than did New York. California's total was 3,546,000 bushels.

Storage supply of meats has been greatly decreased during the past few weeks by enormous demand on the part of our allies, and in addition demand for salt water fish has been greatly increased, and shipments are being made to greater distances from sea ports than ever before.



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Full 25 H-P is developed for stationary work, aside from power for plowing, cultivating, harrowing, hauling, etc. The usefulness of this size machine gives popularity to

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# TRACTORS

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Canadian Government Agent.



## Tractor Demonstration

Notice was given in last week's Cultivator of the holding of a big tractor demonstration at the University Farm at Davis on the three days preceding the annual farm picnic, April 17, 18 and 19.

There will also be a large showing of tractor tools in order to demonstrate the broad scope of modern power farming and to demonstrate the extreme versatility of the present-day tractor. There will be plows, disk and drag harrows, special types of cultivators, land levelers, sub-soilers, scrapers, checkers, and so on. The showing of tractors will include practically every machine sold on the Pa-

the numerous uses of the tractor as a stationary power plant. A big tent will accordingly be provided, around the edges of which will be grouped saws, feed mills, seed cleaners, and other similar equipment for the small tractors and big threshers, pumps, etc., for the large tractors. Inside the tent will be still other accessories of the modern power-equipped farm which, while not directly related to tractors, will serve to show the extent to which man and horse labor may be dispensed with in present-day agricultural operations. Among these exhibits will be motor trucks, electric-light plants, power-driven dairy and



Tractor Efficiency

Double disk harrow is an efficient orchard implement at this period.

cific Coast, the following tractors already being entered: "Caterpillar" Tractor, Yuba Ball Tread, Best Track-layer, Waterloo Boy, Cleveland Tractor, Samson Sieve Grip, several models of International Harvester Company, Avery and Case Tractors, Monarch Tractor, Bean Tractor, Moline Tractor, Wallis Cub, Fageol Tractor, Sandusky Tractor. Implement lines will be shown by the John Deere Plow Company, Oliver Plow Company, Pacific Implement Company, Baker and Hamilton, as well as I. H. C., Moline Plow, Case, Avery, Holt and Yuba that build plows and other tractor tools as well as tractors.

But the scope of the demonstration will be still broader than this, for an effort will be made to show some of

household equipment, etc. The oil companies will also have extensive exhibits.

The demonstration committee having the show in charge is composed of W. H. Gardner of the Yuba Company, chairman; G. M. Walker of The Holt Manufacturing Company; W. E. Price of the Pacific Implement Company; W. D. Boswell, tractor distributor; and Professor J. B. Davidson of the University of California. Mr. Eugene Smith will manage the demonstration.

The tractor is occupying the center of the field of economical agricultural production. We want to know all there is to know of its possibilities. More of this demonstration will be given in later issues.

## A New Farm Loan Ruling

The federal farm loan board at Washington writes that the financing of small farms has presented a rather puzzling problem as some farms yield much larger returns than others per acre. Also there are tracts of land which are too small to produce a living for a family. Where a small tract is intensively and skillfully cultivated and maintained in the highest possible state of fertility it often yields surprising returns. These returns, however, depend largely upon the man and not upon the land. A piece of land which may produce a gross return of \$1000 per acre under one man's management might fall off under the control of another to only a few dollars an acre. A tract intensively cultivated by a man who thoroughly understands intensive cultivation might produce an annual income which would pay interest on a valuation of several hundred dollars per acre, but it is, of course, unsafe to make that man a loan on any such basis unless the land itself, under average conditions, has a very high value. Suppose that the surrounding land is worth an average of only \$50 an acre. Take the spe-

cially skillful man away from the very productive tract and it will soon fall in value to about the average of the neighborhood.

And yet the farm loan board feels that the intensive farmer should be financed wherever possible. He must be financed, however, on a basis which will render the loan safe even if he should die the day after the loan is made and the land pass into hands in which it will give only average farm land returns. It is for meeting this situation that the board has made and promulgated the following ruling for the guidance of the 12 land banks:

"As a basis of determining what area constitutes a farm for loaning purposes the board requires the following test:

"First, Generally: The farm must be of sufficient area to yield at the hands of an ordinarily capable farmer, putting it to the use to which it is generally adapted and using average methods, an income sufficient to maintain the family of the applicant and discharge the interest and amortization payments.

"Second, Specially: Where through

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By Ernest Braunton

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and consistent service to the West-  
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sure protection against  
frost, sunburn, grass-  
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Can be easily removed,  
will last for years. Send  
for samples.

Prices

	Per 1000
10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

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CALIFORNIA'S BIGGEST  
MID-WINTER EVENT!  
At San Bernardino, Feb. 20 to 23  
Gates open at 7:30 P. M. 20th  
A Gorgeous Spectacle Portraying  
the Splendor and Riches of the  
Citrus Fruit Industry.  
Million Oranges in a Beautiful  
Wonderland Garden of Trees and  
Flowers.  
United States Government's Food  
Conservation Demonstration.  
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Only Self-Setting machine.  
Transplants sweet potatoes,  
tomatoes, tobacco, strawber-  
ries, cabbage, nursery cuttings,  
etc. Any desired depth. Set-  
ter than hand. As plant is re-  
leased, water valve op-  
ens, then closer rollers  
press dry soil around plant.  
Holds moisture but leaves  
so wet surface will to bake.  
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For Open Ditches, Reservoirs and  
Gravity Pipe Lines  
The Reliance Meter is recognized by water  
companies and irrigators to be the most ac-  
curate and impartial method of measuring  
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intensive farming or the practice of  
a specialty a sufficient income has  
been regularly derived from a tract  
deficient in area for ordinary farm-  
ing, or where the application of the  
prospective borrower shows that he is  
by experience capable of producing  
such an income from such a tract,  
such area may be accepted as suffi-  
cient, provided the land has a stable  
and permanent market value sufficient  
to warrant the loan applied for. This  
ruling does not apply to fruit and  
orchard lands which have already been  
the subjects of definite rulings by this  
board."

### NEW GRANGE IN SISKIYOU

State Master Joseph Holmes writes  
that he has just organized a grange  
at Little Shasta Valley, Siskiyou Coun-  
ty, with a charter membership of 40.  
It is called "Big Springs Grange after  
the big spring from which is irrigated  
considerable land in that locality. The  
settlers are clearing the land of jun-  
iper trees and are growing and plant-  
ing alfalfa which is the principal crop  
and does well as is evidenced by the  
big stacks of it still standing in sev-  
eral places.

"On account of the open winter live  
stock look well, especially when we  
take into consideration that some of  
them do not get anything to eat ex-  
cept what they pick up on the outside.  
At Sisson there was no snow, which at  
this time of the year is usually from  
four to six feet deep.

"The officers of the newly organized  
grange are: Master, Joseph Stallcup;  
overseer, A. M. Snyder; lecturer, Mrs.  
Joseph Stallcup; steward, Orlo  
Dwinell; assistant steward, Harold  
Morrison; chaplain, M. L. Johnson;  
treasurer, J. P. Dwinell; secretary,  
Olympa Roberts; gatekeeper, Rolan  
Little; Ceres, Mrs. R. P. Winters; Po-  
mona, Mrs. E. Morrison; Flora, Miss  
Flora Neate; lady assistant steward,  
Miss Jemima Roberts; pianist, Miss  
Neva Dwinell.

### NEW FOOD ADMINISTRATORS APPOINTED

Food Administrator for California  
Ralph P. Merritt has appointed Louis  
M. Cole food administrator for the  
city of Los Angeles; G. H. Welch,  
food administrator for Los Angeles  
County; Paul J. Pitner, food adminis-  
trator for Pasadena. A fish commis-  
sioner for Southern California will  
soon be named. As to the fish situa-  
tion Mr. Merritt says:

"All salt-water fishermen must ob-  
tain a federal license before the first  
of March if they intend to remain in  
the business. In order to assist the  
fish industry and to keep a careful  
watch on these fishermen I will ap-  
point before the end of the week a  
fish commissioner for Southern Cali-  
fornia. His district will be the Mex-  
ican line on the south and Point Con-  
ception on the north. This man will  
be a friend of both sides—the fisher-  
men and the packers—and will know  
the fishing industry thoroughly. This  
is being done to assist in the develop-  
ment of the canning and fresh fish  
industry. It is an extremely import-  
ant matter, owing to the rapid de-  
velopment of the canning industry in  
this section. Also because Southern  
California is at present receiving a re-  
stricted quantity of fresh fish. Much  
good has been done by the local coun-  
ty council of defense and we propose  
to use the data collected by them.

"The food administration will not  
attempt to regulate the price, lacking  
the power to do so, but we do propose  
to increase the supply of fish, thus  
lowering the price. This price will  
not be exorbitant, but will yield a fair  
profit to the fishermen."

Mr. Merritt also intimated that  
there was soon to be an investiga-  
tion by the state fish and game com-  
mission, and others interested in the  
fish industry, relative to the changing  
of the present laws in regard to the  
three-mile limit and restricted fishing  
grounds.

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## Who's Who

With the issue of August 11 the Cultivator started its series of "Who's Who" articles to bring before its readers some of the livestock producers of California who are responsible for the large development of the industry. Where did they come from and how long have they been engaged in California development, also how do they look, so pencil and camera are to be used, and some homely, everyday photographs and notes regarding them will bring us closer together. Bear in mind we say "homely photographs" and not photographs of homely people. The idea we wish to convey is that so far as possible we will secure photographs in everyday surroundings at the homes of the livestock producers.

Written for California Cultivator By C. A. Briggs

### W. S. GUILFORD

**W**AY up on the west side there is one of the state's livestock live wires. Always on the go, always full of life, good nature, helpfulness, general joy of living. One of his names is pep; the other is Guilford, though his friends, and that includes everybody, call him "Gil."

W. S. Guilford has crowded much of success into his 35 years. As a boy he gained experience with stock at the



W. S. Guilford

Lakeside Stock Farm and local stock yards and decided then to be a breeder of fine stock. He graduated from the Storm Lake High School and from the University of Wisconsin college of agriculture, was editor of the Wisconsin Agriculturist at Racine, Wisconsin. In this capacity he came

in touch with leading breeders, educators, newspaper men and others interested in live stock and agriculture, and his quick, active mind gained much from the association. At this time he was a member of the executive committee of the National Live Stock Association for Wisconsin. Later he acted as general agent for the Seabury Live Stock Company of Denver, covering the territory from Canada to Texas, widening his experience of stock and stock men. He was assistant general manager of the first three National Live Stock shows held at Denver; director of agriculture Twin Falls, N. S. Light and Water Company at Jerome, Idaho; director of agriculture Superior California Farm Land Company, Willows, California, where he is at present employed; these are some of the important positions he has held, all adding to his experience as a stockman and agriculturist. Mr. Guilford has directed the purchase and breeding of the Berkshire herd of the Superior California Farm Lands Company at the Monroeville Orchards in Glenn County, and of the Shorthorn, Berkshire, Shropshire and Pony herds at the Butte City Ranch at Butte City. In addition to his other activities he is president of the Glenn County farm bureau, president of the Glenn County Berkshire Breeders' Association. He has served one term as president of the Western Berkshire Congress, and is a member of the International Live Stock Association and the Saddle and Sirolo Club of Chicago. Whew! how does he find time to do it all and always have time left for a pleasant word, smile and a helping hand for every one?

## Northern California Live Stock Notes

Written for California Cultivator by W. S. Guilford

### IMPORTANCE OF RESERVE FEED EMPHASIZED

**T**HIS has been a very trying year for stockmen who depend on grass exclusively for their feed. We have had two storms that have helped a little, but the ground is dry, except for an inch or two, and grass has made very little growth. Dry weather and drying north winds have been the rule all winter. We have had a little rain this week (ending February 9), and it came just in the nick of time. Some stockmen were talking about selling. Hay is scarce and very high in price.

All of which emphasizes the fact that it is a good thing to have a reserve stock of hay or silage on hand for emergencies like this that cannot be foreseen. On our ranch we never want to see the bottom of our hay barns, and it does not make us feel badly to carry over silage. The stockmen who are in the best position in Glenn and surrounding counties today are the small farmers who have both hay and silage. A number of big operators have told me that they never will be caught again in the shape that they now are, even if they have to cut down to such numbers as they can run on irrigated alfalfa land.

### LOTS OF LAMBS COMING

Lots of lambs are being dropped now, and the weather conditions have been very favorable. More and more ewes are being lambing in sheds and barns where there is no danger from exposure in case of storm and where it is easy to give attention to any ewes that have trouble in lambing. There is considerable guessing as to what lambs and wool will be worth. With the high prices that ewes have been selling for and with feed conditions as they are both will have to be high if sheepmen are to make any money.

### EXERCISE IMPORTANT FOR SOWS

There have been a good many hogs in the rice fields all winter. The dry weather has made it possible for them to make a splendid clean up of the rice stubble. Now some of the sows are having pigs, and the size and vigor of the litters from these sows that have travelled miles every day during their period of pregnancy is a great argument in favor of plenty of exercise.

We had another case in point come up recently. A customer who had bought a number of sows said, "Can you tell me why it is that the pigs we



are getting from the sows we bought from you are so much bigger and stronger and more vigorous than those from our sows?" (The sows in this

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"MODEL MAJOR" winner of three firsts and two Grand Championships is at the head of my herd of prize winning sows. My sows are the easy feeding, big litter kind that have quality. Now booking orders for June delivery of spring pigs. Satisfaction guaranteed or money refunded.

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IRON AGE Combined Hill and Drill Seeder solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's handwork in 60 minutes.

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other herd have been rather closely confined.)

Our only answer to the question was that the sows had been in a big woodland pasture, and that they were in fair condition, their flesh was firm, their muscles hard, and they had had to get lots of exercise in order to make their living. Then they had access to a wide range of feed—roots, berries and wild feed in addition to alfalfa and grains.

A LITTLE CARE AT THE RIGHT TIME

It is frequently possible to save an entire litter, or a part of a litter of pigs, by being on hand to give a little attention at the right time. In most cases it pays to take the pigs from the sow as they are dropped and keep them in a box by themselves until the sow is through farrowing. If, however, she is too long about it, it may be necessary to let the four or five that are out have a suck before the balance come. If the weather is cold it is a good thing to have a warm brick and some dry sacks in the box, which should be one with high sides so that the pigs cannot jump out. After the pigs all have a "bellyful" of warm milk and the sow has settled down, they can be left with her. There is a big difference in sows as to their ability to take care of pigs. Some seem to be just naturally clumsy, while others are natural mothers. They hover the litter as a mother quail does a covey of young and are careful not to lie down on the pigs. A sow of this kind has a high value that is demonstrated only by experience and should be sold only in an emergency. This is the kind of animal that the Register of Merit is meant to include.

MUCH GOOD LOOKING GRAIN

In spite of the very dry season and the fact that the ground is dry all the way down, a large part of the grain acreage looks good, and if we have plenty of rain from now on, and a long, cool spring, we may have a big crop again. It is the observation of many old timers that a so-called dry year is generally better than one that is too wet, especially during the early part of the season.

### DAIRY COMPETITION FOR CALIFORNIA CULTIVATOR PRIZES

Prof. F. W. Woll, in charge of the State Dairy Cow Competition, sends the following report for January performance of herds competing for the three \$100 prizes offered by the Cultivator:

Owner	No. Cows	Ave. Lbs. Butterfat
Herds of 10 to 25 Cows		
Floyd Beebe, Woodland	19	31.21
J. W. Coppini, Ferndale	20	26.57
Herds of 26 to 50 Cows		
Iver Iversen, Arcata	37	37.51
W. Terkelsen, Ferndale	27	29.91
G. E. Trigg, Ferndale	35	20.48
Herds over 50 Cows		
Coppini & Coppini, Ferndale	43	17.21
John Hansen, Loleta	87	27.73

It is planned to hold a Dairy Farmers' Conference at the University Farm, March 15 to 16, the central feature of which will be the awarding of the prizes offered in the dairy cow competition by Dean Hunt at the evening session of March 15.

Silo building demonstrations have been held during the year by county agricultural agents in Navajo, Yavapai, Maricopa, Pima, Pinal, Cochise and Graham Counties, Arizona. In consequence many new silos have been erected this year, and many more are planned. The pit silo, described in a recent Cultivator, is a favorite in Arizona.



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NO BATTERIES REQUIRED      EQUIPPED WITH A HIGH GRADE ROTARY MAGNETO

STARTS EASILY ON MAGNETO WITHOUT CRANKING

Plan Early---Avoid Delayed Shipment

Our stock is now complete. Freight cars and materials are hard to get at the factory centers. We advise you to determine your needs and place your order now to make sure of having your engine when most needed.

## THE VIKING ROTARY PUMP


A pump of very high efficiency due to its slow speed and positive discharge. Capable of pumping large volumes of water to any head without loss of efficiency.

An Ideal Pump for Irrigation  
Capacity 20 to 1600 gals. per min.

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LIVE HOGS MEAN \$\$\$  
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## Safe Silage Cutters

Patented safety yoke protects the operator. Patented cushion drive protects the machine. Light draft—sizes from 4 H. P. up, that can be run with your gas engine. Force-feed. Throws and blows—fills the highest silo. Cuts dry feed, too.

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by using

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ACCURATE. EASY TO USE. EFFICIENT.

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We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

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Registered young bulls from best families.

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Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

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When writing advertisers, mention the Cultivator.

## Home Cheese Making



IN RESPONSE to several requests the Cultivator gives here directions for making a cured cheese from whole milk. It is necessary for success to follow directions exactly.

### Aeration and Cooling

The best time to make farm dairy cheese is immediately after milking. First pour the milk from one vessel to another in some locality where the air is pure and fresh, raising the vessel well so that the air can pass through the milk as it is poured out and carry off the animal heat and odor. Then pour the milk into the vat, or, if no regular vat is at hand, use a large wash boiler.

### Coloring

If it is desired to have more than the natural color, so that the cheese will look rich, add about a teaspoon of cheese color to 16 gallons of milk. To do this properly take a large dipper half full of milk, mix in the color thoroughly, and stir the whole into the vat of milk.

### Rennet

Now add rennet extract at the rate of one ounce to 100 pounds, or 12 gallons, of milk. Mix the extract with half a dipper of cold water and then pour into the milk. Rennet tablets may be used instead of the extract, one small tablet for every five gallons of milk, or one large tablet for 25 gallons. Small tablets are about the size of a dime; large tablets are about as large as a silver quarter of a dollar. Dissolve the tablets required in a small quantity of cold water, then pour into the milk. The rennet extract or the tablets may be procured from any dairy supply house and at many drug stores.

### Temperature

Great care should be taken not to have the milk at a temperature below 86 degrees Fahrenheit nor above 90 degrees when the rennet is put in.

### Curdling

After the rennet is put into the milk, stir gently two or three minutes, then let stand until the curd is firm enough to cut. The milk should begin to curdle in from ten to 12 minutes. To ascertain when the curd is ready for cutting, push the forefinger into the milk at an angle of 45 degrees until the thumb touches the milk; make a notch in the curd with the thumb, then gently raise the finger; if the curd breaks clean across the finger without any flakes remaining on it, the curd is ready for cutting. A little practice will soon enable the operator to tell the best time to cut.

### Cutting

For cutting, regular cheese knives are best, one with horizontal blades and one with perpendicular blades. In case it is intended to make only a few cheeses, a wire toaster may be used, the wires only about a half inch apart. First cut lengthwise, then crosswise of the vat or boiler, until the curd is cut into cubes about the size of small kernels of corn.

### Cooking

After cutting, stir the curd gently for about three minutes, then heat slowly to 98 degrees or 100 degrees Fahrenheit, constantly stirring gently while the curd is being heated. Keep the curd at this temperature for about 40 minutes. To tell when the curd is sufficiently cooked, take a handful and press it gently, hold for a moment, then open the hand, and if the curd

falls apart it is firm enough. As soon as the curd is sufficiently cooked, draw off the whey. Then the curd is ready to put into the cheese mold, or hoop.

### Molding

Fill the mold by taking a double handful of curd at a time and pressing in gently until the mold is full and well rounded up. Regular Gouda molds are best, but any tin or wooden receptacle will answer if small holes are made in it to allow the whey to escape. The cheese should be from eight to ten inches in diameter and about three inches thick. Then take the cheese out of the mold and turn it upside down and replace it. Put on the cover and put the cheese to press.

### Pressing

The press may be about 12 feet long; a broken wagon tongue answers the purpose very well. Set a strong box, on which the mold may be placed, about three feet from a wall, post, or tree; on the latter nail a slat and under it put one end of the lever. Put a circular board about six inches in diameter upon the mold and on this rest the stick or lever. A pail containing a few cobblestones will answer for the weight. Do not apply full pressure at first, but let the weight hang about halfway between the mold and the outer end of the stick. Let the cheese remain a few hours in the press; then take out and dress.

### Dressing

To dress a cheese, first put it in warm water for a few moments and then wipe dry and rub smooth. Take a piece of linen cloth about six inches wide and long enough to go around the cheese and lap over a few inches. Wrap the cloth smoothly around the cheese, folding the edges down carefully over the sides; then put a circular cap of cloth of suitable size on each side. Replace the cheese in the mold, with the bandage or dress all smooth, and put it under the press, moving the pail to the end of the stick. Leave the cheese in the press for about 20 hours; then take it out and salt it.

### Salting

The cheese may be either dry salted or brine salted. Brine salting is the better way. Make a solution of salt and water as strong as it can possibly be made; put the cheese into this brine and sprinkle some salt on the surface which is exposed as it floats. Leave the cheese in brine for two and a half days, turning it over every 12 hours. For dry salting rub salt onto the cheese, and all over it, twice a day for three or four days.

### Curing

Next, put the cheese on a shelf in the cellar for curing. It must be turned and rubbed with the palm of the hand every day for a week or two; after that twice a week will suffice. While curing, cheese should be occasionally wiped with a cloth dampen in warm water, and if it gets a rough rind smooth it by using a brush and warm water. The temperature best adapted for curing is from 55 degrees to 65 degrees Fahrenheit, and the air should be as moist as possible. A cellar with a suitable and even temperature and not too dry is therefore a good place for curing. The cheese will be ready for use in from two to four months. The lighter the cheese is salted the sooner it will be ready for use, and the more the curd is cooked the slower it will be in ripening and the longer it will keep.

## Good For Man And Beast



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has been used by horsemen, veterinarians and farmers for over 40 years. Its worth has been proved, for spavin, splint, curb, ringbone and the many other hurts that come to horses. Read this letter from John Freezer, Henryton, Md.

"I recently used Kendall's Spavin Treatment on a colt that had been kicked. Before I had used half the bottle the swelling was all gone and he has completely recovered. I also find it good for bruises, sores, burns and colds on the chest."

Get Kendall's Spavin Treatment at any druggist's. For horses \$1.10 bottle — 8 for \$5.50. Refined for man, 55 cts. — 6 for \$2.75. "Treatise on the Horse" — Free from druggist, or write to

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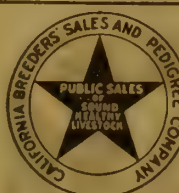
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## Bottle Fed Lambs

Written for California Cultivator By C. A. Briggs



IN THE spring of 1917 the J. S. Gibson Company Ranch at Williams fed 440 lambs on the bottle and Gion W. Gibson, the ranch manager, states that 350 of them made strong healthy sheep, a little smaller than ewe fed lambs, but this can probably be accounted for by the fact that they were all the runts of twins, in every

tried but proved a failure, the lambs being unable to digest it. Feeding was at the rate of one-half pint five times a day for the first ten days, a little more than one-half pint four times a day for the second ten days, then a pint three times a day the rest of month, when ration was increased to a quart twice a day. Better results would have been secured by feeding



Method of Arranging Bottles for the Lambs

case the smaller, feebler animals being chosen, leaving the better lamb with the mother. Special racks were made to hold the bottles which were fitted with ordinary nursing bottle nipples of the Ware type. Whole milk was fed for ten days, one-half whole and one-half skim for 20 days, skim milk for the final 30 days. Five per cent of lime water, or one quart

oftener during the entire period.

The lambs were a cross between Shropshire bucks and Merino and Mexican ewes. Better results can be obtained with smaller numbers of lambs, not to exceed 25 on a farm. Lambs should be collected, one of twins, weaklings likely to die on the range, and orphans, and given out to farmers that can care for from one to 25



Bottle Fed Lambs

Satisfactory method of raising motherless lambs and making valuable property from waifs.

in 20, was used with the milk after the first 30 days. At this time he began to keep bran, ground barley and rolled oats constantly before them. At all times they were allowed to run out in good weather on grass. They were kept warm and sheltered at night and in stormy weather. Lamb meal was

in good shape. The children on the farm can care for them; valuable animals can be saved and a profit made. This should be done in every sheep raising section and no lamb lost through neglect. The experience on the Gibson ranch proves that it can be done in a wholesale way; it can be done even better in a small way.

## Avoid Maggot Injury

Careful methods of live stock management with some shifting of seasonal activities will greatly decrease the losses of animals due to the larvae of flies, according to Farmers' Bulletin 857, "Screw Worms and Other Maggots Affecting Animals," by F. C. Bishopp, J. D. Mitchell, and D. C. Parman, just issued by the United States department of agriculture. Among the preventive measures advocated to minimize injury from maggots are the burning or deep burying of carcasses of animals; the arranging of breeding operations so that young stock will be born in late fall, winter, or early spring; the carrying on in winter and early spring months of branding, de-

horning, and other operations resulting in wounds; the taking of steps about pens and fences and on range or in pasture to prevent injury to live stock; the destruction of ticks; and the poisoning and trapping of flies.

### Burn or Bury Carcasses

The burning or burying of carcasses is important, it is pointed out, since it is on such material that the maggots infesting wounds are chiefly dependent for propagation. If all decaying animal matter could be destroyed, the troublesome blowflies—the insects bringing about maggot infestation—would be practically exterminated. arrangement of breeding practices so

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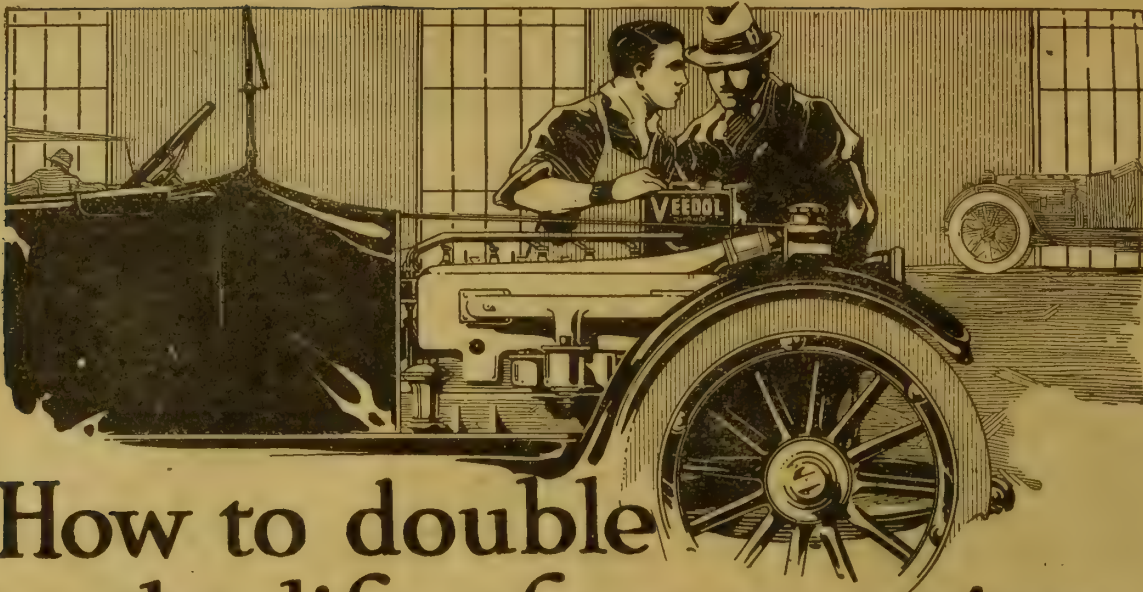
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Do you want this to happen to your engine?

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Ordinary oil causes rapid wear because it breaks down under the terrific heat of the engine—200° to 1000°F.—forms large quantities of black sediment and evaporates rapidly through the oil filler pipe.

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Note that the ordinary oil contains five times as much sediment as Veedol

protecting film between moving metal surfaces. As sediment has no lubricating value, these metal parts grind together, producing friction and wear.

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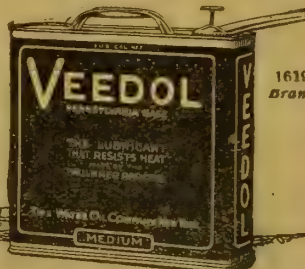
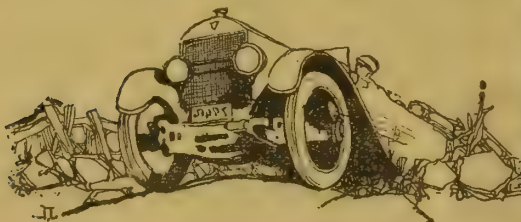
The result of their research was the discovery of the Faulkner Process. By this process—exclusively used by this company—was produced Veedol, the lubricant that resists heat.

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that young animals are born during the cool months of the year and the management of dehorning and other operations so that wounds are made during the cool season only, would minimize the danger of infestation, since most of the flies are scarce at such times. The elimination of projecting nails, splints, and barbs on buildings and fences and the clearing out of thorny underbrush on the range and in the pasture would prevent many accidental wounds in which maggots might develop.

### Destroy Blowflies

Flies often lay their eggs in blood spots formed on the hides of animals by the crushing of engorged ticks, and the maggots on hatching are enabled to enlarge the punctures made by the ticks and so enter the flesh. The destruction of ticks, therefore, reduces the liability of maggot infestation. Many blowflies can be trapped by exposing the carcasses of small animals or pieces of meat in traps about barnyards, in pastures, near water holes, etc. The bait should be changed every three or four days to prevent maggots reaching full development, and the flies caught should be killed also. By poisoning with arsenic the carcasses of large animals which can not be promptly burned or buried, large numbers of flies can be killed. The animals should be partly skinned, the flesh slashed, and a solution of one pound of white arsenic boiled in five gallons of water should be applied freely. After a few days the animals may be turned over and the other side treated similarly. The carcasses should then be burned or buried.

### Treatment of Wounds

Stock should be carefully watched and when the presence of maggots is discovered in wounds or in soiled wool appropriate remedies should be applied. Chloroform is the best remedy to apply to kill the maggots in wounds. After the wound is cleansed some effective fly repellent such as pine tar should be smeared over the wound and about its edges.

### HOG SHIPPING REGULATIONS AMENDED

Amendment 3 to B. A. I. order 245 effective January 2, 1918, which provides for interstate shipment of hogs for purposes other than slaughter makes some changes, one of which will doubtless stimulate trade in stock hogs to no small extent. Amendment 1 to this order effective July 1, 1917, requires that hogs given "simultaneous inoculation method" of treatment for prevention of hog cholera be held under supervision for a period of seven days before shipment. The new amendments eliminates this period of supervision and provides practically the same restriction as for hogs treated by the "serum alone method." All such shipments however must be made to states the regulations of which provide for the segregation of imported hogs for at least three weeks and subject of course to all other state regulations at destination. Minimum doses of serum and of virus are also designated in the new order.

### SHIPPING LIVE STOCK BY EXPRESS

A carload of 28 fat cows and bulls were shipped by express from Omaha on January 22 to a dealer at Brighton, Massachusetts, to fill an order for live cattle to be slaughtered for Kosher purposes. This novel means of making the shipment was adopted to avoid delay due to bad weather and to freight congestion in the East. A few days later two additional cars were received by the same dealer via express from Chicago. The cattle in the shipment from Omaha were given two feedings en route and when slaughtered dressed an average of 754 pounds to the carcass. Those received in the first shipment from Chicago averaged 903 pounds dressed weight.

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All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.



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4000 Head Both Sexes Same Breeding as Registered Herd  
Elevation 3000 Feet

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Field Notes From the  
Live Stock Men

H. E. Cornwell, Modesto, has rebuilt his herd of registered Holsteins up to about 35 head, including a number of fine young daughters of Prince Hiske Walker.

J. A. Pelanda, Modesto, recently headed his good herd of registered Holsteins with a son of the noted show bull, Hazelwood Posch Ormsby, grand champion at Panama Pacific Exposition, out of a granddaughter of Beauty Pietertje Butler King.

E. F. Young, Modesto, is building up a promising herd of registered Holsteins headed by a good record son of the great young sire, Dutchland Sir Pietertje Creamelle.

A. M. Bibens, Modesto, has a herd of registered Holstein females of which great productive records may be expected, including a number of daughters and granddaughters of Sir Skylark Ormsby Hengerveld. One of the sweetest things in the herd is a young daughter of Prince Hiske Walker out of that great cow, Abby De Kol of Eastbank 2nd. The head of the herd is a splendidly bred young bull that is rapidly developing into a choice individual. This is Aaggie Cornucopia Pauline Count 40th, son of the famous bull Aaggie Cornucopia Pauline Count and the 27.37 pound cow, Nixola Nannette 2nd that milked 657.1 pounds milk in seven days.

E. E. Freeman, Modesto, has an exceptionally pleasing herd of deep, broad hipped registered Holstein cows and heifers, most of the breeding cows being granddaughters of Ignaro De Kol. The herd sire is Segis Pontiac De Kol Dutch, son of Segis Pontiac De Kol Burke and Miss Dutch who made over 30 pounds butter in seven days and 1025 pounds in one year, and her dam is Miss Blaney, 1008 pounds butter in one year. His three nearest dams thus all have yearly records above 1000 pounds butter in one year and also average over 30 pounds butter in seven days.

Luther Thompson, Modesto, is selecting a foundation herd of registered Holsteins with more than average care, building along lines that are bound to make this herd a factor among breeding herds of the state. The splendid young bull heading this herd was mentioned in a recent issue of the Cultivator, son of Sir Chima-cum Wayne and out of the 29.84 pound junior three year old, Chima-cum Maud.

Creamcup Holsteins, owned by M. Holdridge, Modesto, have recently made some remarkably good official records. The great 33 pound cow Tula De Kol Netherland Pietertje came back at past ten years of age and made 34.24 pounds butter in seven days under conditions that were not at all favorable for a high record. Her daughter, Creamcup Tula Pietertje Pontiac, made 29.70 pounds butter in seven days, thus becoming the highest record daughter of her sire, King Pontiac Ruby Burke.

Winifred Hotaling 2nd made 33.92 pounds butter in seven days and 30.54 pounds milk and 131.84 pounds butter in 30 days. She had a previous record of 874 pounds butter in one year, and is the highest record daughter of Brom Bones and out of Winifred Hotaling who is also dam of Winifred Hotaling 3d, 32.19 pounds butter in seven days.

Anselogess of Sleepy Hollow made 32.70 pounds butter in seven days, having a previous record of 897 pounds butter in one year. With this record she becomes the highest record daughter of Anselmo.

Mercedes Barbetta, owned by D. and H. Rowles, was also tested in the Holdridge herd and made 31.70 pounds butter in seven days.

Not only are these records great individually and as a group, but the cows themselves are all of remarkably good type and quality.

CHANGE IN STOCK SHIPPING REGULATIONS

The railroads west of the Mississippi river are revising their livestock contracts to conform to a recent ruling of the interstate commerce commission which becomes effective March 1, 1918, and is of considerable importance to shippers of ordinary livestock in the territory affected. According to the new form of contract shippers of ordinary livestock are not required to declare its value or to pay rates dependent thereon provided the

shipment is described as "ordinary livestock," or the kind or kinds of stock specified in detail. Animals valuable for special uses such as racing, breeding or show purposes should be so described in the contract if special valuation is expected in cases of damage.

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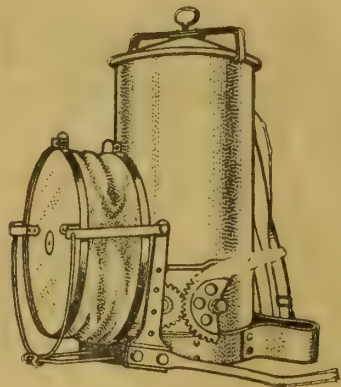
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## Bean and Pea Weevils

Written for California Cultivator by E. R. de Ong



HERE are three species of weevil common in this state, which attack beans and peas. These insects lie dormant in cold weather but become active in early spring, at which time all stocks of beans not intended for immediate consumption should be examined for the presence of this insect, even though none were seen when the crop was stored. If weevil is found in any variety of small beans steps should be taken immediately to check them for this insect breeds in dry beans and a few insects present in February may mean almost a total loss of the stock by planting time. Their presence means not only a shrinkage in the food value but a serious loss in germinating qualities. Infested seed should never be planted for not only will this mean weaker plants but the weevil will be present

bean, and possibly peas, the work being similar in appearance to that of the common bean weevil. This species does not breed through the winter, but emerges from hibernation quite early in the spring, usually in March and April. The eggs are laid through April and May on the young bean pod which is now beginning to form, as this bean is usually grown in California as a winter plant. After the egg hatches the young larva bores through the pod and begins feeding on the young bean, emerging only when it has transformed into the weevil in the late winter or early spring. There is but one brood a year, there being no increase while the beans are in storage.

### Pea Weevil

The pea weevil (*Bruchus pisorum*) has but a single generation a year; the adults appear early in the spring and deposit their eggs inside or on



EFFECT OF WORK OF WEEVIL ON BEANS

when the new crop is setting and thus continue the trouble.

The life history and manner of feeding of all of them are somewhat similar. They range in size from one-eighth to one-quarter of an inch long, the color being gray or brownish with light markings. The head is held at right angles to and beneath the body; the wing covers are short so that the tip of the abdomen is exposed.

### Small Bean Weevil

The small bean weevil (*Acanthoscelides obtectus*) attacks especially our small varieties of beans. The adult weevil feeds on dry beans through the winter, except in the coldest weather, becoming active in the spring and laying its eggs first on the dry beans in the storehouse and later in the year on the green pods or the young bean when exposed by the cracking of the pod. The young larva hatching from these eggs bores into the green bean, causing a slight wound which heals readily and leaves only a slight mark. The larva hollows out the bean as it grows and finally pupates inside this chamber. At this stage the injury can readily be seen, the insect being protected only by a thin membrane. Several of these larvae or grubs may develop at the same time in a single bean, thus ruining it both for food and seed purposes. This weevil breeds readily in dry beans so that seed which is but slightly infested when stored in the fall may be valueless by planting time the following spring or summer.

### Broad Bean Weevil

The broad bean weevil (*Bruchus rufimanus*) attacks the broad or horse

the surface of the newly formed seed pods. The young larva or grub hatching from these eggs bores into the green pod, hollowing it out and leaving only a thin membrane over the entrance to its chamber. Usually there is but a single larva or grub to the pea, this infestation occurring in the field; there is no breeding in the dry pea as in the case of the small bean weevil, hence the extent of the damage is largely determined by harvest time. The adult insect hibernates throughout the winter, becoming active only with the coming of spring.

The damage to both peas and beans is similar; the weevil destroys from one-fourth to one-half the food value of the seed attacked, ruining its market value and injuring its germinating qualities, particularly the ability to mature a crop. The latter point is especially to be noted, for it is a common characteristic of all "weevilly" peas and beans that even when a fair stand is secured from such seed the plants are either sterile or set a very small crop. The injury to the germinating power of peas is very marked even though only a single larva develops in a pea, but with both the small and horse beans two or more larvae may be found in a single seed, and in case of the heaviest infestation the ability of the bean to produce a fruitful plant seems to be destroyed.

Prevention of attack by any species mentioned consists of harvesting the crop as soon as possible, and if infestation has already occurred, of fumigating with hydrocyanic acid gas at the rate of one ounce or more of sodium cyanide to every 100 cubic feet of space, the amount used varying with the tightness of the room.



## Ornamental Garden Notes

Written for California Cultivator by Ernest Branton

## The Primrose Jasmine

When I am asked what is the most satisfactory "really good vine" for general purposes my mind generally suggests *Jasminum primulinum*, the latest introduced and the best of the several species of jasmines. It grows the fastest, has the showiest flowers, has the heaviest and best colored foliage and also flowers in mid-winter. What more can we ask? I have seen it in many parts of California and it always gives satisfaction and is quite hardy. The flowers are large, borne in abundance and in color are a good primrose yellow, also semi-double, a really valuable evergreen climber for all purposes where a vine is needed.

## South American Shrubs

We get few shrubs from South America; the more common, no doubt, are the cestrum but these are not so desirable in any way as some of the escallonias or shrubby saxifrages. Then there are escallonias and escallonias. A half-dozen species are fairly common in California and four of them are white-flowering. Among these *E. Montevicensis* is by far the best and best of all species so far

tried in this state. It is a shrub that looks well at all times and under all circumstances and will fit into any scheme of planting where shrubs are wanted. This species at times flowers so heavily as to become an almost solid bank of white. It is not so easy of propagation as the other species and for that reason other and poorer species masquerade under the name *E. Montevicensis*.

## The Best Broom

The best broom is the one that sweeps away all competitors. This is what *Cytisus candicans* does at all times. It is, in common with all *cytisus*, also known as *genista* and is more commonly sold under the specific name of *fragrans* than under the rightful name of *candicans*. It grows to be the largest, most dense, and most free-flowering, at least in the southern one-half of the state. When well grown it is at time of blooming a solid mass of yellow and is very fragrant. In two years it grows in local gardens from two feet to ten feet in height and is standing alone; will grow to as many feet in all dimensions. Of about ten species I know fairly well I consider this the best.

## So-called Evergreen Dogwood

Some nurserymen have been accused in their respective catalogs of harboring an evergreen dogwood, but I have yet to see one, though local dealers have 'em. This species is not so decidedly deciduous as others, but is not entirely evergreen. It is, however, a very fine shrub which will rise to 20 feet in suitable soil and flowers just as does the fine so-called "flowering dogwood" of the Eastern states. This species is a native of the Himalayas and in addition to its proper name of *Cornus capitata* is also known as *Benthamia fragifera*. It is not hardy in the East, as are the more common sorts but is hardy enough throughout California. While it does not shed all its leaves in winter it "comes mighty near it."

## The Fox-tail Lilies

I feel quite confident that *eremurus*, the fox-tail lilies, may be grown in California and they should be given a trial. It is probable that they should have partial shade, a well-drained soil, be planted deeply and the soil kept cool and moist by a heavy mulch. Fine specimens to the height of 15 feet have been grown in states along the Atlantic Coast. In the damper climate of England and Ireland they thrive splendidly and it is quite probable that in California they will need a copious supply of water. They are still rare in America.

Carbon disulphide may also be used at the rate of ten pounds per 1000 cubic feet if the room is only approximately gas-tight; if not, double the amount of chemical used, or if the room has been especially constructed for fumigating purposes, three pounds of carbon disulphide to 1000 cubic feet of space or three-fourths of an ounce of sodium cyanide to 100 cubic feet should be sufficient at a temperature of 70 degrees Fahrenheit or above. A water-tight barrel covered with two or three thicknesses of glazed paper or tarpaulin tied down tightly may be used where small quantities are being treated. To operate, the barrel is filled with the material to be fumigated and a saucer or shallow pan containing about one-third of a cupful of carbon disulphide is placed on top of the pile, or the liquid is poured over the contents. The barrel should be kept covered for at least 12 hours and preferably for two or three days, for seeds that are to be used in planting the minimum time of exposure should be used. The material is examined carefully for any live insects immediately after treating and again in two or three weeks; if any are found the fumigation is repeated using a stronger dosage or a longer exposure, or else the work must be done at a higher temperature. The fumigated material should be protected against further infestation.

Hydrocyanic acid gas is to be pre-



Hand Cultivators Valuable

Opening furrows for fertilizers in beans and peas.

ferred for fumigating beans or peas to be used for planting as there is less danger of injuring the germinating qualities with this material than there is with carbon disulphide. Moist seeds should not be fumigated with either chemical, particularly in damp weather. It is especially important that infestation of small beans should be treated early, since two or three generations might develop from the time the crop is harvested in the fall to planting time the following summer.

The hot water treatment of beans and peas is quite satisfactory for small lots and may be readily applied to infested seed before planting. The method as recommended by Parker, in U. S. Bureau of Entomology Bulletin No. 96, is to suspend the beans in a cloth sack in a kettle of cold water, quickly raising the temperature until the thermometer reads 140 degrees Fahrenheit, when the beans should be removed immediately. The sack should be suspended in such a way that the sides do not touch the kettle and thus overheat any of the seed, and the beans stirred during the heating process. They may now be planted or dried and stored.

When but a single generation occurs, as in the broad or horse bean and pea, the weevil may be destroyed by holding the seed over from one year to another in tight bins or well-tied sacks, as these species attack only green peas and beans. When more than one generation occurs, as in the weevil attacking the small beans, nothing is to be gained by holding the seed for eventually the weevil will destroy every bean in the sack although only a few beans might have been infested when stored.

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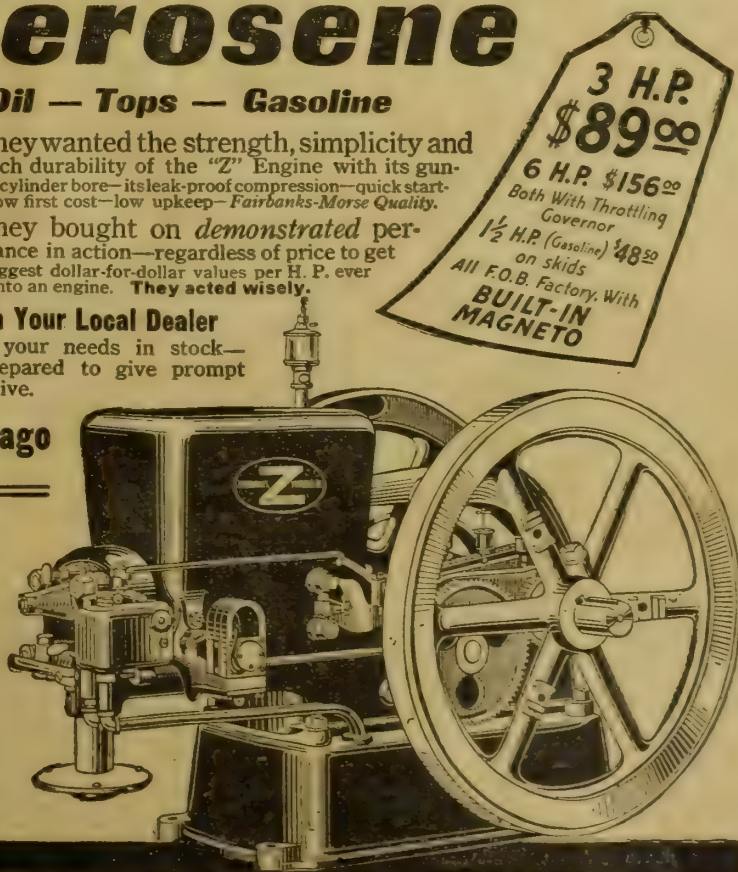
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### TREES

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

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**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

**For Sale**—Fancy and standard varieties of Grafted Walnuts and Pecans. Largest variety of Walnut grafting wood in U. S. We are the oldest and most extensive propagators of walnut varieties in the U. S. Prices reasonable. Tribble Brothers, Lodi, Cal.

**For Sale**—8000 Valencia Oranges and Eureka Lemons, selected stock two and three year buds on sour roots. Large stock never culled nor neglected. 65c while they last. Nursery, Montebello, opposite Grammar School. Address L. F. Thurston, R. D. 3, Orange, Sunset Telephone 35J4.

**For Sale**—Bartlett Pears on Japan blight resistant roots 4-6 and 6-8 ft. Placencia Perfection and Eureka Walnuts on California Black root. All stock of very best quality. Prices reasonable. Write or phone your orders now. Los Nietos Valley Nursery, Downey, Cal. Phone 692.

**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own whittier. References. R. R. Morris, East Whittier, Cal.

**Walnut and Almond Trees**—Mayette, Franquette, Concord, and Willson Wonder on Northern California Black root. Texas prolific and Drake seedling almonds on almond root. Stock is first class, cannot be better. Write for prices. Ekstein Nurseries, Modesto, Cal.

**For Sale**—Valencia Orange and Marsh grapefruit trees. Stock propagated only from Performance Record Trees of best type. Trees that will bear and insure profits. Write today. L. V. W. Brown, Riverside, Cal.

**For Sale**—5000 Royal Hybrid and Black Walnut trees, two and three years old, ½ to 1½ inch caliper, 3 to 8 ft. Also Grafted Eureka and Eureka grafting wood. John Miller, R. F. D. 4, Box 278, Lodi, Cal.

**Pear Trees**—Offer several thousand Bartlett, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton, Ore.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator.** The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon trees** one year past, ½ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574, Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**Bartlett Pears**—French prunes, Standard, Apples, Cherries, Quinces, Plums, etc. No agents, save 50 per cent. Lafayette Nursery Co., Lafayette, Oregon.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**Apricots, Olives, English Morello Cherries and Arizona Ash.** First class trees. C. E. Moyer, Hemet, Cal.

**Budded Avocados**—All leading varieties. Address Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, Cal.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, Cal.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsurugi, 23rd St., Upland, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale. Inspection invited.

**Budded Orange, Lemon and Grapefruit trees**, 2 years old. K. Niwa, Box 306, Glendora.

### TREES

**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**Citrus**—7000 Navel, Valencia, Eureka Lemons, two and three years. Located Whittier and Glendora. 10,000 one year Villa Franca, Lisbon, Eureka and Seedless Lemons. Located near San Diego. Clean thrifty stock. Our own budding, buds cut from record trees. You will not make a mistake in ordering this stock. Cyrus W. Whittier, Citrus Nurseries, Glendora, Cal. Home 303.

**Eureka Lemon Trees**—Have some first class 3 and 4 year buds for 25c each. Lots of 100 or more. Fine root growth and dandy trees. Some M. S. grapefruit same price. Phone Bdwy. 1720, Smith Citrus Nurseries, 816 Washington Bldg., Los Angeles.

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**For Sale**—Grafted Walnut Trees, Placencia Perfection, 6 to 8 feet; Eureka, 4 to 6 and 6 to 8 feet. Grafted on northern black roots and scions of known parentage used. Prices right. Address C. W. Storr, Rivera, Cal.

**Florida Sour Orange and grapefruit**, seed this season's fresh seed. No citrus canker this section. Government affidavits furnished. Seed scarce, order quick. Thirty-five dollars per bushel. Cash with order. Dixie Seed Co., Leesburg, Fla.

**Mission and Manzanillo Olive trees**, all sizes and prices sure to satisfy. Write us at once for any amount. We want to sell. Imperial Valley Nursery & Seed House, El Centro, Cal.

**For Sale**—About 75,000 sour orange seedling trees, average height 12 inches. Seed planted last April. Have had good care and are in fine growing condition. Frank A. Curtis, Upland, Cal.

**Pistache Scions** best imported varieties from bearing trees. Our pistache orchard largest in United States. Pecan scions finest varieties. Tribble Bros., Elk Grove, Cal.

**Would like to correspond with those who want to plant strictly fruit wood, budded Eureka Lemons.** No shade trees. H. Clements, Glendora, Cal.

**Walnut Grafting Wood**—Willson's Wonder and genuine Franquette. Encinal Nurseries, F. C. Willson, Prop., Sunnyvale, Cal.

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**A Few Mission and Manzanillo olives**, good stock, ½ to 1½ inch, 20c each in nursery. Roy R. Mathews, Buena Park.

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**For Sale**—Citrus trees and seed stock. B. C. Dodson, Glendora, Cal.

### WANTED

**Wanted to lease**, good vegetable or general farming lands, with good water conditions. Must be close to market and located in Southern California. Jno. R. James, 602 O. T. Johnson Building, Los Angeles.

**Wanted**—Pure bred Toggenburg does, bred to pure bred Toggenburg buck. Must be registered with A. M. G. R. A. of Dayton, Ohio. J. C. Chadbourne, Suisun, Cal.

**Wanted Position on stock farm** by young married man. Can manage dairy route, good reference. D. R. Newmann, 3697 S. San Pedro St., Los Angeles.

**Wanted**—Rooted Thompson seedless grape plants sufficient for 5 acres. Lester Jordan, 422 S. Rugby St., Huntington Park.

**Wanted**—To hear from owner of farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

**Wanted**—Sudan and Amber Cane Seed in large quantities, also hay. Box 501, Fowler, Cal.

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**For Sale**—New Zealand Red rabbits and fur bearing young stock. "The Western Rabbit Book" 50c, everything pertaining to the business, latest out. 13 chapters, illustrated, tanning, etc. Raising rabbits is a pleasant and profitable work, meat, warmth and fertilizer. Making a living on an acre and care of rabbits. 25c. Mrs. C. A. Richey, 616 N. Benton Way, Los Angeles.

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**Several New and Slightly Used Engines.** ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

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**White Leghorn Baby Chicks**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us, \$11.00 per 100. Lyon Hatchery, Gardena.

**Baby Chicks**, Ancona, Rhode Island Reds, \$14.00 per 100, Barred Rocks, \$15.00. Quality White and Brown Leghorns, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. Agent for Poultrymen's Co-Operative Association. Incubators and Brooders. Send for catalogue. D. E. Dike, 743 So. Los Angeles St., Los Angeles.

**For Sale**—Pure Strains baby chicks from selected flocks, White Leghorns, R. I. Reds and Barred Rocks, hatches every week, order filled in rotation and shipped anywhere. Also Buckeye and Jubilee Incubators and Brooders. Stiles Poultry Supply Co., 645 G Street, San Diego.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Thoroughbred B. Rocks exclusively**—Hen record 190 eggs in 10 months. Trap-nested pedigreed matings for 1918. Pen 1, \$2.50; two, \$1.50 per 15 eggs. Baby chicks, March and April, 25c limited number. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, Cal.

**For Sale**—Anconas the most popular breed today. "There's a reason." Small eaters and heavy layers of large eggs. Five breeding pens. Eggs of guaranteed fertility \$1 per 15; \$6 per 100. A. E. Nelson, El Monte, Cal.

**Huddleston Blue Andalusians**, great winning and laying strain, Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**For Sale**—D. W. C. Strain, Single Comb White Minorcas, large, pure white, perfect type, bred to lay. Choice birds, also eggs for hatching. D. W. Clark, Star Route, Box 41, El Centro, Cal.

**For Sale**—4 R. I. Red cockerels 9 months, 3 bright and 1 dark red at \$3.00 each; 30 R. I. Red pullets at \$1.50 each. One of the best utility strains. R. Daniels, Walnut Creek.

**Petaluma Hatchery**—Can ship day old chicks to points reached in three days. Why not have the best. We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

**The Most Difficult and important thing about raising chickens is to brood them properly.** Write me and I will tell you the best and cheapest method out. John Miller, San Gabriel, Cal.

**Am Booking Orders for chicks from Barred Rocks, R. I. Red and White Leghorn stock for spring delivery.** Send for circular. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain) Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Baby Chicks (White Leghorns)** shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

**Baby Chicks from Forney's famous heavy laying strain of Single Comb White Leghorns.** \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorcas, and Buff Orpington chicks with the Stevenson Hatchery, Watsonville, Cal.**

**Baby Chicks**—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynier, Lathrop.

**Pit Games, Reds, Blues, Grays—Cocks, stags, hens, eggs.** R. H. Crane, Route 3, Santa Rosa.

**Buff Leghorn Eggs** \$1.50 per 15; \$9 per 100. Mrs. H. W. McClure, Glendale, Ariz.

### POULTRY

**Order Now**, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh cut bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

**Big Profit Now Raising Our 200-280 Egg Leghorn, Wyandottes, Anconas, Rocks, Reds, Minorcas, Orpingtons, Brahms, Ducks.** Thousand chicks, eggs, weekly, reduced February. Laying pullets, hens. MALES HALF PRICE. Many repeat orders. Hundreds customers making money. One cleared \$305 on 48 hens, another \$617 on 110 last year. James Beeson, Pasadena, Cal.

**Baby Chicks and Eggs**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

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**Baby Chicks**—All good strong youngsters. Hatches every week. White, Brown and Buff Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Baby "Chicks" and Eggs for Hatching** from pure-bred McFarland strain S. C. White Leghorns. Carefully culled and Hoganized for heavy egg production, not simply "CHICKS" but stock as well. Sonoma Valley Hatchery & Poultry Yards, Sonoma, Sonoma Co., Cal. R. D. 2, Box 48. F. J. Hansen, Prop.

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**White Leghorns—White Rocks**—Highest class of thoroughbred stock. Chicks, Leghorns, \$15.00 per 100. Rocks \$20.00 per 100. Eggs \$2.50 per 15. \$10.00 per 100. Eggs from special pens of high class exhibition type \$5.00 per 15. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

**Baby Chicks**—Leading varieties. We guarantee safe arrival and full count; strong vigorous chicks from the finest flocks of free range stock in this country. 1918 price list and instructions on care of baby chicks, if you mention this paper. Lasher's Hatchery, Petaluma, Cal.

**For Sale**—Baby chicks from fine thoroughbred heavy laying stock. White Leghorns, 100, \$12.50. Rocks and Reds 100, \$15.00. Hatching eggs 15, \$1.25, 100, \$6.00. McConnel's Black Minorca eggs, 15, \$1.50, 30, \$2.50. Bronze Turkey eggs, 12, \$4.00. W. H. Rails, Orange, Cal.

**Baby Chicks** from my vigorous heavy-laying strain of First Prize winning Anconas, \$18 per 100, \$80 per 500. Hatching eggs \$1.50 a setting, \$7.00 per 100. Kaj Paulsen, Route F, Fresno, Cal.

**East Side Poultry Yards will hatch little White Leghorns** from two and three year old stock. Quality and price will suit. The party that rears chicks this year is wise. E. J. Look, 255 S. 18th St., San Jose, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

**Hatching Eggs**—S. C. White Leghorns. Bred-to-lay hoganized birds from Pine Tree Strain. Fertility guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns, "Quack-less" White Muscovy dux, White Embden goslings, stock, eggs and babies.** Stamp for prices. White Star Hatchery, Kerman, Cal.

**Buff Orpingtons, Buff Leghorns, Eggs** \$1.50, \$3.00 and \$5.00 for 15. Satisfaction guaranteed. Cockerels and cock birds for sale. W. L. Bartholomew, Chino, Cal.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**Winter Laying S. C. Reds**, linebred from New York, Los Angeles and laying contest winners. Choice cockerels \$5 and \$10. Eggs \$3. W. M. Marquam, Bishop, Cal.

**"Eastman's Bred-to-Lay" Hoganized, Trapnested, Barred Plymouth Rocks, Spring Chicks, Eggs.** Fairmead Poultry Farm, Fairmead, Cal.

**Buff Orpingtons, Buff Ducks, Bourbon Red Turkeys.** Hatching eggs: baby stock; mating list. The Ferris Ranch, 8, Reservoir, Pomona, Cal.

**Trapnested White Leghorns**—Official 200 egg records, also eggs from above \$20 per 15, \$8 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

**For Sale**—Rhode Island Red baby chicks from our carefully selected matings, \$14 per 100. Williams Poultry Ranch, 236 No. Gage, Los Angeles.



## HOGS

**The Billiken Brand of Chester Whites**—There is right now a big shortage of swine in California. The output of 1918 will show even a greater shortage unless the farmers of this state get busy and raise more hogs. Good breeding stock is scarce and hard to get. **THE BILLIKEN BRAND** represents the best obtainable; they are of that mellow type that mature early and are such satisfactory easy feeders. Get started with this strain and help out the Food Administration and your own pocket as well. Write me your wants—do it today. I can still furnish first class animals at reasonable prices. C. B. Cunningham, Mills, Cal.

**Grape Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more boars left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 27th, and a few bred gilts. Our herd won the Premier Breeders' Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massave Orange. Watch for the sensational offering of sows bred to this great trio which sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal., W. Bernstein, Proprietor.

**For Sale**—Several four and five months old Poland-China boars, registered. Something that you will be proud to place at the head of your herd. Write for price and information. Address H. B. Peake, Manager, 358 11th St., San Bernardino, Cal.

**Superba, World's Grand Champion Poland-China boar** and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Duroc-Jerseys**—Sold out of bred gilts. Two service boars. One of them an outstanding individual for sale. Also Fall Pigs, both sexes. Twenty-three ribbons on 11 entries, including 6 championships, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

**Berkshires**—First prize junior boar; first and second senior boars including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles.

**Duroc-Jerseys**—The blood of champions such as Defender, Orion Chief, Taxpayer "13," Golden Model. A few choice fall gilts of Grand Champion. Breeding at reasonable prices. T. R. Bond, Tip-ton, Cal.

**For Sale**—18 Poland-China brood sows, 3/4 pure bred, 8 with litters. 1 registered pure bred Berkshire boar. 66 pigs 3 months old. All vaccinated except sucking pigs. H. R. Greene, Riverside, Cal.

**Chester White Thoroughbreds**—2 1/2 months, \$10.50; 4 1/2 months, \$20; also 3 fine 9 months gilts. Cedarhurst Ranches, R. D. 2, Sacramento.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**Recorded Poland-China boar**, 18 months old, sired by Superba. Bargain at \$50.00. Immuned, and tried breeder. C. R. Hanna, Riverside.

**PLW Durocs**—Golden Models and Great Wonders are the most consistent winners at every show. Peters, Lamson & Walker, Devore, San Bernardino County, Cal.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Shasta County, Cal.

**Durocs—P. & L's Defender** by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera Immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**For Sale**—Weaned pigs, thoroughbred Berkshires. Inquire of J. Pfister, Oroville, R. D. "B," near Porter place.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

## MISCELLANEOUS

**Famous Hairy Peruvian Alfalfa Seed**—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

**Daily Demonstration of Distillate Vapor**—Machine exterminating squirrels, gophers. Price \$20. U. S. Patents for sale at 643 S. Los Angeles St., Los Angeles, Cal.

**For Sale or Exchange**—1914 40-horse Auburn auto in good condition. \$200 cash or will trade for 200 White Leghorn hens. J. L. Sharar, R. D. 1, Orange, Cal.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

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## KILL GRUBS IN BACKS OF CATTLE

If the grubs which cause the lumps or swellings under the skin in the backs of cattle are allowed to remain they will complete their growth, drop to the ground and transform to heel flies, which may re-infest the cattle during the spring and summer. The grubs weaken the cattle, cause them to fall off in flesh and milk, and decrease the value of the hide. The beef in the immediate vicinity of a grub becomes slimy and of a greenish color and is known to the butcher as "licked beef." The damage to the hides is usually placed at one-third their value, and the loss of beef to each infested animal ranges from \$4.00 to \$6.00 in pre-war times. The cattle are also injured in the spring by the presence of the fly which causes them to fret and stampede. The grubs injure the hides and beef from January until June.

T. J. Talbert of the University of Missouri College of Agriculture offers the following suggestions for eliminating warbles: The grubs may be pressed out through the opening at the top of the swelling. A sharp knife and a pair of tweezers will often facilitate the work of removing the grubs. Care should be taken to crush all the grubs removed to prevent their future development and transformation into flies. It is advisable to examine the cattle for lumps or swellings over the back every two or three weeks during the late winter and early spring in order to destroy the pest. Various oils are often used, which may be either smeared over the infested regions or applied to the mouth of the breathing hole of the grub. One or two applications are usually sufficient.

The treatment may also be given wild cattle by driving them through a chute with a man on either side of the chute equipped with an oil can filled with kerosene, mercurial ointment or turpentine. As the cattle pass through the hand is pressed over the backs of the animals and each lump or swelling is treated with the oil by inserting the slender nozzle of the can in the opening at the top of the lump.

Arsenical preparations and tobacco decoctions are often used as sprays or washes for the backs of cattle, but the greasing lotions and oil sprays are usually more effective because they are more penetrating.





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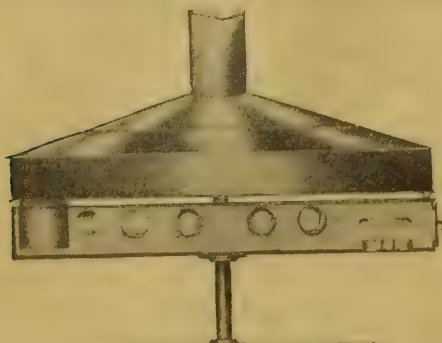
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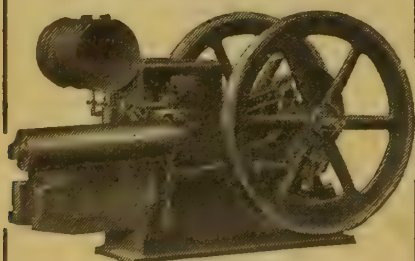
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## Hens and the Farmer

Written for California Cultivator by Jean A. Koethen



HERE is a new slogan from the food administration—another new slogan, I should say, for it has a plenty, and they are all new—one that is both apt and timely. If we must raise more meat, what better meat can we raise than chicken? If we must do without meat, what better substitute is there than eggs? And who can so easily produce both chickens for meat and hens for eggs as the farmer? Here is the slogan: "One hundred hens on every farm, 100 eggs to every hen." A splendid slogan for the Missouri or Illinois farmer who feeds his hens by turning them loose in his grain fields and is thankful for whatever eggs they lay, but one that should be amended for California, where the hen that lays only a hundred eggs a year can hardly show her face in respectable society. The California hen is for the most part a bred-to-lay White Leghorn, and if she cannot lay 150 eggs in a year with feed costing what it does today the sooner she goes to the butcher the better. So let us make our California slogan, "One hundred hens on every farm, 12 dozen eggs to every hen."

Why 100 hens on every farm? First, because the farmer is in a better position than anybody else to produce more poultry and more eggs. The commercial poultryman has been hard hit by the speculation in poultry feeds, and so far the food administration offers him no relief. It may compel him to keep the hens he has, but it cannot compel him to raise more. The backlotter is doing the best he can, but he has no room for growing feed. The fancier is doing well if he holds on to what he has already won. The farmer can raise a good deal of his feed. If he is a grain farmer he already has the feed. If he is an alfalfa farmer, he already has an important part of his flock's ration. If he has only a desert claim, he can raise milo maize and other sorghums and have his patch of alfalfa or barley, or better still, both. Second, because the farmer can raise poultry at greater profit than anyone else. His feed costs less. His land, being used for a variety of crops, can be used for poultry without additional outlay. The poultry manure is of great value in keeping up the fertility of his soil. The birds, when they are allowed to range, do a good deal of cultivating and destroy a good many insects.

Third, because chickens on the farm offer one of the best means of utilizing the energy and interest of the children of the family. Poultry clubs for boys and girls are as yet little in vogue in California, but they are numerous all over the East, and the fashion is headed this way. I would not dare say that all children can be induced to assume the responsibility of caring for a flock of chickens, but many can, and most children, if they are properly encouraged, can be very helpful about the poultry yard.

Fourth, because poultry is only one of many farm crops and can be rotated along with the others, utilizing spare time and waste feed and adding not a little to the family income. Fall with the California farmer is not the slack time it is in the Eastern states, yet there are few farmers who could not if they wished fine the time to hatch a hundred chicks in September or October or to care for them till after Christmas when they bring a good price as roasters. The farmers

of the south coast of Massachusetts did this for years and built up a reputation by doing it.

Fifth, because 100 hens is just a good sized farm flock. Professor Dougherty says there are few farms in California that do not already carry 50 hens. Fifty more would not add greatly to the labor or expense of caring for the flock. One hundred hens in a single house and run can be fed in practically the same time 50 would require. Cleaning is a matter of only a few minutes more. More chicks must be raised to renew the flock from year to year, but if the chicks are bought from a hatchery they can be raised in one flock with less labor than the care of half a dozen mother hens would require.

Sixth, because poultry is on many farms and can be made on most the most profitable crop of all. No other crop is as little dependent on the weather. Frost, rain, wind, drouth, unusual heat, all these come and go, destroying other crops, but the poultry crop goes right along. Oranges may fall; blight take the potatoes; drouth spoil the grain crop; and deciduous fruit be short, but the hens keep right on laying. No other crop will bear the abuse and neglect the poultry crop does, or is so responsive to proper care and attention.

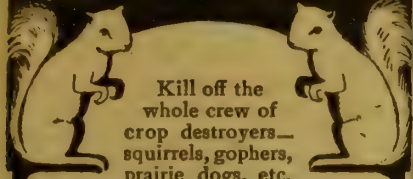
When I use the word "farm" I am thinking of a tract of land of not less than 20 acres. A farm of ten acres is a "ranch"; a farm of five acres is often called a ranch; real estate advertisements often speak euphemistically of one or two acre farms; but I doubt if the words of the above slogan can properly be applied to less than 20 acres. On a fruit ranch or orchard to from five to 20 acres conditions differ considerably from those contemplated by the food administration. Everybody who has any land at all ought to keep a flock of chickens. Let us be perfectly clear about that. But a flock of 25 hens may be enough. All depends on what is raised and how much time the farmer or rancher or his family can devote to poultry. One of the best paying flocks I have visited lately was a flock of nearly 400 hens in the middle of a five acre orange orchard. The owner of this flock, I suspect, makes his hens his main crop and his oranges the side line. This is a fine thing when it can be done, but this man feeds as any poultryman feeds. His hens have no range, and no feed but grain feed is raised between the trees. He is a poultryman rather than a farmer.

The man with a ten acre orchard may find 50 hens all he can care for. Very well, his 50 hens may still produce as many eggs as another man's flock of 100 hens. The fault laid at the door of most orchardists and ranchers is not that they do not keep hens but that they keep such poor hens. "Just chickens," is the phrase that describes the ordinary farm flock. Few farmers, I believe, pay much attention to breeding. They hatch from the whole flock and use any kind of male bird they happen to have. If the resultant pullets are productive, well and good, but it is all a matter of chance. And few farmers devote themselves to one breed exclusively. Doubtless they start with one, but every breed recommended must be sampled, and the flock soon has all the colors of a crazy quilt. If every poultry raiser who reads this would resolutely dispose of all but one breed, then buy a good male bird of the same breed to mate to his hens, he would have a start toward a pure bred flock.

As to breed it matters little. White Leghorns produce most eggs for the amount of feed consumed, but if meat as well as eggs is wanted one of the American breeds or the Orpingtons may give better results. The world was never in greater need of meat than it is now. Every family that can raise a part of its own meat in the form of chickens is doing the country a service and helping just that much in winning the war.



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Kill off the whole crew of crop destroyers—squirrels, gophers, prairie dogs, etc.

Gas 'em with Carbon Bisulphide quickly, easily and economically.

One burrow of squirrels will destroy more grain than your family can save in fifty wheatless days. Remember—these ground pests cost the farmers of the Pacific Coast more than \$6,000,000 last summer. So be forehanded—be truly patriotic—conserve the seed in your fields.

The University of California says: "From November until the end of February (the rainy season in California) the best way to attack the ground squirrels is to fill their burrows with gas from Carbon Bisulphide."

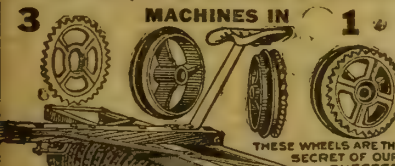
So too in other states! If the ground is full of moisture, whatever the month may be, Carbon Bisulphide is the best killer of squirrels, prairie dogs, gophers, etc.

A squirrel killed before March is worth a dozen killed later. Because—most young squirrels are born late in March or early in April. So go the old squirrels now. Write today for prices and interesting folder telling how Carbon Bisulphide—the profit-saver—works.

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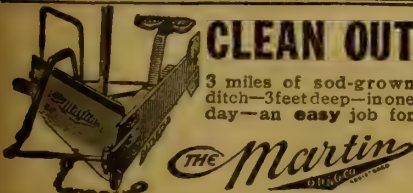
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## Insect Enemies of the Home Vegetable Garden

By F. H. Chittenden in Charge of Truck Crop Insect Investigations, Bureau of Entomology, U. S. D. A.

From the time the seeds of the garden crops are put into the ground until the time the crops are harvested, a succession of insect enemies may appear, each of which must be fought by the methods that experience has shown to work best in the particular case.

Insects are classified into (1) chewing or biting forms which devour the leaves and other portions of plants; and (2) sucking forms, which injure and destroy plants by draining their vital life juices. For the first class, arsenicals are the best remedies; for the second class, contact poisons are used.

Gardeners should learn to know the insects which are useful in destroying injurious insects. Prominent among these is the convergent ladybird. It destroys not only all forms of garden plant-lice but the eggs of various insects. Other beneficial insects are wasps, ichneumon and chalcids (minute wasplike insects), ground beetles, soldier bugs (syrphus flies, tachina flies, and lace-wing flies. Were it not for the natural enemies of cabbage worms, army worms, and similar pests, all vegetable crops probably would be failures.

The gardener who starts with a clean soil may do much to keep insects out, and thus save the trouble and cost of applying sprays. Prevention is better than cure, especially in the home garden, where usually the same ground must be planted on year after year. Some of the worst garden troubles are brought in on the roots of plants and remain in the soil to

attack the next crop. So in buying plants of any kind one should be sure that they are free from insects. The roots should be clean and fibrous, not swollen or knotted.

In harvesting fruits and vegetables that are to be stored handle with the greatest care to avoid bruising. Certain insects such as the potato tuber moth gain access at points where the natural protective covering is broken.

Neatness, cleanliness and order in the garden help in the fight against insects. As a general rule, the residue of the garden such as corn stalks, potato tops, etc., are to be turned under to improve the soil. Do this promptly, so that insects may not be harbored by the rubbish. Weeds in the garden and around it harbor insects, particularly if the weeds are related to the cultivated plants. Plant lice, red spiders, and other insects invade the garden from neighboring weed borders. Cabbage pests live on wild mustard, shepherd's purse and related weeds. Just as soon as any crop is gathered, spade up the ground, bury the old remains deeply and plant something else. Except in the extreme North, rye or oats can be sown to give winter cover.

Farmers have found that by rotating their crops they reduce the injury from insects and also increase the fertility of the soil. This principle applies to the home garden, where, if possible, it would be better to make a new plan each year, placing each vegetable where some other grew the year before—peas on the old tomato ground, beets and carrots after the corn, etc.

## Why English Bread is Cheap

Some are still asking why bread is cheaper in England than in America. In England a four pound loaf of war-bread sells for 18 cents, a two pound loaf for nine cents and a pound loaf for five cents. These low prices are maintained in England in spite of the fact that the wheat must risk the submarine zone.

The explanation is simple. English bread is heavily subsidized. It is cheap to the people but costly to the government. In Great Britain the government controls all the home grown grain and imported wheat. This is sold to the mills at a price that, under rigid control, puts a cheap loaf on every man's table. England's cheap

bread, however, costs the government \$200,000,000 annually.

Another reason why the Englishman pays less lies in the quality of the bread. In Great Britain a much higher per cent of flour is extracted from the wheat than even the new regulations require in America. A substitution of 20 per cent of other cereals or potatoes is compulsory in bread making and 50 per cent is allowed.

The high per cent of substitution and government controlled prices explain cheap English bread. The yearly deficit of \$200,000,000 on English bread production is paid by the government, but comes out of the people's pockets eventually in the form of general taxation.

## State Bulletins

The University of California publications are being mailed by the experiment station. They are free to Californians. Write the station at Berkeley for them. Bulletin 286, "Commercial Fertilizer," by P. L. Hibbard, gives list of fertilizer dealers of California with analysis of various brands of fertilizer. Circular No. 184, "A Flock of Sheep on the Farm," by R. F. Miller, is preaching the same sermon which the Cultivator has been endeavoring to preach for some time, "Save some of the farm wastes by keeping a flock of sheep." Dr. Thomas Forsyth Hunt is author of No. 187, "Utilizing the Sorghums." Dr. Hunt refers to the great value of the sorghum grains as stock and poultry feeds

and refers to these valuable grains as a wonderful help in increasing livestock production in this state, and we want to add that after eating some exceptionally fine Milo muffins, that Dr. Hunt might well have added that the sorghums may be a great factor as a human food.

California is securing a respectable showing of pure bred Guernseys. There were in 1917, 1930 registered animals of this breed in the state; 478 bulls and 1452 females. The total for the United States is something over 48,000. Wisconsin is the biggest Guernsey state, of course, with New York and Pennsylvania coming in second. There are nearly 23,000,000 pure bred cattle in the United States of all breeds.

## Good Plowing

is necessary for good crops, and good plowing is largely dependent on the plow you use.

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Moline No. 66 Sulky

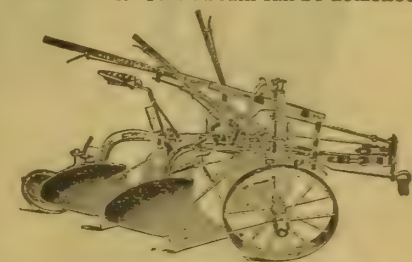
Built especially for the hardest kind of usage and deep plowing. Will turn a furrow 11 inches deep. Frame, wheels, axles and beam are extra heavy and substantial. Guiding lever controls the hitch so that the plow can be held to the proper amount of land through varying soil conditions. Dial hitch gives a wide range of adjustment and permits use of a strung out hitch.

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## QUESTIONS AND ANSWERS

Continued from Page 233

to mix one pound of water glass to five quarts of water and I followed directions.—Subscriber, Whittier.

The water glass solution was not too weak. One part water glass to ten or even more of water is the reg-

mixed in before it is entirely cold. My experience is that eggs do not keep as well in glass, even when the solution is properly mixed, as they do in a wood or an earthen crock.—J. A. K.

## CAULIFLOWER PROFITABLE

Continued from Page 227

Vegetable Growers' Exchange, there

so very unfavorable that less than half that number of cars will be handled. From the Compton district there will be shipped this season over 1000 carloads.

To watch the handling of this crop through a modern packing house is indeed most interesting. The new packing house operated by the exchange has been in use since December 15, though not yet completed. It is managed by Fred R. Bright. The

house is 50 by 240 feet, most of it two stories in height. The shoo for the crates are slid down the chute from the cars where they are caught by carriers and taken in bundles to the second floor. They are automatically dropped on an endless belt carrier running nearly the entire length of the building, and the laborers take them from this long carrier and stack as near to the crate making machine as possible. The stacks are not plac-



Crated on Place and Trucked to Car

Mr. Yingling does his own packing and is shown in the photo with book checking the crates as loaded. Nelson Ward stands with hands behind him, near the truck.



Harvesting Cauliflower

On the ranch of A. C. Yingling near Compton. The wagon has specially constructed axle bent at right angles just inside of hub of wheel and raised several inches above that of the normal wagon. Some places in the field the cauliflower stands between three and four feet high, and this elevation is necessary to save injury. Mr. Yingling is shown at extreme left.

ular proportion. But it should all have the jelly-like consistency which only part of yours had. Probably you did not mix it thoroughly. The water should be boiled and the water glass

are members controlling over 1700 acres. These 1700 acres could produce from 1500 to 1700 cars in good years. Unfortunately, this year of drouth and dry atmospheric conditions has been

ed directly upon the floor, but on stands with bottom a few inches above the floor. When a stack six or seven feet high is wanted, close to the nailing machine, a small four-wheeled steel truck is run underneath and with lever it is extended or-lifted until it raises the entire stack of shoo, and instantly the operator walks away with the loaded truck.

Owing to the manner of making complete crates are not turned out by the nailing machine, but the ends are, and but little hand work is necessary to complete the crates which are passed in long chutes down to the packing room.

The packing room covers the entire ground floor of the 50 by 240 feet. As the cauliflower is delivered at the door, sometimes in big trucks with trailer attached, it is tossed from the wagon to the endless carrier, along each side of which the packers sort into two grades, or sometimes, where the grade of the entire load is not the highest, it is given a "field run" grade. Besides this field run grade and the fancy and choice, there are the culls packed in casks with salt to be used later for pickles.

The crates are expected to hold about one dozen head. Some heads, however, are of such size that only a half dozen can be placed in one crate. It takes 536 to 550 crates to fill a car, and they bring the grower anywhere from 40 cents to 80 cents per crate, according to quality.

But a word about the farming or growing end. A. C. Yingling who is growing 36½ acres this year and is doing some special work on seed production, told us that the first seed he planted cost him \$75 per pound. This is not quite so serious as it appeared at first, for one pound will grow plants sufficient for four acres. The \$75 price no longer obtains, for \$40 is now the highest expected, and some sell as low as \$10 per pound. The seed is planted around July 1. After a few weeks in seed bed the little plants are lifted and planted in rows 30 to 36 inches apart, about 7000 plants per acre. Intensive culture is demanded. In a season such as the past has been thorough and deep irrigation about every nine days is essential.

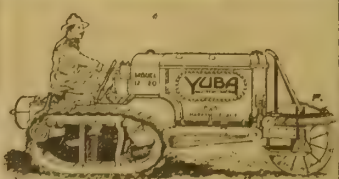
The season which began in December will continue for several weeks, and it is now anticipated that the moister weather of the past few days will greatly increase the output in quality and quantity. Compton is proud of her cauliflower industry. It is little more than four years old, and Nelson Ward, one of the most persistent boosters for Compton, a pioneer who has spent nearly a half century there, insists that Compton and that portion of Los Angeles County is showing the world one of the finest agricultural products it has yet produced.

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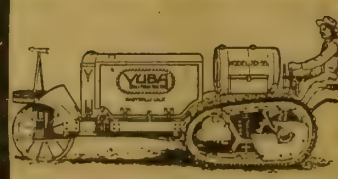
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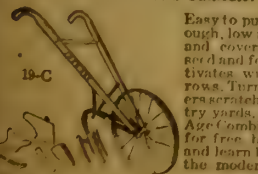
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Household Department

SURGICAL DRESSINGS FOR THE RED CROSS. FOUR BY EIGHT'S

Written for California Cultivator  
By Ida M. Blake

You take a piece of gauze, they say,  
And make it four by eight,  
Keep your selvedge just this way,  
Then fold it so; but wait,

You see those threads all loose around?  
You must not leave them so,  
For if they get within the wound,  
The "Sam" to heaven might go.

Now find the center, pretty near,  
And fold it nice and flat.  
Now fold again this way, you hear?  
Then take your knife and pat.

Don't leave your corners sticking out,  
Or roll the selvedge o'er.  
Don't lose your patience, neither pout,  
Remember what it's for.

THE WHITE CROW

By Jean Hickenlooper, in Youth's Companion



OME," said the family cat to Beth one day, "I will tell you a tale that my grandfather once told to me."

So Beth sat down in a shady nook by the garden wall and listened attentively.

"Once upon a time there were six black crows and one white crow. The white crow longed to be black because the others laughed at him. 'I will go to Grandfather Owl,' he said, 'for he is very wise. I will ask him how I can become black.'

"So he flew to the Owl Castle, but Grandfather Owl was asleep. The white crow sat down to wait, and at last, when the stars began to twinkle, Grandfather Owl awoke, put on his spectacles, and looked out.

"Good evening, Grandfather Owl!" said the white crow. "Will you please tell me how I can become black?"

"Who? Who? You are already wearing a very handsome coat," said Grandfather Owl.

"But my brothers and sisters and cousins and neighbors all laugh at me," replied the crow, "and that is why I long to be as black as they."

"Oho! Oho!" said Grandfather Owl. "I see. You are afraid of being laughed at. That's a very foolish reason for changing your clothes, in my opinion; but if you wish it, certainly I can tell you how to blacken your suit. Do you see the smoke coming from yonder house? Go sit on the top of the chimney and your wish will come true."

"Joyfully the white crow did as he was told, but very soon he hurried back to Grandfather Owl. 'O grandfather!' he cried, 'the chimney was so hot it burned my feet.'

"No good things can be got without trouble," replied the wise owl.

"But, pleaded the crow, 'is there no other way in which I can become black?'

"Oh, yes, there are other ways, if you are brave enough to try them," replied Grandfather Owl. "Take my advice, and go to the man in yonder town who is painting a house black. He may be hard to find, but you will be rewarded if you search well."

"So, thanking the owl, the crow again hurried away, and soon found the painter. Not waiting, in his joy, to look at the paint, he plunged into the bucket. There he flopped about and cried, 'Help! Help!'

"The painter dragged him out. 'Ho, ho! A red crow!' he cried, and tossed him into the air.

"Whatever shall I do?" wailed the crow. Then away he flew to Grandfather Owl. 'Grandfather,' he whispered, 'I have made a dreadful mistake! Oh, what shall I do?'

"Grandfather Owl looked sadly upon him. 'Look before you leap,' he said. 'Go to a store and pick out a bottle of black ink.'

"Away flew the crow, and dashing into a bookstore, he seized the first bottle he saw. In great glee he carried it to a stone and broke it above him. How spattered and happy he was, for he believed himself to be black at last!

"Just then some saucy sparrows flew by. 'Oh, see!' they cried. 'A parrot! A red and green parrot! Where did he come from?'

"Then the crow knew that he had made another mistake, and in sorrow hastened to Grandfather Owl. 'What shall I do?' he wailed again; but Grandfather Owl had lost patience with him, and sternly replied, 'Go pull all your feathers out, raise a new crop, and be content.' But the poor crow wept, until at last Grandfather Owl took pity upon him, and said, 'I have one remedy left. If you fail to obey my orders this time, you must ever remain a disgraced crow. Go at once and bathe in the creek. Wash off as much as you can of those colors; then, while your plumage is still wet, fly far to the east where the people have emptied soot from their stovepipes. Roll in it well, and you will have your heart's desire.'

"So the crow did as he was bidden, and behold! to his great joy he was indeed a crow of shining black feathers. All the other crows flocked about him to admire his wonderful new coat. They placed a crown upon his head—for was not anyone worthy to be king who had power to change his plumage?

"But alas for the power of owls and crows! One day a playful April shower caught him and washed him as white as snow.

"Oh, what shall I do? What shall I do?" cried the king, and hurried to Grandfather Owl.

"Do?" said the owl. "Do nothing. Know you not that you are the king? Kings should always be white."

"So the king flew back to his kingdom, where his subjects awaited him.

"A king," said he, "should always be white." And the others, bowing their heads, believed; for was he not their king?"

The family cat paused and looked at Beth.

"Dear Family Cat," said Beth, "that was a good story. Won't you tell me some day why your grandfather saved the robin?"

"I will," said the cat. "Yes, yes, I will tell you some day, but not now. I must now attend the Cat Culture meeting on the back fence."

LINOLEUM FOR THE KITCHEN TABLE

Instead of buying more oil cloth for the kitchen work table after the old is worn out, buy a neat blue and white, or green and white linoleum, preferably inlaid, and tack it on with small tacks at the edge. It will lie flat soon without any fastening if preferred. It is better looking, easier to keep clean, lasts ten times as long and is preferable in every way to table oil cloth.

TESTS OF OVEN

Slip a small piece of white paper in the oven; if the paper becomes a yellowish brown in three minutes it is hot enough to bake baking powder or soda biscuits. This is called a hot oven.

If paper turns a yellowish brown in seven minutes, the oven is called moderate, which gives the right heat for baking cake in which butter is used.

If it turns yellowish brown in ten minutes, you have the right heat to bake a sponge cake or a loaf of light-bread, for baked custard or omelet.

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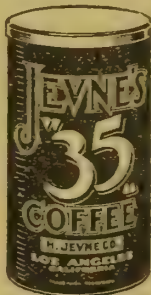
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# SHERWIN-WILLIAMS

## PRODUCTS

### WORKING CLOTHES

Written for California Cultivator  
By Anna Lenington Heath, Pomona

I read Mrs. Pickett's article on "My Ideal Farmer's Home" in the Cultivator for January 26 with much interest and was glad she suggested "Working Clothes" as a subject to be discussed for they are duds dear to my heart. I am assuming that she means clothes for the rancher's wife and daughters to wear about their housework. The men have had their shirts and overalls so long that they are taken for granted and of course such garments are indispensable to the woman who does a man's work outdoors.

For ordinary housework the clothes of the ranch woman should be of an attractive and durable material that will stand repeated washing, cut in a style easy to make, comfortable to wear and simple to get on and off. The justly celebrated bungalow apron can be made to meet all these requirements. The fashion books show many pretty and practical designs. The ones that pull on over the head are especially easy to make. For the woman who does not like this apron there are numerous simple and attractive house dresses.

Whatever the style chosen, have good big pockets, short sleeves and an open, comfortable neck. And cut the skirt short. How many remember the long, slinky wrappers we used to wear, with the long sleeves and high collar that usually was too tight after the first washing, and how drab the bottom of the skirt got every morning when we went out to care for the chickens!

Percalé is a good summer weight material, but it fades some and does not wear any too well. Gingham is good if shrunk before being made up. The most satisfactory cloth I have found is cotton cheviot. Our mothers called it shirting. It can be bought for 20 cents a yard and launders beautifully. Kiddie cloth and Devonshire are both good but cost more.

An apron or house dress made of any one of these materials and worn with a combination undergarment, light weight petticoat and low-heeled shoes, forms a working rig that surely makes the tasks easier. It is so easy to get on and off that there is no excuse for doing house work in one's better clothes.

Have working clothes for each of the girls and insist that they be worn. It is a very practical way to save the school and Sunday garments and is good training in the eternal fitness of things. For the dirtier work it is well to have slip-on aprons of gingham. Make them to hang straight from the shoulder as very little girl's aprons do. Used judiciously they will keep the house dress fresh a long time and can be removed instantly when occasion demands.

A frayed, spotted dress that used to be "best" is a very unattractive thing to work in and suggests slack and untidy methods. Working clothes, made for the purpose, are inspiring and conducive to the right way of doing things.

### PRIZE WINNERS

The first prize of \$2.00 cash for best article goes to Anna Lenington Heath of Pomona for "Working Clothes;" the second of \$1.00 to C. Z. P. for "Just Home." Others whose articles are published in this and later issues will be given extension of subscription to the California Cultivator.

Try cakes that call for honey or syrup instead of sugar.

### ENJOYING LIFE WITHOUT WHITE FLOUR

Written for California Cultivator

Here is a record of what one Arizona woman has done to feed her family happily on other things than wheat flour. By the way, do you know how much better pie crust is made from whole wheat than from white flour? Try it and see.

"By the use of cornmeal, oatmeal, rye and milo meal she has made a saving in wheat. A 48-pound sack of wheat bought December 29, was half used on February 3. She had been using no other wheat flour during these 35 days. Her family consists of three people, with a fourth at breakfast and occasional dinners. She has had a number of guests at dinners and has given away many biscuits and a number of yeast, wheat and corn loaves by way of propaganda. She has ground her own milo in a coffee mill. When the 50-50 flour law created consternation here she put an exhibit in the window of a leading grocery store. It consisted of a coffee mill, "chicken feed" (milo meal), a loaf of the milo maize bread, and one of the corn and wheat bread. With this were recipes for the bread and milo biscuits. The exhibit has had a good deal of attention."

Rice flour has possibilities of much good eating in combination with small quantities of white flour—if you greatly desire whiteness—or with milo meal, whole wheat, or other of the darker flours or meals. Delicious—and perfectly white—muffins can be made with rice flour two-thirds, white flour one-third. Also the rice flour may be used straight.

Queer, isn't it, how we hug the beaten paths? I never had rice flour in the house until last week—simply because it hadn't come to my attention; now I am enthusiastically experimenting with combinations and substitutions. I'm going to order some barley flour today and experiment with that. The experiments are all good eating too.

Let's help each other out by reporting in the Cultivator the new things we discover.

For one, I should like to have directions for making pumpernickel. I understand it is made of rye and other dark flours only, with no white wheat flour. Will someone please tell me how?

### MORE SANDWICHES

Mrs. C. L. Gardner, San Francisco

Take a canned pimiento, wash and wipe dry. Then chop fine with the meat of six or eight walnuts, moisten with mayonnaise, and put between thin slices of brown bread. Add salt to taste to the mixture.

One-half cup of seeded raisins, chopped fine. Add to them peanut butter which has been made into the consistency of thick cream by the addition of water. Salt the peanut butter to taste. Spread on thin slices of white or brown bread. This is also very good on graham crackers.

Mrs. L. J. Benton, Napa

One cup well cooked beans (preferably brown). Mash with two hard boiled eggs, season with salt, lemon juice and salad oil to suit taste, pepper and a trace of onion if liked. Spread between thin slices of bread and butter.

Another: One or more hard boiled eggs; mash and season with lemon juice, salad oil and salt or mayonnaise, with lettuce leaf and buttered bread.

Mrs. H. C. Wallace, Shafter

One-quarter pound seedless raisins,



one-quarter pound dates, one-quarter pound dried prunes (pitted), one-quarter pound dried figs, one-quarter pound any kind nuts. Put all through the food chopper, then pour over it the juice of a tart orange, mix well and pack in a bowl. This will keep and makes delicious sandwiches spread on whole wheat bread with no butter.

Another—One small can deviled meat, one hard boiled egg (chopped), one teaspoon prepared mustard, one tablespoon cream. Mix well and spread on bread, preferably rye bread.

For the mustard used in sandwiches make as follows: Three tablespoons mustard (dry), one tablespoon sugar, one teaspoon salt, one teaspoon corn starch. Mix the above and add one egg and one cup vinegar then cook slowly until thickened and when cool add one teaspoon Wesson salad oil or olive oil. This will keep and make enough for many sandwiches.

#### JUST HOME

Written for California Cultivator  
By C. Z. P.

Home should be a place of happiness. Nothing short of death or serious illness should keep the entire family from being cheerful.

I try to have a funny story or something interesting that happens out in the farm yard, to tell my little family at meal time.

The table is not a place to settle family difficulties, but a very easy habit to form as it is a family meeting place with a few minutes (between bites) to take Son John or Daughter Sue to task for things they have either "overdone" or "underdone."

Boys and girls on the farm do not have the opportunity for social intercourse that city children have, so each birthday my children know they are at liberty to invite all their friends in for a good time, their father and I joining in the games and fun.

Then every third Friday night the neighborhood children meet at our house to play games.

My motto is "Make home life happy," and the children will stay on the farm.

#### LET'S EAT MILO

Written for California Cultivator  
By M. Jackson

By experimenting, I find milo maize to be a nutritious, wholesome and appetizing food when properly prepared. The following are some good milo recipes, and I wish to pass them on for the benefit of others:

##### Milo Mush

Soak two cups of milo and one heaping teaspoon of baking soda over night with sufficient water to cover. Drain and rinse thoroughly. Cook with water to cover for 30 minutes, then drain off, return to stove and cover with boiling water and cook in large kettle for seven hours. When almost done, remove cover from kettle and let steam evaporate until dry. Add a little salt and serve with rich milk.

##### Milo Pudding

Prepare milo as in preceding recipe. To 1½ cups cooked milo add 2½ cups milk, two-thirds cup of Sultana raisins (scalded until soft), three well beaten eggs and one-half cup honey. Flavor with cinnamon. Mix ingredients the same as for rice pudding. Bake slowly until done. Serve with cream. Sugar may be used instead of honey, but honey is better. This is certainly delicious.

##### Fried Milo

Left over milo may be fried in butter or pork drippings until a light brown and served for breakfast.

#### OUR "CORN FLAKE LIBRARY"

Written for California Cultivator  
By Mrs. A. C. Pickett, Riverside

I want to tell of my husband's Corn-flake Library," as we jokingly call it. Open the doors of a closed cupboard in our library and behold four shelves of corn flake boxes, labeled and arranged alphabetically, like cyclopedias. These contain government bulletins, seed catalogues, etc.

At the citrus experiment station they had pasteboard boxes made to order, for this purpose. They are rather expensive to buy and too troublesome to make. The corn flake boxes are just the right size. If you are not addicted to corn flakes, ask your friends who use them to save the boxes for you. In a moment one can find the information needed, without hunting through piles of pamphlets. Our newspaper clippings are filed in large sized envelopes labeled and placed alphabetically in the corn flake box marked "Scraps." When my husband reads the agricultural papers he marks articles he wishes saved. When the family has finished reading the papers, he cuts out and files the items. I do the same with articles of interest to me. Many people fail to make use of the helps offered by the government, to be had for the asking. Of course the initial cost of all this printed matter, prepared by experts in every line, is paid from taxes, so if not used the farmer is the loser.

#### STEAMED BREAD WITH NO WHITE FLOUR

By Mrs. G. C. Halsey, Dinuba

Two cups sour milk, two cups corn meal, two cups rye flour, one cup raisins (if desired), one-half cup molasses, two level teaspoons soda, one level teaspoon salt. Put in tight can well greased. Set in hot water and let boil 1½ hours.

##### School Sandwiches

Cut slices of steamed brown bread, spread with thin spreading of peanut butter and then a thin spreading of tart jam.

#### A GOOD SUBSTITUTE FOR MEAT

One cup flour, one cup tomatoes, one cup beans of any kind, pink preferred, half cup peanut butter, one cup cereal coffee.

Parch flour in oven to a nice brown, rub tomatoes and beans through colander, cream all these ingredients thoroughly, salt to taste. Put in a baking powder can and boil in double boiler from one to two hours. This can be done when cooking beans by setting can in beans.

This recipe can be varied in many ways, adding a little onion or slicing and frying, just as you like. We like it sliced when cold just as it comes from can. — Mrs. Joseph Harman, Hinkley.

#### GYMNASIUM KNITTING

Grandma, when she used to knit, Didn't work her arms a bit, Waving them like dumb-bells swingers Seemed to do it with her fingers; Didn't take up half a room, Using needles like a broom. Though she loved a rocking chair She could knit most anywhere, And no matter how she'd ply, Never poked you in the eye; But, oh lor' and goodness gracious, In these days so far less spacious, When the modern knitting girl Sits her down a sock to purl, Both her elbows start to swirl; Every time the needle jibs Pokes her neighbor in the ribs Wonder if such stunts she tries For gymnasium exercise. Thinks, perhaps, it's more exciting To behave as if reciting. Girls, oh girls, we mean no harm, If you'd weave a greater charm, Work the wrist and not the arm; Grandma, when she used to knit, Didn't wave her arms a bit.

## First Aide to Hostesses Who Know

PERHAPS it's only a couple of friends who drop in for a little chat. Or—it may be a knitting party, an Aid Society meeting or what not. Or—who knows?—perhaps it's a big "party"—music and dancing and Japanese lanterns and all that.

In any event, don't overlook the help Ghirardelli's can give you. Whether it's two cups for yourself—or two gallons for your "big affair"—you can make it just as easily.

Just one reason why Ghirardelli's has always been first aide to hostesses who know.

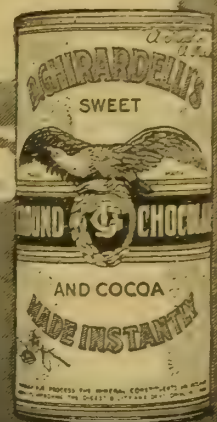
In ½ lb., 1 lb. and 3 lb. cans; a  
tablespoonful—one cent's worth—  
makes a cup.

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## Los Angeles Market

Los Angeles, Feb. 20, 1918.

**BUTTER**  
Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....48

**CHEESE**  
Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....30  
Tillamook Trip .....27  
Domestic Swiss .....34

**EGGS**  
Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extra .....40  
Pullet .....39  
Case Count .....39

**POULTRY**  
We quote to producers:  
Food administration orders hens sold for producing purposes only.  
Broilers .....36@37  
Fryers .....34  
Roasters, 3 lbs. and up .....30  
Ducks, lb. ....27  
Roosters, old .....18  
Turkeys .....28@30  
Geese, lb. ....23

**LIVESTOCK**  
We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning February 20, by the Cudahy Company.

**Cattle**  
Beef steers, av. 1000-1100 lbs. ....10.00@10.50  
Helfers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....3.50@4.00

**Hogs**  
Av. 125 lbs. ....13.50@14.50  
Av. 150 lbs. ....14.50  
Av. 175-299 lbs. ....15.50  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers .....10.50@11.00  
Ewes .....10.00@10.50  
Lambs .....14.50@15.00  
Yearlings .....10.50@11.00

**POTATOES**  
Wholesale selling price:  
Oregon Early Rose .....2.75  
Northern Burbank, cwt. ....1.35@1.85  
Russets .....1.90  
Salinas .....2.50  
Sweet, sk. ....4.50@4.75

**ONIONS**  
Wholesale selling price:  
Brown .....2.25  
White .....3.00  
Garlic .....6

**VEGETABLES**  
Wholesale prices:  
Artichokes, doz. ....90@1.15  
Beans—String, lb. ....25  
Limas, lb. ....25  
Ky. Wonder .....25  
Beets, sk. ....2.25  
Brussel Sprouts, lb. ....12  
Cabbage, lb., ¾; sk. ....2.20  
Red, lb. ....4½  
Carrots, doz. ....30  
Cauliflower, doz. ....75  
Celery, doz. ....80  
Cucumbers—Hothouse, doz. ....1.25@2.50  
Egg Plant, lb. ....20  
Horseradish, lb. ....15  
Lettuce, doz. ....30  
Leeks .....30  
Mint, doz. ....40  
Mustard, doz. ....20  
Onions, green, doz. ....25  
Oyster Plant, doz. ....40  
Peas, Tel. lb. ....15@16  
Peppers, Chili, lb. ....20  
Parsnip, doz. ....40  
Parsley, doz. ....35  
Radish, doz. ....25  
White .....35  
Rhubarb—Strawberry .....1.35  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Crockneck .....70@75  
Hubbard, lb. ....3  
Tomatoes, lug. ....2.25  
Turnips, doz. ....30  
Watercress, doz. ....35@40

**FRUITS**  
Wholesale prices:  
Apples—Bellflowers .....1.65@2.00  
Jonathan .....1.80@2.25  
King David .....1.75@2.00  
W. W. Pearmain .....1.50@2.00  
Spitzenberg .....2.40@2.65  
Y. Newton .....1.45@1.75  
Avocados, doz. ....6.00@9.00  
Bananas, lb. ....5  
Pears, Winter Nellis, lug. ....2.00

**CITRUS**  
Lemons, 4.25@5.00; juice .....2.50  
Loose .....4.00  
Oranges—Navels, bx. ....3.00@6.25  
Limes, basket .....75  
Oranges—Navels, bx. ....3.50@6.25  
Tangerines, lug. ....1.75

**DRIED FRUITS**  
These are not prices to producers but prices made by wholesalers to retailers.  
(20-lb. bx., faced, 50s, ½c less). Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 18; extra ch., 18½; fy., 19; pears, 12½; peaches, ch., 12; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 14; 40-50s, 13½; 50-60s, 13; 60-70s, 10½; 70-80s, 10; 90-100s, 9.  
Figs—Callmyrnas, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

**NUTS**  
Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....24  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....16  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

## HONEY

Prices of wholesaler to retailer:  
Extr. W. W., lb. ....20  
Comb, W. W. case .....5.00  
Light Amber, case .....4.75

## RICE

Wholesale quotations:  
Cal. ....\$7.50  
Broken .....5.00@6.00

## BEANS

These are prices made by wholesaler to retailer.  
Lady Washington .....13.00  
Limas .....14.00  
Pinks .....9.00  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....13.00  
Blackeyes .....9.50  
Tepary .....10.00@11.00  
Lentils .....25.00

## HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oat .....30.00@32.00  
Volunteer Oat .....18.00@20.00  
Wheat .....26.00@29.00  
Barley .....28.00@31.00  
Alfalfa .....28.00@30.00  
The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

## GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal .....2.20  
Alfalfa Molasses .....2.30  
Barley, Rolled .....3.90  
Barley, Re-cleaned Whole .....3.95  
Barley Hulled .....4.55  
Beet Pulp .....2.25  
Bran, (Light) 65 lb. sk. ....1.95  
Cocoanut Meal .....2.75  
Cottonseed Meal .....3.27½  
Corn, Yellow .....4.15  
Corn, White .....4.80  
Corn, Cracked .....4.20  
Corn, Egyptian .....4.15  
Corn Feed Meal .....4.25  
Mixed Feed (80 lb. sacks) .....2.12½  
Milo, Maize, Field Run .....3.90  
Oat Chop .....1.90  
Oats, White .....3.90  
Oats, Rolled White .....4.05  
Oats Hulled .....5.20  
Oats Rolled Chicken Groats .....5.40  
Oats Eastern Red .....3.90  
Oilecake Meal .....3.85  
Red Dog .....2.65  
Rye .....4.40  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Buckwheat .....5.00@5.10  
Canada Peas .....6.40@6.50  
Charcoal, 50 lb. sk. ....3.40@3.50  
Clam Shell .....70@95  
Grit Granite .....75@85  
Hemp .....5.50@5.60  
Oyster Shell .....1.35@1.45  
Red Millet .....4.65@4.75  
Sunflower Seed .....5.15@5.25  
Soya Bean Meal .....3.50@3.60  
Scratch Feed .....4.20@4.30  
Scratch Gritless .....4.40@4.50  
Vetch .....5.10@5.20  
Rice Bran, ton .....40.00  
Middlings, ton .....45.00  
Rice Polish, ton .....60.00

## San Francisco Markets

San Francisco, Feb. 19, 1918.

## BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Fresh extras .....52

## CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25½. Y. Am. ....27½  
Ore. Young Am. ....27  
Jack cheese, full cream .....26@27  
Half skim .....14@17

## EGGS

Extras .....45½  
Firsts .....44  
Selected Pullets .....44

## POULTRY

We quote from producers, lb.:  
The food administration forbids sale of hens for meat until after April 30.  
Hens, lb. ....34@36  
Broilers—1 to 1¼ lbs., 50; 1¼ to 1½ lbs., 45; 1½ to 2 lbs., 40@42; 2 to 3 lbs., 35@40.  
Roosters .....24@33  
Squabs, doz. ....3.50@5.00  
Ducks .....25@30  
Geese .....20@25  
Belgian Hares, live, lb. ....23@25  
Turkeys, dr., 34@36; live .....28@30

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.  
Steers, lb., 9½@11; undesirable, 6½@8½; cows and heifers, 7½@8½; undesirable, 4½@6½; calves, 7½@10.  
Sheep—Lb. gross weight: Fat, unshorn wethers, 12½@13; ewes, 10@10½; lambs, yearlings, 13½@14½; milk, 15@15½; shorn sheep, 1½@2 less.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 14½; 140 to 175 lbs., 15½@15¾; 175 to 300 lbs., 15½; 300 to 400 lbs., 15¾.

## POTATOES

Wholesale selling prices at wharf, cwt.  
River .....1.00@1.10  
Yakima Gems .....1.40@1.70  
Sweets .....4.75@5.00  
Seed—Wholesale, per 100 lbs.: Earl's Rose, British Queen, American Wonder 1.50@2.00; Burbank, low top, 1.75@2.00.



high top, 1.50@1.75; Garnet Chille, 2.75@3.00; White Rose, 2.00@2.50; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

ONIONS

Wholesale selling price on wharf, cwt. Australian Brown 1.70@1.75 Bermudas 2.75@3.00 Garlic, lb. 3 1/2 @ 4 1/2

VEGETABLES

Wholesale selling price. Artichokes, doz. 35@70 Jerusalem, 20 lb. bx 75 Asparagus, lb. 20@35 Beets, sk. 1.25@1.35 Brussels sprouts, lb. 4@6 Carrots, sk. 75@1.25 Cauliflower, cr. 1.00 Celery, Delta, cr. 1.50@3.00 Cucumbers, doz. 1.25@1.75 Egg Plant, lb. 10@12 1/2 Lettuce, cr., Southern, iced 1.00@1.25; uniced, 40@75; Imperial, 1.60@1.75. Parsnips, sk. 1.25@1.60 Peas, lb. 7@15 Peppers, Bell, lb., 15@22 1/2; Chili, 15@17 1/2 Pumpkins, sk. 85@1.00 Rhubarb, bx. 1.75@2.00 Squash—Marrowfat, sk. 85@1.00 Cream, lug 1.00@1.15 Hubbard, sk. 90@1.15 Tomatoes, cr., 1.00@1.25; Mex. 2.00@3.00 Turnips, sk. 50@75

FRESH FRUITS

Apples — Spitzenburg, 1.25@2.65; Red 1.25@1.50; Newton Pippins, 1.15@1.75; Pears — Winter Nellis bx., 2.00@2.75; winter pears, lug, 1.50@1.75. Strawberries, ch. 12.00 Avocado, doz. 2.00@4.00 Bananas, Hawaiian, lb. 4@4 1/2 Pineapple, doz. 4.00@5.00 Citrus Fruits — Lemons, bx. according to size, fy., 3.00@6.00; ch., 2.50@5.00; lemons, 1.50@2.25; grapefruit, 1.75@2.50; Imperial, 2.75@3.25. Oranges—Bx. Navel, fy., 3.00@6.00; ch., 2.75@4.50; do culls, 2.25@2.75; Mandarins and Tangerines, 1/2 bx., 2.50@3.00.

DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer. Peaches—Unpeeled, lb. standard, 9 1/2; choice, 9 1/2; extra choice, 10; fancy, 11. Figs—In 50-pound boxes, per pound: White Adriatic, standard, 8 1/2; choice, 9 1/2; extra choice, 10 1/2; fancy, 11 1/2; Calmyrna, fancy, 15 1/2; extra fancy, 16 1/2. Apricots—Bulk basis: Standard, 13 1/2; ch., 15; extra ch., 15 1/2; fy., 16 1/2; extra fy., 17 1/2; fy. Moorpark, 17 1/2; extra fy., 18. Prunes—70s to 90s, 7; 60s, 7 1/2; 50s, 8; 40s, 8 1/2; 30s, 9 1/2. Apples—In 50-pound boxes, lb.: Fancy 15 1/2; ex. ch., 14 1/2; ch., 14 1/2. Pears — Bulk basis, lb.: Fancy, 10 1/2; ex. ch., 9; ch., 8 1/2; standard, 7. Raisins—Cr.: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-oz. 45 to cs, 5.25; ch., 16-oz. cartons, 3.00 for 36s; do, 12-oz. cartons, 45s to cs, 3.10. In bulk: Sun Maid, 1.75; fy., 1.90; ch., 1.75. Sulphur-bleached Thompson, extra fy., 5.37 1/2; fy, 5.12 1/2; ch., 4.87 1/2; soda-bleached, 4.75. Loose: One-crown, 4.15; 2-crown, 3.40; 3-crown, 3.65; 4-crown, 3.20.

NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21 1/2; I. X. L., 19 1/2; Ne Plus, 18 1/2; Drakes, 16; hard shell, 11 1/2. Chestnuts, Cal. lb. 10@20 Peanuts, Va. 15@20 Pecans, lb. 19@20 Pine Nuts 20@22

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15@18.

BEANS

Jobbers' prices, cwt., recleaned: Limas 12.60@12.75 Bayous 8.90@9.00 Small Whites 12.25@12.50 Mexican Reds 8.25@8.50 Large Whites 12.00@12.20 Blackeyes 8.00@8.25 Pinks 7.90@8.00 Red Kidney 13.00 Cranberry 11.75@12.00 Teparies 8.75@9.10

RICE

The United States food administration has fixed maximum prices on California rice as follows: Rough rice, lb., 3.9 to 4c; clean rice, lb., 6.9 to 7c.

HAY

Under date of February 16, Scott, Magner & Miller says: Receipts past week, 862 tons. The market has dragged and toward the end of the week concessions in price have been made to effect sales in order to remove arrivals promptly from the track. The demand for shipment to the southern counties is good and considerable hay and straw have been moved to these sections to keep cattle alive. How much more will be taken is a problem that the weather conditions will probably decide. In the districts where rains have fallen many offerings of hay from farmers' barns are being made. This in itself is increasing the visible supply of hay materially. At the same time in a great many sections more rain is positively needed to mature crops and it is to be hoped that the same will be soon forthcoming.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling must be added according to conditions. Fancy Wheat Hay, (light 5 wire bale) 29.00@30.00 No. 1 Wheat or Wheat and Oat Hay 27.00@29.00 No. 2 Wheat or Wheat and Oat Hay 25.00@27.00 Choice Tame Oat Hay 28.00@29.00 Other Tame Oat Hay 25.00@27.00 Wild Oat Hay 24.00@27.00 Barley Hay 25.00@27.00 Alfalfa 25.00@27.00

Stock Hay 20.00@22.00 No. 1 Barley Straw 60@90

GRAIN

Grain Exchange prices, etc. Corn, Cal. Yellow, cwt. 3.50@3.75 W. Egyptian 3.70@3.80 Brown Egyptian 3.55@3.60 Barley, Feed and Brewing, cwt 3.55@3.60 Milo 3.55@3.60 Oats, Red Seed 3.60@3.70 Feed 3.35@3.50 New Black 3.25@3.50 Rye, Utah 4.00@4.25 Wheat — Government prices: Common white hard, base price is \$3.50 per central, or \$2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft wheat, base price 2 cents per bushel less, or \$2.08 per bushel; white club (including Sonora), \$2.06 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, 3 cents per bushel reduction; if 56 to 58 pounds, 6 cents per bushel less; if less than 56 pounds, grain becomes sample grade and sells on its merits up to within 1 cent per bushel of 56-lb. wheat. Sacked wheat 4 cents per bushel more, less tare for weight of sacks.

FEEDSTUFFS

These prices applicable to San Francisco, with \$1.00 less at Sacramento and Stockton, are for cash at the mill in carload lots, and include sackage, with an additional rate of 50 cents per ton in less than carload lots. Wholesale prices per ton. Prices fixed by food administration as San Francisco price; Sacramento and Stockton \$1.00 less on carlots at mill door: Bran 34.00@35.00 Middlings 41.50@42.50 Mixed Feed 37.00@38.00 Shorts 35.00@36.00 Rolled Barley 72.00@74.00

SEEDS

Prices in round lots, lb.: Millet, recleaned 4 1/2 @ 5 1/2 Alfalfa 20@21 Flax 6@6 1/2 Hemp 4 1/2 @ 5 1/2 Rape 2 1/2 @ 3

Citrus Fruit Market

Los Angeles, Feb. 20, 1918.

While total shipments are running far less than last year, war prices are prevailing, and, as may be seen by the auction quotations, few sales are made but will bring handsome profits to the producer. A few storage Valencia are still offered but do not meet the reception given to Navel which are of very high quality and every offering immediately taken. Fruits injured by freezing in transit have been almost entirely cleared from the market. Florida's shipments are also much lower than last year. Lemon shipments are lighter than anticipated, but prices are entirely satisfactory.

Shipments

Shipments of oranges from Southern California to date since November 1, 1918: 3931 cars; lemons, 937; total, 4868. To same date last season: oranges, 7756; lemons, 1622; total, 9378. From Central California to date this season: Oranges, 1891; lemons, 105; total, 1996. Same date last season: Oranges, 4014; lemons, 152; total, 4166. From Northern California to date: Oranges, 202; last season, 842.

AT THE AUCTIONS

February 13

New York: Nav. \$4.00 to \$5.05, Val. 2.35 to \$4.05, Lem. \$4.60 to \$5.90. Boston: 5 cars. Nav. \$3.80-\$5.55, lem. \$0.80-\$6.85. St. Louis: 2 cars. Nav. \$3.60-\$4.75, Val. \$3.60-\$4.15; Seed. \$4.50, lem. \$4.90.

February 14

New York: 9 cars Nav., 3 Val. Nav. \$2.20-\$6.05, Val. \$2.35-\$3.60, Seed. \$4.50, Jaffas, \$3.40, lem. \$4.70-\$5.80. Boston: 4 cars. Nav. 3.00-\$4.90, Bloods \$3.75, lem. \$3.55-\$5.90.

February 15

New York: 3 Nav., 2 Val. Nav. \$4.30-\$5.90, Val. \$3.60-\$4.10. St. Louis: 4 cars. Nav. \$2.65-\$3.65, Val. \$3.15-\$3.30. Cleveland: 3 Nav., 1 lem. Nav. \$3.00-\$5.55, lem. \$2.60-\$3.30. Cincinnati: 1 car. Val. \$3.15. Pittsburgh: 3 cars. Nav. \$3.95, Val. \$1.95-\$4.00.

February 18

New York: 9 cars. Nav. \$2.75-\$5.90, Val. \$3.05-\$5.40, lem. \$3.80-\$5.65. Cleveland: 4 cars. Nav. \$3.00-\$4.90, lem. \$7.30. Cincinnati: 1 car. Val. \$2.70-\$3.70. Philadelphia: 3 cars. Nav. \$6.40, Val. \$2.60-\$3.75.

February 19

New York: Nav. \$3.20-\$5.75, Val. \$3.95-\$4.10. Boston: 10 cars. Nav. \$2.40-\$6.00, Val. \$3.00-\$4.40, lem. \$6.45-\$8.50. Philadelphia: 1 car Val. \$3.60.

MARKET NOTES

Canners are offering up to as high as \$15 per ton for tomatoes, and several contracts have been made on that basis. Last year's price was around \$10; the previous year's, \$7.50-\$8.00. This increase is due to getting together of producers in Santa Clara Valley, Southern California and Sacramento Valley.

There has been a big slump in egg prices in Eastern markets as well as on the Coast. Consumption has been steadily decreasing for the past six months owing to high prices and now large receipts further depress prices.

Bean growers are somewhat encouraged over rise in prices; Limas now selling at 14 cents per pound, and Pinks at 9 cents.

Handlers of dairy products have started a campaign of education as to value of cold stored goods, assessing eggs stored one-half cent per case; butter, 1 cent per 100 pounds for a publicity fund.

Imperial Valley peas were injured by another frost and other complications have operated to reduce expected shipments to 50 per cent of a normal yield. Small shipments are now starting.

The condition of truck crops is estimated as follows: Cabbage 73, carrots 88, cauliflower 75, celery 77, tomatoes 81, lettuce 64, onions 88, peas 70, spinach 84, strawberries 88, turnips 83.

In Central California light rains have benefited artichokes and broccoli, which are now shipping, and the growing crop of young pea vines, but rainfall is still extremely short. The condition of truck crops for Central California is estimated as follows: Artichokes 85, broccoli 67, cabbage 81, peas 80, spinach 87, strawberries 87.

The government has placed an embargo on shipment of any white beans from California until investigation has been made as to amount now held in the state. It is assumed that requisition will be made for the needs of the government before the embargo is lifted.

Rice growers have been asked by the government to take four cents for rough rice. The growers are not satisfied.

Postcard reports to the Los Angeles office of the bureau of markets of the United States department of agriculture show shipments from California for the week ending February 16 approximately as follows: Apples, 1 car; dried apples, 10; cauliflower, 155; celery, 74; mixed vegetables, 72; beans, 58; artichokes, 2; cabbage, 26; dried apricots, 3; dried peaches, 18; dried pears, 3; prunes, 2; dried plums, 29; lettuce, 82; potatoes, 118; raisins, 38; turnips, 13; mixed fruits and vegetables, 7; carrots, 3; onions, 10; sweet potatoes, 1.

WHY IT FAILED

A certain chemist advertised a patent concoction labeled: "No more colds! No more coughs! Price 1s. 1 1/2d."

A man who bought the mixture came back in three days to complain that he had drunk it all but was no better.

"Drunk it all!" gasped the chemist. "Why, man, that was an india rubber solution to put on the soles of your boots."—Tit-Bits.

NO ENEMIES

You have no enemies, you say. Alas! my friend the boast is poor; He who has mingled in the fray Of duty, that the brave endure, Must have made foes! If you have none Small is the work that you have done. You've hit no traitor on the hip. You've dashed no cup from perjured lip, You've never turned the wrong to right, You've been a coward in life's fight. —Chas. Mackay.

WEATHER CONDITIONS

San Francisco, Cal., Feb. 16, 1918.			
Stations	Wk. Season.	Norm.	Max. Min.
Eureka	2.69	15.33	25.58 56 34
Red Bluff	.38	4.99	15.99 66 32
Sacramento	.07	3.24	12.65 66 36
San Francisco	.52	4.89	14.87 66 42
San Jose	.19	2.44	10.66 68 30
Fresno	.04	1.01	5.97 72 36
San Luis Obispo	.00	1.92	12.55 82 36
Los Angeles	.00	1.07	9.90 80 48
San Diego	.00	1.93	6.41 72 46

INCREASING PRODUCTION

The shortage of materials and difficulty in securing experienced labor necessary for building the L. A. Auto Tractor Attachment has caused delayed shipments, of this popular farm necessity, for some little time; but Walter S. Brush of the above manufacturing company reports that they have been able to secure the material necessary to build this attachment in sufficient quantity to supply the increasing demand and from now on will be in a position to make prompt shipments upon receipt of any and all orders.

Mountain Grown White Rose Seed Potatoes

I have a car of clean, smooth, medium sized potatoes; splendid seed, grown at an elevation of 3000 ft. According to tests potatoes grown at mountain elevations will be more vigorous and mature earlier when planted in the valleys, than valley grown potatoes.

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PLANT YOUR LAND NOW TO WINTER RHUBARB. You should get big crop by next fall. Others making \$1000 per acre, so can you with WAGNER'S GIANT —plant no other. Get your plants from originator and avoid disappointment. J. B. WAGNER, Rhubarb and Berry Specialist, PASADENA, CAL.

The Papec Pneumatic

Ensilage Cutter Beats Them All

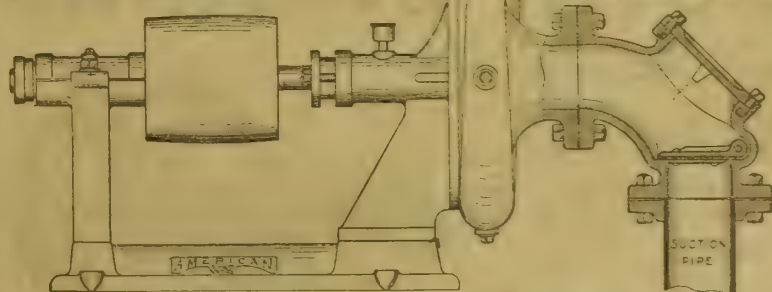
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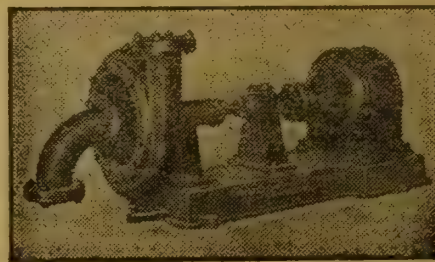
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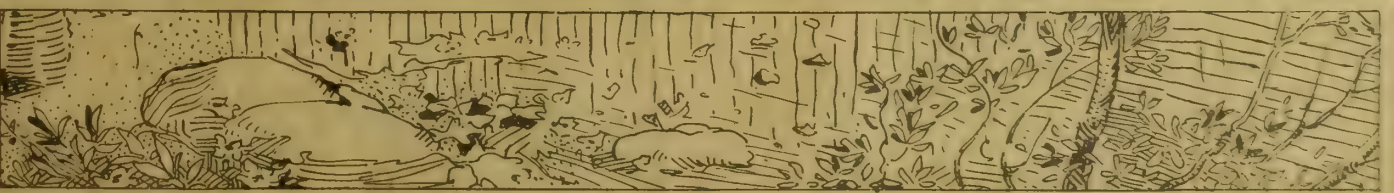
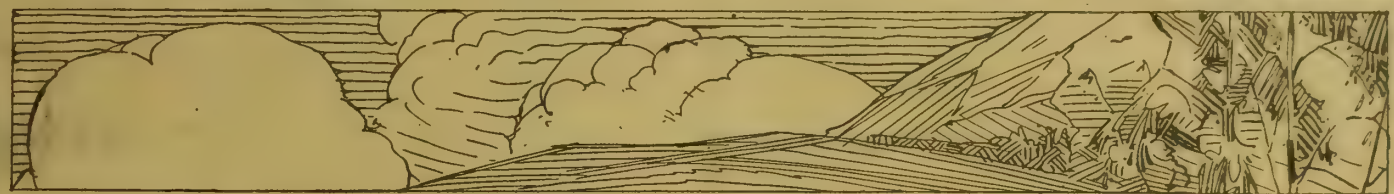
An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

March 2, 1918

SAN FRANCISCO



Assembly at Holtville High School



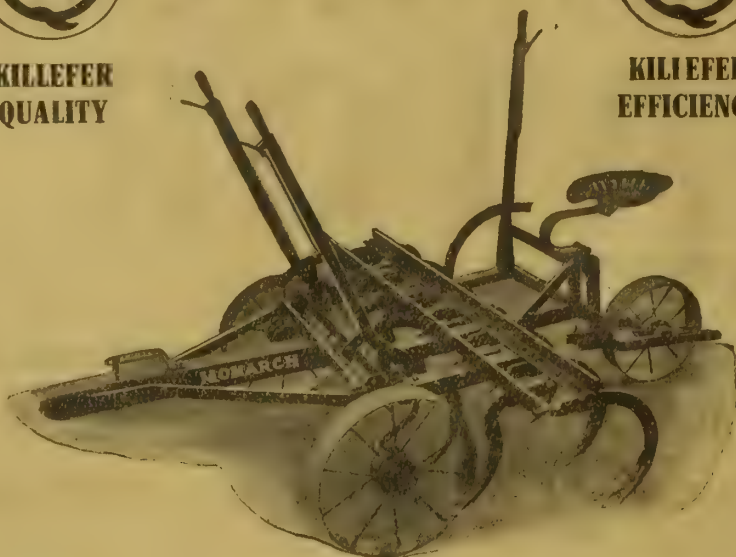


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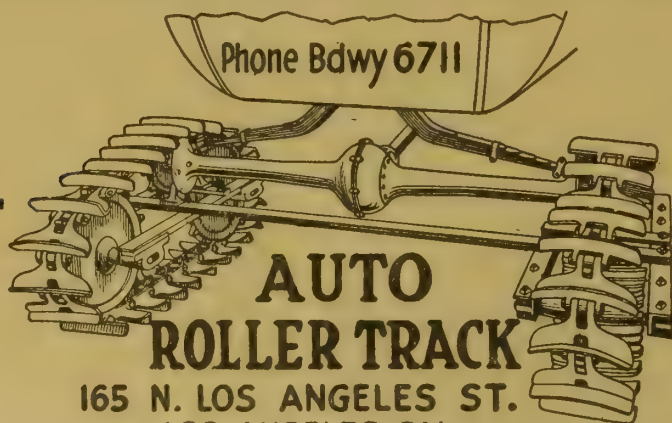
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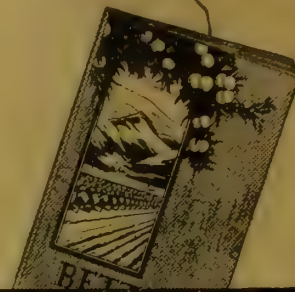
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# California Cultivator

Vol. L, No. 9

LOS ANGELES: MARCH 2, 1918

One Dollar Yearly

## County Annual Assembly of Farm Bureau

Imperial County Annual is Becoming an Event of State-Wide Importance.  
Barbecue and Program with Noted Speakers Draws Large Attendance.



THE most dramatic incident in the Assembly, or the annual of the farm bureau of Imperial County, recently held at Holtville, was when Crocheron made the announcement of the appointment of C. S. Sullivan as farm adviser. Mr. Sul-

livan had formerly received a commission as an officer in the liberty army, for he had felt that duty called him to army service, but hearing the insistent demand for more food for America and its allies he presented the matter to officers of the university and asked for advice. He was urged to come to Imperial Valley in the capacity of acting farm adviser in place

of Paul Dougherty who had gone into active service. This position he has filled several months, and because of his willingness to forego the greater honor and take a lesser salary he was tendered the position of permanent adviser, which he accepted at the time of the afternoon session of the Assembly.

The Assembly never called such an array of talent from other portions of the state. There were representatives of the state university, including Dean Hunt who made his address on "Canada at War."

Frederick Maskew of the state quar-

antine service in San Francisco explained with a series of illustrations the meaning to the Imperial Valley of the introduction of the cotton boll weevil. The service in San Francisco is most energetic in preventing the introduction of pests affecting California horticulture and agriculture. Instead of California agriculture, we might well say, American ag-

riculture, for owing to the importance of this port many articles enter the harbor which give opportunity for introduction of pests affecting agriculture in all of America. To prevent introduction of boll weevil or other pests of cotton this method of treatment is followed: Before it is allowed to be delivered to other sections of the state it is placed in an immense

steel container which is hermetically sealed and the air exhausted. Hydrocyanic acid gas is then generated and introduced into the vacuum, this at eight to ten times the strength which is used in the fumigating of orange trees. This gas is known to penetrate to the center of the largest bales of cotton.

Dean Van Norman of the university farm school had a couple of cows on the stage of one of the theaters, and with these, one a good dairy type, the other, dairy-beef type, he proceeded to show the lines wherein the successful dairy cow was manifest.

Tom Elliott talked of the need of greater and more diversified vegetable production in the Imperial Valley.

Prof. Gilmore of the university talked on cotton culture, with special reference to war demands, and Commissioner Waite discussed culture of the new type of Pima cotton.

The women's section of the Assembly was at the Holtville high school; the cotton section at the city hall; and the "regular morning session" was in the Arcade Theater.

Perhaps it is not our province to criticize, but we cannot refrain from expressing the belief that more complete interest in the proceedings could be secured by extending the time of the meeting and asking all to attend one general assembly. In fact, the afternoon session did follow this plan. All gathered at the high school. It was at this session that Prof. Crocheron introduced the new farm adviser and Dean Hunt made his address.

Prof. True arrived after all had

made appeal to the members of the farm bureau to stand by the new farm adviser, for he will never succeed unless he has the fullest cooperation on the part of the membership. He finished with an appeal for new members. The programs, as provided, had blank for filling in, and a campaign was made for a greatly increased membership.

### CANADA'S PROBLEM

From the address delivered by Dean Forsyth Hunt, "Canada at War," we take the following regarding the returned soldier and the problem which Canada will have:

By Dean Thomas F. Hunt

Just north of the United States, separated for the most part by an invisible line, lies a country either somewhat larger or just a trifle smaller—I do not know and it does not matter which. It contains about eight million inhabitants. I do not know whether Canada raised this year 29 or 31 bushels of wheat for each man,



In Front of the Farm Adviser's Office, El Centro

Left to right: A. E. Madison, secretary Imperial County farm bureau; C. E. Sullivan, adviser; W. W. Weir, drainage expert United States department of agriculture; J. P. Hertel, assistant farm adviser.

been dismissed. Holtville is worthy of far better railroad connection with the outside world that she now has.

State Market Director Weinstock urged the need of organization on the part of cotton growers, cantaloupe growers, dairymen, in fact every type of producer in the valley.

Walter Packard, whose abilities and energies have been so freely given to the developing of Imperial Valley,

woman and child, but I do know that the United States raised less than seven bushels per capita. Canada is particularly noted for her wheat and cheese, both as to quality and quantity; we for our corn and cotton.

The more imaginary that now imperceptible line becomes the better it will be for both countries. Canada will need our cotton, pork, oranges

Continued from Page 263



At the Barbecue

Dean Thomas F. Hunt of the state college of agriculture is getting a "helping" of beans from the Red Cross lady. Immediately back of Dean Hunt is B. H. Crocheron, farm bureau leader for California.

of Paul Dougherty who had gone into active service. This position he has filled several months, and because of his willingness to forego the greater honor and take a lesser salary he was tendered the position of permanent adviser, which he accepted at the time of the afternoon session of the Assembly.

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The Bread Line at Holtville

The barbecue was served in the little park in the center of the town. The city park is shown in the background.



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## More June Drop Discussion

Written for California Cultivator By Robert W. Hodgson



THE observations in the Cultivator of February 9 by Mrs. M. H. Dewey relative to the influence of intercrops in Washington Navel orchards on the setting of the fruits have been of particular interest to the writer. For several years the division of citriculture of the state agricultural college has been working on this problem, and the agricultural experiment station has recently issued Bulletin 290 in which the results obtained in the investigation are summarized in popular form. A more detailed technical paper will appear in the near future in the University of California Publications in Agricultural Sciences.

The citrus tree is a native of tropical regions where the climatic conditions are much more favorable for plant growth than they are in our California citrus districts. Through centuries of evolution the genus citrus has become best adapted to a tropical environment. The arid southwestern part of the United States where our citrus orchards are located is really a reclaimed desert where agriculture is made possible through the use of irrigation water. Therefore, citrus trees as grown in our climatic conditions are subject to an entirely abnormal environmental complex. Arising from the strains incident to these abnormal conditions are a number of exasperating troubles, such as the "June Drop," puffing of the fruit, splitting of the fruits, and others.

The "June drop" has been found to be caused by the inability of the citrus tree to exercise control over its water loss. Under California conditions the period beginning when the trees are in bloom, and continuing throughout the growing season is hot and dry. In ordinary seasons, it is not so much the heat which is noticeable as it is the dryness. In Southern California it is not at all uncommon to register relative humidities as low as ten per cent, although the temperature is not abnormally high. Under these conditions, during certain times of the day the young citrus fruits and leaves lose more water than they can get through the water conducting system of the tree from the supply in the soil. The fruits being higher in water content than the leaves, actually lose water to the leaves. Many plants, among which are the Washington Navel orange, cotton, indigo, and the chick pea, under such conditions of a daily fluctuation in water content of the young fruits, shed these parts by a process technically known as abscission.

Climatic conditions, therefore, are the underlying cause of the June drop, and that is why every year the drop is serious in certain very hot and dry districts. In other districts climatic conditions are not so severe and in normal seasons a good crop is set. But, if hot dry north winds or exceptionally high temperatures are experienced, a large part of the crop is shed. This is the explanation of the very heavy shedding which followed the heat wave of June 15-17, this last season.

A certain varying per cent of the shedding has been found to be due to a fungus *Alternaria*, which is also responsible for the black rot of navel oranges. The amount of shedding from this cause is so small and the manner of infection such that the writer does not believe spraying will pay for the trouble involved.

Since most of the June drop is pure-

ly climatic, methods of control or prevention must be in the nature of modifying climatic conditions. It has been found that growing alfalfa and other intercrops between the trees modifies the climatic conditions sufficiently to set much heavier crops.

One of the orchards studied in June drop investigation, is the C. W. Kellogg orchard, located just out of East Bakersfield. This orchard is well protected by a windbreak and a portion is planted solidly to alfalfa. Ever since this orchard was planted to alfalfa it has borne very satisfactory crops, whereas other Washington Navel orchards in the vicinity have failed to do so. The climatic conditions in the orchard have been greatly modified as was shown in the investigation, but it was impossible to differentiate between the effect of the windbreak and the alfalfa.

The writer had under observation last season a 40 acre Washington Navel orchard in Butte County, which was not protected in the least by any windbreak. In fact, the orchard occupies a most exposed position. In September, 1917, it was planted to vetch, and an excellent cover crop resulted. This orchard was not plowed in the spring, but was kept heavily irrigated until the vetch seeded and began to die. Plowing was done about June 1. In spite of the exposed position occupied by this orchard it bore by far the best crop obtained in the district this last season. Where others obtained a 20 per cent crop, it bore a 50 per cent crop.

The evidence secured in this June drop investigation points to two different factors, each sufficient, if accentuated, to cause the shedding by bringing about the fluctuations in water content noted above. One is high soil temperatures and the other low atmospheric humidity. High soil temperatures act to prevent absorption of water by the roots at a time when the draft of the atmosphere on the plant for water is very severe. Under the prevailing clean culture practices in most of our citrus orchards soil temperatures during the afternoon are quite high. In the Kellogg orchard the alfalfa acts both to decrease the soil temperature and to increase the atmospheric humidity. The former is accomplished by the shading and the latter brought about by the addition of large quantities of water vapor to the atmosphere surrounding the trees. In the case cited by Mrs. Dewey, however, as well as in the case just referred to above, this latter factor cannot be considered to be of any considerable magnitude. The effect noted seems to be due largely to the shading of the ground with the consequent reduction in the soil temperatures.

A word of caution regarding the crowing of intercrops to set heavier crops should be given. Growers cannot expect any beneficial effect of intercrops on the setting of the fruit unless sufficient irrigation water for both is applied. If only sufficient water is available to satisfy the demands of the trees, disastrous results can be expected to follow if intercrops are grown. The trees must not be permitted to suffer for lack of water, especially during the critical period which extends from the time of bloom for six weeks to two months afterward.

Other measures calculated to ameliorate climatic conditions may be expected to result in heavier crops. Such are the planting of windbreaks, soil mulching and a moderate winter pruning to reduce the excessive leaf area.



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## THE ORANGE OIL INDUSTRY IN JAMAICA

By United States Consul Charles L. Latham, Kingston, Jamaica



THE earthquake that in 1908 laid Messina in ruins and caused a setback to the Sicilian production of essential oils gave the first important impetus to the new orange oil industry in Jamaica. Previous to that time Sicily had been the chief source of supply of the oils of orange and lemon, and until large stocks were lost during the earthquake there was practically no sale for West Indian orange oil. There is a difference in chemical constituents between the Jamaican and the standard Sicilian oil, and buyers were not inclined to change and thus risk altering the flavor of their products. The adequacy of supply of the standard oil to which they were accustomed also militated against the Jamaican oils finding a market except at lower prices. Small quantities had been sold as low as 75 cents a pound, which was less than the cost of production.

The prices of orange oil rose on account of restricted supplies and the prospect of reduced production, and the rise marked an opportunity for Jamaican oranges. The trade at the time faced marketing difficulties as a result of the tariff against citrus fruits in the United States and the distance that separates Jamaica from other points where so perishable and bulky a fruit could be advantageously sold.

### Previous Production Experimental

The rise in the value of orange oil made it plain that there was money in the business of extracting it. Up to that time the production had been largely experimental, but the experiments had been sufficiently profitable to indicate that with increased prices, the local glut in production of the fruit, and the good supply of cheap labor the oil could be furnished in large quantities, and a worth-while trade built up as soon as prejudice against a new source had been overcome.

Orange oil has a strong aroma and is used in the making of perfumes, essences, cakes, biscuits, confectionery, soaps (to a small extent), and flavors for beverages. The strength of the aroma is ordinarily indicative of the quality of the oil.

The principal use for which Jamaica orange oil is sold is in the manufacture of fancy biscuits, particularly of a wafer biscuit which is extensively used in the United States with ices and iced drinks. Sales of the Jamaica oil also are made to drug manufacturers.

The essential oil of orange is contained in the small cells that form the outer layer of an orange skin. These may easily be seen under a magnifying glass. When some oranges are peeled the pungent oil spurts out to a noticeable degree. It needs no distillation, melting, or other process, as do some essential oils and perfumes. It has simply to be drawn off by tapping the innumerable tiny cells and collecting and saving the volatile fluid. It must not be diluted with the orange juice, and must not be exposed for more than a brief time to the light and air. It should not be extracted with anything made of iron or steel, or the delicate product will be injured. It should be kept in air-tight and absolutely clean receptacles. It is rather liable to deterioration, and great care in handling is necessary.

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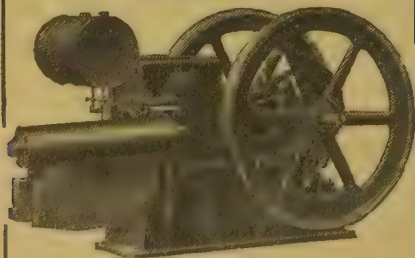
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only one in vogue for the production of orange oil in Jamaica employs what is known locally as a "rinder," or escuelle, though the latter term really applies to a more elaborate machine such as is used in Messina. The rinder is a shallow copper basin coated with tin on the inside and studded thickly with sharp copper tacks of about three-quarters of an inch in length, pointing inward and upward. At the bottom of this vessel is an oil-collecting receptacle which is shaped like the spout of a funnel, with the larger end opening into the basin and the small end closed. Some of the rinders are made locally and do not have a very finished appearance. The tendency has been to make the points too long, too sharp, and uneven. The rinder is held between the knees of the operator, who is seated, and with the open palm of the hand the orange is rolled lightly over the points of the tacks. These prick the cells of the rind, and the oil oozes out. The orange is ordinarily rolled until no more oil exudes. When the funnel is filled the oil is poured through a piece of cloth into an ordinary bottle which holds a quart or less.

At this stage of the process the oil frequently is found to contain some orange juice, and at times a mucilage. These foreign substances sometimes make it necessary that the oil be permitted to settle. Thereafter it is carefully drawn off and filtered into copper pots or pans, lined with pure tin, or occasionally into tin receptacles. The rinding, though a simple operation, requires some care and skill. The length and evenness of the tacks in the rinder are important factors for the extraction of the oil without great waste. They should prick the orange skin only. If they are uneven, or too long and sharp, either all of the orange oil will not be extracted without increased labor, or the orange juice will come through and make extra filtering necessary, with its attendant waste.

Several attempts have been made in the past to introduce machinery to supplant the simple rinder now in use. These have met with but little success. The rinding in Jamaica usually is done by women or children who work for small wages.

Very little oil can be taken from the skin of each orange, so that considerable labor is necessary to get even a pound, and the quantity of oranges consumed is very large. The trees are scattered, and the gatherers, principally girls and young boys, are sent out into the properties to gather the fruit and collect the oil on the spot. They soon become very expert. By this method they have only to carry the oil to the manufacturers, the fruit being left on the ground.

In Jamaica the oranges are not cultivated in groves as in Sicily, but are spread out over the country in pastures and on hillsides. The orange oil is collected by the groups of girls and boys operating as follows: The boys shake the oranges down, and the girls sit below the trees and do the rinding. They may eat as many oranges as they like, of course, and after the rinding the rest of the fruit usually is flung away, cattle and pigs feeding upon it to a certain extent.

The laborers in Jamaica are paid from 30 to 60 cents a bottle, according to the quantity of oranges available within certain distances, and the laborers have to collect the oranges. The picking is done in the early hours of the day; the rinding should be done immediately in order to get the greatest quantity of oil of the best color. The fruit should be picked when full, but not entirely ripe, as in the latter condition the oil has a deeper color and brings a lower price. If the picking and rinding take place during the heat of the day the yield is smaller than when done at a lower temperature. The operator sometimes sits on a box, the rinder being attached to an arm extending in front. A good worker will get 2½ pounds of oil from 1200 oranges.

#### Quantity Depends on Condition of Fruit

A local dealer states that 500 oranges will yield approximately one pound two ounces of crude oil, or one pound filtered, and that it takes eight hours to produce one pound of crude oil. The quantity obtainable depends entirely upon the class and condition of the fruit. Oranges grown in a cool section of the island will yield more oil than the fruit grown in a warm one.

## Bean Bags

Lima bean growers are in luck in having ordered bags for next season's pack. We note in the Lima Bean Bulletin:

"Having made careful investigation from various sources which led us to believe that, unless the war ended suddenly or unless a dry year very materially reduced the grain crop, there would be very little likelihood that prices on bags would be lower, and, on the other hand, conditions were such that it might easily prove that only those who placed definite orders when opportunity offered would be able to secure their supply of bags, we promptly protected the definite orders of our grower members by placing contracts with two of the bag companies. These orders total an equivalent of 525,000 bags of 80 pound size, although a considerable portion of orders were for bags of 100 pounds size. Contract prices were 16 cents and 20 cents per bag f. o. b. San Francisco. Within a few days these prices were advanced one cent per bag, to 17 cents and 21 cents each. We understand independent dealer quotations are about two cents per bag higher than these prices.

"We think we have sufficient quantity fine grade flax twine on hand and contracted for August delivery to sew all the bags ordered through us by our members, if the twine can be properly distributed. One 12 pound bundle of twine will sew 2000 bags. If members will advise their local secretaries that they desire to purchase twine through the association for sewing the bags they have ordered, we will try and see to it that each local association is supplied with proper quantity of twine on above basis. We are going to be able to furnish twine at a price in the neighborhood of 63 cents per pound. Similar grade of twine is worth from \$1.10 to \$1.15 per pound on today's market."

As a war measure the government of Portugal has created a special department to encourage all necessary agricultural operations during the world war and for two years after the treaty of peace is declared. By this decree, the means of renting cattle, motor machines, and implements will be placed at the disposition of the farmers who need them. The employment of all materials that may be used as correctives and fertilizers will be encouraged. Fertilizers and seeds will be furnished to those who require them, to be paid for immediately or at harvest time.



COUNTY ANNUAL ASSEMBLY

Continued from Page 259

and casaba melons. The United States will need their wheat, beef, wool and furs. We need her tourists; she needs our farm laborers. The acme of prosperity in Western Canada is shown in one's ability to spend the winter in California. Naturally and properly they assert that Canada is the only place in which to live, but if they want to tell you how prosperous a man is, they say he has enough money to spend his winters in California.

In much of Canada below zero weather usually occurs during each of five months in the year. In some good agricultural sections the mean January temperature may be below zero. At one of the most prominent dominion agricultural experiment stations the temperature last January touched 51 degrees below zero. The guide books have perfect warrant in stating that in all respects Canada is a white man's country. The climate of Canada produces a fine race of people. There are none better. It is Emerson who said that "the truest test of civilization is not the census; nor the size of the cities; nor the crops, but the kind of men the country turns out." Canada has met this test during the past three and a half years.

It was my privilege to spend the latter half of October in Canada in order to determine if possible what happens to a people and its agriculture during three years of war.

Re-education of the Soldier

In October Dr. H. M. Tory, president of the University of Alberta, had just returned from England and France where he had gone under the auspices of the Y. M. C. A. to prepare an educational program for the demobilized soldiers. As President Tory puts it, "to save the intellectual elements of the army." Men's lives have been so intensive that they have forgotten that they ever knew Euclid. Put under the proper surroundings the lost knowledge would return. The constant fear of the soldier is that he must take a lower walk in life than that to which he has been accustomed. Out of 1860 men examined 1370 stated they desired to pursue some form of education after the war is over. Of this number 600 desired training in agriculture, while a similar number stated a preference for engineering. Dr. Torey believes it will be possible at some camp in England to provide intensive training or formal instruction to 40,000 and to provide popular lectures for 100,000 additional men. The professors of the universities of Canada will be called upon, as well as officers of the army who were formerly in the faculties of those institutions. The plan has governmental approval, and Dr. Tory is now probably in England working out a skeleton organization and developing the curricula. It is estimated that this salvage can be accomplished for \$1,000,000, the cost to Canada of one day's war, and that it will be easily worth \$10,000,000 to the country.

Land Settlement

Canada has passed a law that any returning soldier may have in addition to the usual homestead right, which is an allotment of 160 acres of land, a government loan of \$2500 without any other security than the fact that he is a returned soldier. In the three prairie provinces of Manitoba, Saskatchewan and Alberta there are 10,000,000 acres of available dominion land within ten miles of a railroad, 15,000,000 acres within

15 miles of a railway, 20,000,000 acres within 20 miles of a railway and 270,000,000 acres over 20 miles from a railway. This is not all the agricultural land that the Canadian government possesses, but not being the immigration agent for Canada I desist from further expansion of the subject.

However there is not full agreement as to the plan just outlined. The minister of agriculture of Alberta favors issuing bonds and purchasing railroad lands near railroads. He would sell the land to returned soldiers, provided they were previously farmers or farmbred, on a 30 year amortized pay-

ment plan. He deems it better to locate these people close to a railroad than to try to colonize a wholly new country where they must develop new railroads, county roads, school houses, churches and towns, all of which must be paid for chiefly by the community itself.

It may not be out of place here to refer to the land settlement plans of the Canadian Pacific Railroad "While our enterprises are now successful," said Mr. Cameron, "more than half the settlers did not stick. That, however is true of most homesteaders. Although a certain percent-

age of the original settlers has been very successful, it is the third set of families that usually succeeds."

The three factors essential to success emphasized by Mr. Cameron are:

Obtain suitable settlers by hand picking.

Give them a sufficiently large piece of land to make a decent living.

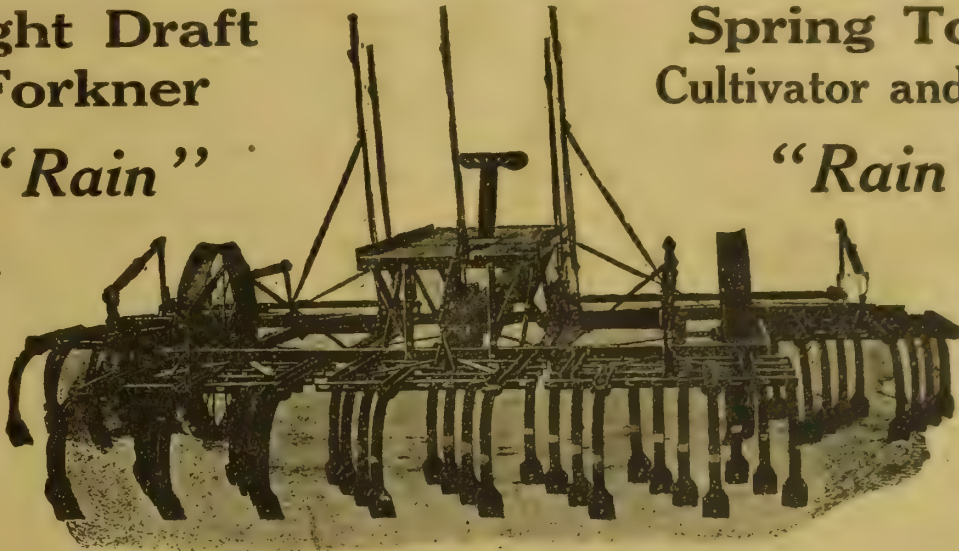
Do not practice too much spoon feeding. For example if settlers are not held somewhat rigidly to their contracts, they are apt to buy pianos instead of making their payments.

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# 150,000 Farmers Quit "Guessing" When They Paid Our Dealers \$10,000,000 for "Z" FARM ENGINES

150,000 Farmers Chose These "Z" Engine FEATURES:

1. Fairbanks - Morse QUALITY.
2. Economical in first and fuel cost, and low up-keep.
3. Simplicity and staunch durability.
4. Light weight, substantial, fool proof.
5. Gun Barrel Cylinder Bore.
6. Leak-proof Compression.
7. Complete with Built-in Magneto.
8. More than Rated Power.

Economy and efficiency, with "more than rated power" in an engine is the war-time-demand of farmers of America.

They have "quit guessing"—they demand action, proof-performance on their kind of work.

So 150,000 leading owners have backed their judgment on the FAIRBANKS-MORSE "Z" Engine with \$10,000,000.

That's a lot of engines bought for reasons you'll find are wise ones.

## "Z" 3 & 6 H.P. ENGINE

Uses Economical KEROSENE Also Distillate, Coal Oil Tops or Gasoline

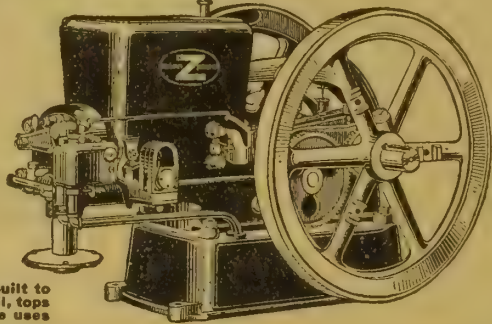
Kerosene, easy to get, at half gasoline costs, does the work in a "Z" with more than rated power. FAIRBANKS-MORSE engine designers saw this war-demand coming and built "Z" Engines to fit the farmers' needs. The farmers know it now—over 150,000 strong. Will you too investigate? Compare. Figure out the FACTS—before you buy ANY Engine. *Alright—we know the result, because—*

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Both With Throttling Governor  
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All F.O.B. Factory, With BUILT-IN MAGNETO

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Chicago - Manufacturers

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ONE NUSYSTH GUN DOES THE WORK OF TWO MEN ONE DAY

FOUR NOZZLES TWO RODS TWO LINES OF HOSE TWO MEN TWO DAYS

SAVES LABOR TIME MATERIAL

ONE MAN WITH A NUSYSTH GUN DOES THE WORK OF TWO MEN USING REGULAR NOZZLES.

ONE MAN DOES FOUR MEN'S WORK. ALL THE SPRAYING IS DONE FROM THE GROUND. HENCE NO LOST TIME, LOST LABOR, NO INCONVENIENCE FROM WORKING RODS AROUND AMONGST THE BRANCHES.

AS A RESULT OF THE RAPIDITY AND EASE IN DOING THE WORK LESS MATERIAL WILL BE USED.

100% MORE EFFICIENT THAN RODS AND NOZZLES

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For Every Purpose NEW Threads and Couplings Hot Asphaltum Dipped

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Screw Casing Fittings and Valves Guaranteed for Pressure

TESTED and GUARANTEED

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Main and Howard Sts. San Francisco

## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Standard Varieties of Chickens

The animal husbandry division of the U. S. D. A. has issued a bulletin on Standard Varieties of Chickens, Farmer's Bulletin, 898. It gives a drawing or glossary chart naming various sections of fowl, also half tone illustrations of all types of the Mediterranean breeds. The bulletin may be had by writing the Division of Publications, U. S. D. A., Washington, D. C.

### Feed for Turkeys

Having found your "Questions and Answers" column to contain reliable information I would like your advice in regard to the eggs our turkeys lay. The eggs are either soft shelled or have two or, even as many as three, yolks in them. Out of one setting of 13, six were double or three yolks, three were soft shelled and four were good. Our turkeys have free range, being in our alfalfa most of the time. They have plenty of oyster shells all the time but we do not feed them anything else such as grain, etc.—Subscriber, Acampo.

Breeding turkeys should have some hard grain. Wheat and oats are best but other grains may be given. Your turkeys are not getting sufficient protein to make a white for every yolk nor lime enough to make a shell for every egg. Oyster shell is all right as far as it goes, but they need the mineral matter as well as the protein of hard grain. Many breeders let the turkeys forage for themselves when they are not laying, but when laying time comes they must be fed.—J.A.K.

### Possibly Chicken Pox

Our chickens have little white seed-like formations under skin. A nice fat hen had nearly a teaspoonful when we killed her. It is more noticeable in chickens over a year old but even fryers have them.—Subscriber, Huntington Beach.

Those little white seed-like formations under the skin may be the beginning of chicken pox. It would be impossible to say without knowing more of their location, number, appearance, length of time they have been there. If they develop into larger nodules and finally form a scab, your hens probably have a mild form of chicken pox. If there is no change at all you might try painting some of them lightly with tincture of iodine. It could do no harm and might scatter the formation, whatever it is.—J. A. K.

### Worms in Gizzard

On the thin part of gizzard in the younger chickens principally there are wire worms. There seems to be an abscess, but when opening, a nest of from two to four worms is found and you can see where they have perforated the inside of gizzard. These chickens have free range of ranch. — Subscriber, Huntington Beach.

The worms in the gizzard may be treated with tobacco. For 100 chickens steep one pound finely chopped tobacco stems two hours in water and mix the liquid with ground feed sufficient for half the usual feeding. This mash should be given about 2 o'clock, the fowls having had nothing to eat since the night before, and not a full meal then. Two hours after the mash is fed, give half the amount of mash previously given, but this time moistened with water in which Epsom salts, (11 ounces for 100 birds) has been

dissolved. Repeat the treatment in seven days. The amount given young birds should be in proportion to age.—J. A. K.

### Getting Rid of Salt Grass

I have some low, black, damp land that previous to the flood of two years ago was in good producing condition. At that time the alfalfa was drowned out and since then has not been plowed until the past week. (Has been too wet for farming). During the two years a heavy growth of salt grass has formed; so that the heavy root growth made it very heavy plowing with good team. Since disking and harrowing the ground it appears almost a mass of roots in spots. Can you tell me how best to get rid of the salt grass? Have been advised by a neighbor to plow several times with breaking plow during the summer and not try to raise a crop, but that means a year's crop lost. Would it be advisable to sow barley now with the view of smothering out the salt grass, and when the barley is harvested sow in Sudan grass with the same end in view, provided sufficient moisture is present? Would it be advisable to try to raise some crop that could be thoroughly cultivated, such as cabbage, corn or milo, in the soil less affected by the salt grass? There is some alkali, but not enough to seriously affect crops, I judge. With a reasonable rainfall the rest of the season the ground will require no irrigation for this year—Subscriber, Hemet.

It is difficult to describe the proper treatment without having seen the land but would suggest the following: The first thing to be done, if it is possible to reach a lower outlet, is to put in deep drains sufficiently close together to take off the surplus water to a depth of four feet. This will take out the alkali and put the soil in condition to cultivate earlier in the season. The cultivation that can be given will retain moisture sufficient to mature crops. The treatment to control the salt grass should be as follows: Plow as shallow as can be done with a 16 inch mouldboard plow having a sharp share. This will likely be about five or six inches deep. Then go over the ground with a double disk harrow with large disks and follow with a spring tooth harrow having the teeth set to run as deep as the plow. The spring tooth harrow will have to be cleaned often but will bring out the salt grass roots which can be burned. A second disking followed by the spring tooth harrow may be necessary to get most of the roots after which plow again to a greater depth and go over with disk and spring tooth as before. If the work has been well done there will be but few roots left. Barley will not be successful in keeping down the salt grass but Sudan grass sowed broadcast, or drilled close will hold the salt grass in check. If the control method as above outlined is carried out a crop of corn or milo can be grown but this should be cultivated often, both to discourage the salt grass and to increase the crop yield. The milo will come off the latter part of September or the first of October and if any salt grass should be showing the land should be plowed and cultivated to clean out the remaining roots.—J. B. N.

### Native Chinquapin

I have been told that there is an indigenous chinquapin, or chinkapin, in the mountains above San Bernardino. Can you give any information regarding it?—Subscriber, Lakeside.

The chinquapin growing in the Sierra Madre, the San Gabriel and San Bernardino mountains, especially along the "Rim of the World," at an altitude of about 6000 or 8000 feet is the *Castanopsis Sempervirens*.



**Eucalyptus Seed**

Where can one secure seed of *Eucalyptus Pulverulenta* spoken of on Page 169, issue of February 9 of the California Cultivator? — Subscriber, Lakeside.

Seedmen advertising in the California Cultivator can supply this seed.

**Liquid Smoke for Curing Meats**

What about liquid smoke? Is it possible to secure it and is it successful?—Subscriber, Kellogg.

Liquid smoke may be obtained of any druggist and is usually considered successful though somewhat more expensive than the old-time method of smoking. The liquid is brushed over the hams or bacon to be cured and the process repeated for several days. Particulars as to methods of work are given on the package.

**Cold Storage Plant**

The question as to a low-priced, economical cold storage for the farm is one of vital interest in California and occasions many inquiries in this department. The matter was referred to Madison Cooper, at the head of one of the largest refrigerating plants in the United States, at Calcium, New York. Mr. Cooper writes:

"No, there is no such thing as an inexpensive or low cost cold storage plant. If there were they would be as numerous as flies in summer, as the demand for a cheap cold storage plant is unlimited. Any kind of a cold storage plant is an expensive proposition at best; hence they are comparatively rare. For the same reason those in service have proportionately high earning capacity. The so-called power machine driven by electricity is a rather taking thing on the face of it, but I would not recommend it to anyone. In your country where power costs are high and where ice is high in price also, refrigeration is expensive not only in first cost, but in cost of operation as well. The Cooper Brine system, using ice and salt for cooling, is probably the most perfect cold storage system, so far as results are concerned, to be had. There is nothing that will give as perfect control of temperature and as perfect control of purity and dryness of the air of the room. The suggestion to have a frost-proof building, as we call it here, or what is really an insulated building, and open it when the nights are cool and close it during the daytime is all right enough, but it gives very poor control of temperature as compared with artificial means of cooling, and while your subscriber might get some results by this method his results would not be anywhere near as perfect as with artificial cooling. These fruit houses cooled by ventilators are all right enough for short periods but no good for long holding, and should the weather happen to be rather warm at intervals during the storage period, great damage is likely to result to the goods in storage. To sum up, I should say that there is nothing better than the ordinary ice refrigerator for the simple purpose of hotel or country use. This refrigerator should in your climate, where the ice is so high, be especially well insulated. The average refrigerator is a very poor thing indeed so far as insulation is concerned."

**Curing Lemons**

I have a Eureka lemon tree in my back yard which is loaded with fruit just beginning to turn yellow. Can you tell me a simple way to cure them properly and when they should be picked? Will they keep if they are laid in the attic? — Subscriber, Los Angeles.

If lemons can be kept growing until proper size they should be gathered regardless of color. Some of the finest of cured lemons are made from absolutely green stock. The garret would not be an ideal place because of occasional high temperatures and probably too much ventilation and consequent wilting of the fruit. Some of the finest cured lemons we have ever seen were carefully picked from the tree, placed in moist sand, covered entirely, the sand being kept moist until lemons were used. This simply for home use, for they will not keep long once removed from this sand. It goes without saying that they should be kept in a cool place. We have also seen well cured lemons taken from the moist dirt at the roots of the tree. A hole was dug, lemons placed in the soil, covered with dirt and settled about the lemons by irrigation. In curing by the more usual process one must be careful and not allow lemons to dry out and shrivel. In a large way the attendant visits the curing sheds often, observes the amount of "sweating," admits air as may be necessary. For home use one may pack closely in ordinary lug box, and if too much air is admitted, each fruit may be wrapped in scraps of old newspaper. Keep cool or at as even a temperature as possible.

**Soft Brown Scale**

What is the best spray for soft brown scale? — Subscriber, Los Angeles.

We believe the best spray for this pest is the old time rosin wash which is somewhat difficult to manufacture unless one is fitted for it, but it is now made as a regular commercial product and simply calls for dissolving in warm water. Spraying with oil emulsion or commercial oil sprays is also successful. If the pest is on orange trees fumigation is usually successful.

**Dipping Orchard Heaters**

Answering request for information as to dip for orchard heaters, J. E. Adamson of Pomona writes; "There is nothing better than heavy crude oil put on warm, and preferably during warm weather."

**Curing Ham**

Please give direction for curing ham. I am told that the meat spoils around the bone unless an incision is made and the curing solution is forced

ed around the bone or the bone removed. Is any special instrument or tool needed to do this? — Subscriber, Los Angeles.

We think there is no danger of spoiling and no necessity of removing bone if proper time is given to the salting. Where proper penetration of salt has not been secured it is possible hams may begin to spoil at the bone. In order to prevent this some follow the plan of making narrow incision to the bone and inserting salt and saltpeter. We do not think this is necessary. Allow seven or eight weeks time for curing, and we do not think there will be any danger. From Coburn's "Swine in America" we take: "To each 100 pounds of meat use 7½ pounds fine salt, 1½ pounds granulated sugar, four ounces saltpeter. Rub this mixture thoroughly into the meat, especially on the skin side. Pack closely in jar or barrel. Fill with water. When cured thoroughly wash off salt, dry and smoke for 48 hours or longer. This formula is very similar to that used in the larger packing houses." Here is another: "Coarse salt, seven pounds, brown sugar, five pounds, saltpeter, two

Continued on Page 282

# Test Special Belting

What a lot of chores there are to do. There's the farm pumping plant, a busy, humming wheel, turned by the TEST SPECIAL belt, to bring up the water and send it on its useful course, raising crops and watering the animals. TEST SPECIAL is the practical belting for the churn, the wood-yard saw, and the feed-mill, just as TEST SPECIAL is the dependable belting for the lighting plant, and for all the domestic needs. Why buy a miserable, cheap belt which gives way and renders such poor service, when TEST SPECIAL is so reliable, so worthy of confidence, so sure to last and give years of permanent value?

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Horse Power	Diameter in Inches
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Rev. per minute of Driving Pulley.....

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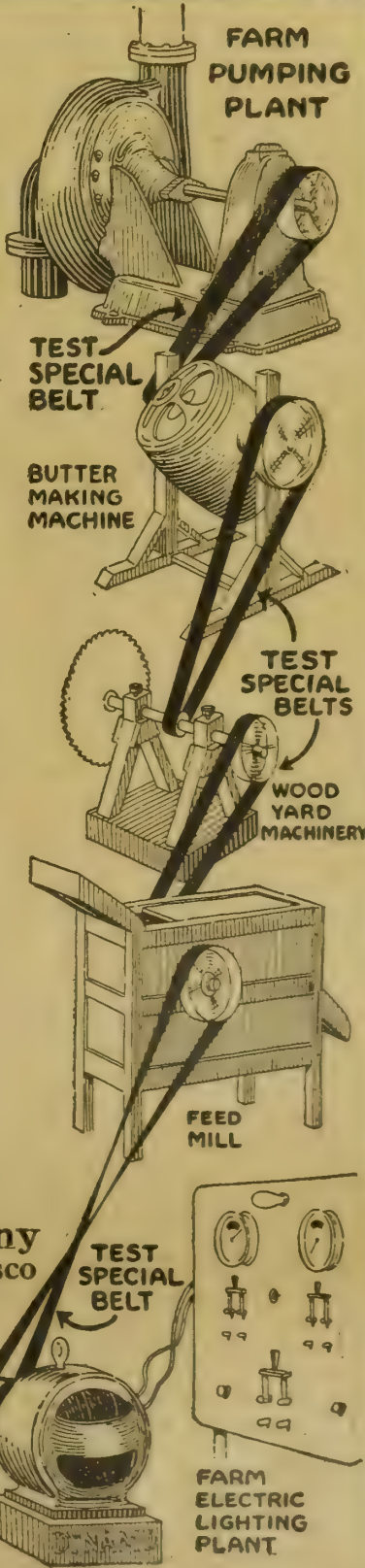
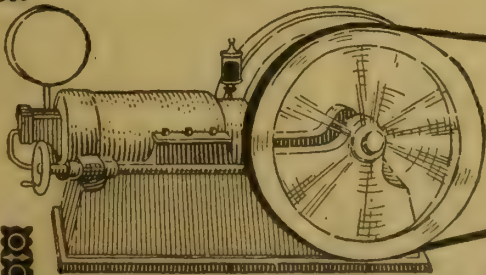
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Established 1877

Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, March 2, 1918

**OUR ADVERTISERS RELIABLE**

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

The school house is becoming more and more the social center of every community. It reminds some of us of the days of the old log school house, or at least of the little red school house, when a narrow board six or eight feet long holding a dozen or more candles, all suspended from the ceiling, made a fine chandelier, and the singin' school or spelling bee afforded occasion for packing the old house to its limit. Later there came a time when the school room was kept sacred for its one purpose, but now it is open to almost every event which has for its object the bettering or uplifting of the community. The photograph on the cover of this issue shows a gathering of the people at the high school of Holtville, Imperial County at the Annual Assembly of the farm bureau of that county. It was a history making event, and Holtville gave royal reception to the farmers of the valley and to speakers from many portions of the state.

**TEST, DON'T GUESS**

Corn growers of the Middle West are adopting two slogans: one, "Do not import seed corn;" the other, "Test, don't guess." These slogans both should convey to California producers truths worth while knowing. The corn grower has learned the need of acclimatized seed. Not so many, but a few, have learned the value of the other slogan which has to do with the testing of seed. But if the farmer, who depend upon the summer-through precipitation from the skies to save irrigation expense and whose lands, as a rule, are far lower priced than those of the Californian, finds it wise to secure greatest efficiency by testing his seed and knowing its characteristics, surely the Californian should be more desirous of testing and selecting.

**OUR BEST**

A glorious rain has come. A bit later than some wished but so copious that every section of the state shows California at work as never before.

We are now doing our bit—our B-E-S-T.

**THE ORANGE SHOW**

It's a great showing of citrus fruits and products. It's a great rain which has been poured out in blessing upon it. It approaches its end with glorious sunshine glistening on the deep snows of its nearby mountains. More another week.

**FAMINE**

President Schurman of Cornell University says: "Of all the great problems of this colossal world war the food problem is now the most important. Man power can be raised by conscription up to the point of exhaustion. The allied lines from the North Sea to Switzerland are piled high with munitions, which the output of French, British and American factories is constantly augmenting. But everywhere the supply of food is limited, and beyond a very narrow margin you see the edge of an inferno of starving nations. Yet no problem of the war is so much misunderstood. The simple question is this: Can we keep our own and our allied soldiers and civil population from starvation? It is not all a question of price. It is solely a question of supply."

A year ago we began this campaign for producing more food, and we answered the call with even greater production than anticipated by many. Still, few of us realized the necessities of our allies or of the neutral countries of Europe. So far as we could we have met their needs, and our response has been so liberal that today some of the largest centers of the East are finding themselves going hungry. This may be due to transportation difficulties, to food hoarding, or perhaps a number of other things, but it affords opportunity for all to stop and ask what will be the condition of all of us a few months from now. President Schurman is one of the many who are calling attention to this condition and asking American producers to do their best.

**COURIERS**

The greatest of generals, with the bravest and best trained men in the trenches, would be unable to render effective service for his country without possibility of communication. Hence the necessity for the bravest and most dependable courier, or carrier of the message. Now, with our food campaign calling for as persistent and effective work as the best of work in the trenches, the administration at Washington, and all of its commissions and organizations working for greater production, would be helpless without means of carrying the word to the men who do the producing.

The California state council of defense, recognizing the value of the papers of the state in extending the usefulness of its work, has devoted some time to investigating the accomplishment of these papers. It has found that "Figuring on a basis of two cents a line, advertising space worth more than a quarter of a million dollars has been contributed by newspapers in California to war publicity propaganda sent out by the California council of defense since April 6 of last year."

The council adds: "This does not include any publicity given to the efforts of the department at Washington or to liberty loan publicity or other than strictly state work."

We believe no service has been rendered more willingly to our government than this by our newspapers, and it has all been without one penny of compensation. Yet the congress of the country would penalize this great force by increasing its postage rate until papers printed in the United States will pay from six to 40 times as much as do papers in Canada.

**KILL THE "BOARDERS"**

Cow testing came and showed many a dairyman that he had many an animal which was not even paying for its own feed to say nothing of the labor of caring for it. Why does he keep them? Because he has not yet learned how easy it is to weed out these non-profit bringers. The cow testing association is accomplishing that.

To encourage the use of only the very best animals among the farmers these dairy cow record associations endeavor to induce their members to not only test their cows to know the point of profit bringing but to bring them far beyond mere profit bringing and to make great producers and determine strains which may produce other great producers. Hence advanced registration open only to cows of greatest worth.

Now the wool producers are discussing the advantages which would come to their industry if they could put their fine-wooled sheep into an advanced registry. Note the ideas advanced by Prof. Miller in issue of January 26. Why may not advanced registry extend to other animals as well as to the dairy cow?

**FIX-IT-WEEK**

The winter's breaking up back East, and the food administration, council of defense and other agricultural efficiency experts are urging that this next week shall be a general time for repair, fixing up and taking stock of the needs of the coming season. The week is perhaps rather late for these glorious rains and there will be one grand procession of plows, of drills and harrows from Shasta to the Mexican line, and only such fixing as is necessary will be possible. But the idea is a good one, and the man who is not able to engage in actual soil tillage may well use every spare moment to check up needed parts of implements and machinery, to rebabbit the bearings, to repack and put in new valves on every leaky water fixture, to take stock as to needed seed, sacks, crates, orchard boxes, trays, implements or tools of any kind—and get orders in early.

Perhaps in overhauling the mower or some machine or implement needed a month or so later, it may be found that it is worn beyond economical repair and purchase of new is necessary. There will not be machines and implements enough to go around this year, and the early bird will get the best picking. There is too much money invested in some of our better farm implements, and too much invested in the crops which we are producing, to take any chances in a machine lying idle when it should be saving a crop.

In this connection it may be proper to suggest that in overhauling these machines there will be much junk or old iron which may be turned into coin and give the manufacturer the

iron which is needed to put into new implements.

Remember first week of March paint, repair, order new or fixit ready for service.

**This Week's War News**

No action whatever on the Saloniki front.

"Three years longer of war" is said to be the belief of many in Washington.

The Italian front has been quiet with a little possible advantage with the Allies.

In Palestine the English forces under Allenby have advanced slightly, the town of Jericho, down near the head of the Dead Sea, being captured.

Lord Reading, the new special British ambassador and high commissioner, has arrived at Washington. Cecil Spring-Rice, the former ambassador, died in Canada on his way home.

This country was stirred by the claim that the American front in France has been endangered by lack of airplanes. The war department assures, however, that this need will soon be met.

Breweries of the United States have been instructed to purchase no more barley until more definite ruling can be made by the food administration as to future use of grains in the manufacture of intoxicants.

Artillery activities have increased somewhat on the French and Belgian front, and the Sammies have had almost daily practice in trench raiding or repelling Teuton raids. Every day brings its report of one or more American boys slain.

Von Hertling has replied to Wilson's address to congress: "Fundamentally agreeing with the four principles which President Wilson proposes" but "they must be applied in mutual exchange of views." It is considered merely a shifty evasion. "We will hold Alsace-Lorraine" is the cry of the militarists.

The Germans have captured Reval on the Baltic Sea, and are within a day or two's march of the city of Petrograd. The Russians have finally roused up and are making weak resistance, but it is considered that Petrograd is doomed. The Germans announce they will treat with Russia as a conquered nation and refuse to confer regarding any peace treaty. It is rumored that Japan will enter Siberia and prevent German control.

As to battles or severe fighting this has been one of the quietest weeks of the war. There have been deaths of student aviators, occasional trench raids, the German army has marched a little deeper into Russia, but nothing decisive anywhere has occurred. On the other hand, it has been a great week from the standpoint of diplomacy. In this Germany seems to be the winner with an upheaval in Russia which leaves all the world guessing. The great task now confronting the Allies seems to be that of bringing the scattered fragments of the Russian nation together.

"The paths of the sea must, alike in law and in fact, be free. The freedom of the seas is the sine qua non of peace, equality and cooperation."

Gerard has said, "The only power which the Prussian will respect is the power of force." Strength to the arm of the president that our force may be swifter in action.

"The time will come when this great conflict is over and when the truth can be impartially determined. When that time arrives, those responsible for violations of the rules of civilized warfare, if such violations have occurred, and for false charges against their adversaries, must of course bear the burden of the judgment of the world."



# Agricultural News Notes of the Pacific Coast

## Northern California

Butte County is canning spinach.

The Alameda County Farm bureau will employ a cow tester.

The dates of the next state fair are August 31 to September 7.

The next fair at Ukiah, Mendocino County, will be August 5-10.

There will be a farm adviser conference at Berkeley, March 4-9.

A new alfalfa meal mill has been located at Woodland, Yolo County.

Marin County now reports green feed for stock following recent rains.

Auburn, Placer County, is improving its roads with chain gang specialists.

Ferndale, Humboldt County, already has its plans completed for its fair to be held next August.

The next meeting of the Alameda County farm bureau will be held at Centerville, March 2.

Potatoes are the cheapest since the war, but there will be general planting in the present outlook.

Petaluma poultrymen feel that their cooperative marketing organization is in a stronger position than ever before.

A war conference at which producers of all California are invited to be present is called for San Francisco, March 5 and 6.

Deciduous fruit growers who have observed conditions in the northern end of the state predict an exceptionally large crop.

Farm Adviser Merrill of Sonoma County announces that Sonoma County has sufficient pasturage to care for much outside stock.

A by-products company is planning to purchase pits of peaches and apricots from canners and dryers for the purpose of extracting oils.

Opponents of Reclamation District 833, comprising 40,000 acres near Gridley, Butte County, are opening a fight for dissolution of the district.

Sutter County has signed up 6000 acres of raisins with the Associated Raisin Company. This is practically the entire raisin acreage of the county.

Manager Porter of the Palermo, Butte County, Citrus Association, reports that members received an average of \$2.87 per box net on all oranges shipped through the association.

The food commission of California is cooperating with cattlemen in endeavoring to bring together pasturage and starving cattle. L. A. Nares of Fresno is in charge of the work.

The Ehmman Olive Company at Oroville is transplanting 3000 olive trees, 26 years old. The trees are being brought from Lodi in San Joaquin County, where the trees were planted 24 feet apart.

At a meeting of live stock men at Napa, with delegates from many northern counties, method of coyote control was discussed, and it was recommended that there should be a bounty of \$20 each on coyote scalps and \$2.00 on wild cats.

The secretary of agriculture has authorized nine per cent more stock to be grazed in the Stanislaus national forest this year than last. The number authorized to be grazed this year is 20,625 head of cattle and 10,850 sheep. In 1912 the number grazed was 13,000 cattle and no sheep.

## Central California

The entire valley was visited by a fine rain last week.

Stanislaus has completed 92 miles of its contemplated 126 miles of good roads.

Peach growers of the San Joaquin Valley are spraying for curl leaf prevention.

Federal agents are conducting investigation of poisoning of 350 sheep south of San Francisco.

The Terra Bella irrigation district will take over the plant of the Terra Bella City Water Company.

If seed can be secured the planting of Long Staple cotton in the San Joaquin Valley will be immense.

The greatest rabbit drive yet pulled off in the state was on Washington's birthday in Stanislaus County.

Madera recently held a drive which netted 6000 rabbits. It covered six sections of land and 600 people engaged in it.

The raisin packing plant at Madera is being extended and improved in anticipation of a great pack the coming season.

Farmers of Madera County are appealing for relief from the game laws protecting cottontails which are doing immense damage.

The Kern County farm bureau has an auction manager who manages various auction sales under the direction of the farm bureau.

An agricultural expert from Victoria, Australia, is investigating methods of work of various farm bureaus in the San Joaquin Valley.

The state fish and game commission announces that mud hens make exceptionally good eating and owing to the prejudice against the name suggests "water chicken."

It is reported that wild geese are doing great damage to the wheat fields in the Tulare Lake district and it is urged that the closed season on geese be opened for the time being.

The Associated Raisin Company has elected officers for the coming year. They are F. H. Wilson, W. V. Buckner, H. H. Welsh, A. G. Wishon, H. Graff, Hector Burness, and Wylie M. Giffen.

Monterey County and Santa Cruz County bee keepers are to meet at Monterey March 2. Profs. de Muth and Coleman of the United States department of agriculture will make addresses.

Chairman Roeding of the Kings River Conservation District presided at a meeting held in Fresno last Thursday, which advanced plans for perfecting an immediate permanent organization.

The Modesto irrigation district has refused to join the Turlock irrigation district in its plans for building Dam No. 2 on the Tuolumne River. It is estimated that the cost of such a dam would be about \$3,000,000.

A ruling of the internal revenue permits in making reports of income for income tax the deduction of irrigation district taxes which have been paid to meet current expenses, but assessments to extend canal systems or pay for permanent improvements are not deductible.

At a meeting of stockraisers of the San Joaquin Valley, held at Fresno on February 7, to confer on some method of dealing with the feed shortage problem, it was decided to make an appeal to the government to permit use of the national parks and reservations for the summer of 1918.

## Southern California

County Food Administrator Cole of Los Angeles County has appointed a "fair price committee."

The Los Angeles County farm bureau has issued Vol. 1, No. 1 of the Farm Bureau Monthly.

The national orange show is now on at San Bernardino. The last day is Thursday, February 28.

Holtville shipped out more than 45 tons of turkeys for the Thanksgiving and Christmas markets.

Coachella Valley in Riverside County recently shipped a full car of spinach to Eastern markets.

Honey produced at Brawley, Imperial County, has been selling at around 16½ cents per pound.

At the recent meeting of the Hemet Orange Growers' Association, F. W. Stetson was elected president.

A proposal to establish a cooperative cannery at Lankershim is arousing much interest among fruit growers.

The Lima Bean Growers' Association has succeeded finally in securing sufficient supply of sacks for next season.

Grain producers who have seed already in the ground feel that the recent rains give practical guarantee of a good crop.

The embargo on cotton from the Imperial Valley has been lifted and shipping is now active. There are still 40,000 bales in the valley to ship out.

The Chino farm center met last Tuesday at the George Junior Republic. Professor V. C. Bryant explained the use of the Babcock tester for milk.

The organization of a milk producers association in Imperial Valley was one of the features of the agricultural assembly held at Holtville last Thursday.

A. L. Paschall, Riverside County's new farm adviser, has taken charge of his office. Mr. Paschall has been in charge of similar work for a number of years in Arizona.

Southern Pacific officials assure cantaloupe growers of the Imperial Valley that the congestion of freight will be cleared away in time for cantaloupe shipments to the East.

A meeting of all fruit growers of the Hemet Valley who will need to employ help the coming season was held at Hemet last Saturday. Plans were laid to secure and house help.

The Eighth National Orange Show at San Bernardino pulled off a great show in the face of the handicap of severe rains. One of the most striking exhibits was that of the national forest service.

The citrus experiment station at Riverside is developing its experimental work, one feature of which will be the planting of a walnut orchard, probably somewhere in Orange County, for the purpose of observing trees resistant to blight, and behavior of scions on different root stocks.

The tractor short course at the citrus experiment station demonstrates the wide spread interest in tractor farming and the demand for instruction in handling tractors. There were many more applications for instruction than it was possible to accommodate. It was necessary to restrict number in classes to 200.

## The Coast and General

Utah estimates a material increase in her sugar beet acreage.

Twenty-seven counties of Oregon will have county farm agents.

Sequiam, Washington, is to have a \$100,000 milk condensing plant.

A \$6000 state fish hatchery is to be constructed at Everett, Washington.

A carload of Merino ewes was recently received at Pilot Rock, Oregon.

E. G. Peterson, a native of Utah, is now president of Utah agricultural college.

But little corn has changed hands, and most of the reserve is still in the farmers' cribs.

The first rain in the year fell in southern Texas last week. The section averages about 28 inches.

New York has a canal costing 101 million dollars without a canal boat on it and no funds left for their building.

The state's prison of Washington will have an output of jute bags this year 25 per cent less than that of last year.

The American Fruit and Vegetable Shippers' Association recently met at Washington and adopted a new set of by-laws.

Pear growers of Rogue River, Oregon, are organizing for a publicity campaign to induce greater consumption of pears.

Long Staple cotton growers of the Salt River Valley of Arizona have decided to cooperate in the construction of cotton gins.

The food administration has forbidden slaughter of producing hens, no marketing to be permitted between February 23 and April 1.

The next International Dry Farming Congress and International Soil Products Exposition will be held at Kansas City, October 16-26.

Prune growers near Blalock, Washington, have organized and will cooperatively market through the Northwestern Fruit Exchange at Seattle.

"Washington is organizing for the production of a greater grain crop than ever grown in the state," is the report of Grain Inspector Sweeney of Tacoma.

Seattle, Washington, recently received a half carload of eggs from Japan. They were, however, silkworm eggs, and sufficient for the foundation of a great industry.

It is now estimated that 25 to 40 per cent of potatoes held in cellars and Eastern storage generally are destroyed by the extreme cold which has prevailed this season.

The supply of Pima cotton seed grown in Arizona is not sufficient to meet the present season's demand, and proportionate allotment is made to various growing sections.

A conservation dam on Sunday's River in South Africa is to cost a million and a half. The dam will be 92 feet high, 1200 feet long, and will have a capacity of 120,000 acre feet.

In the value of crop production in the states of the Union California ranks 10th with \$432,000,285; Washington, 29th, with \$140,000,000 production; Oregon, 32nd; Montana, 35th and Idaho, 36th. Illinois is the first state of the Union with \$842,000,000 production.







# 1918 Catalog

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FOR  
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5th and Jay Streets  
Sacramento, Cal.

We Pay the Freight

## "THE BOSS" TREE PROTECTOR

Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

### Prices

	Per 1000
10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

Yucca Manufacturing Co.  
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## SULPHUR

Fleur de Soufre  
Anchor Brand,  
Velvet Flowers of Sulphur and Eagle Brand.

Packed in barrels and double sacks are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAV-ING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

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## Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines  
The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of the Water Watch  
Hydrometric Co. 955 North Main St. Los Angeles, Cal.

will not cause endless trouble and family dissension.

Upon a close examination in conjunction with the decided cases I could easily find a few more things that are the matter with the form proposed, but I have taken only the written law in the Code about which there can be no possible question.

I have had from time to time inquiries such as this come to me and have turned them down just simply for the reason that I know of no document which it is more essential to employ an attorney and a good one to draw than a will. There is no instrument which so absolutely requires to be tailor-made and made by a good tailor fitting the circumstances of the particular case itself as does a will. And it has been my experience that there is nothing like an estate or a poorly drawn will so provocative of the most bitter dissension among families. I have personally profited in several instances through home drawn wills, wills taken out of books, and wills drawn by real estate agents who had a commission as notary public. Therefore, please be assured that it is not through lack of attention or a desire to take from my brother attorneys a profitable line of business that I have refrained from answering such questions, but rather the reverse.

## BEAN PRODUCTION IN CALIFORNIA IN 1917

By E. E. Kaufman, Field Agent, United States Bureau of Crop Estimates

Owing to the importance of the bean crop as a source of food supply, together with the large increase in acreage and adverse weather conditions at harvest time in some of the bean growing states, the bureau of crop estimates, United States department of agriculture, conducted a special bean inquiry during January as a check against its estimates of bean production of December, 1917.

No material change was noted in California, the inquiry practically confirming the previous estimate. The total area of beans harvested was 558,000 acres, 140,000 acres being Limas and 418,000 acres of all varieties other than Limas. On account of excellent weather conditions during the harvesting and thrashing season the average quality was high and the average "pick" (trash, immature beans, gravel, dirt, etc. removed by the cleaners) was 4.3 pounds per hundred.

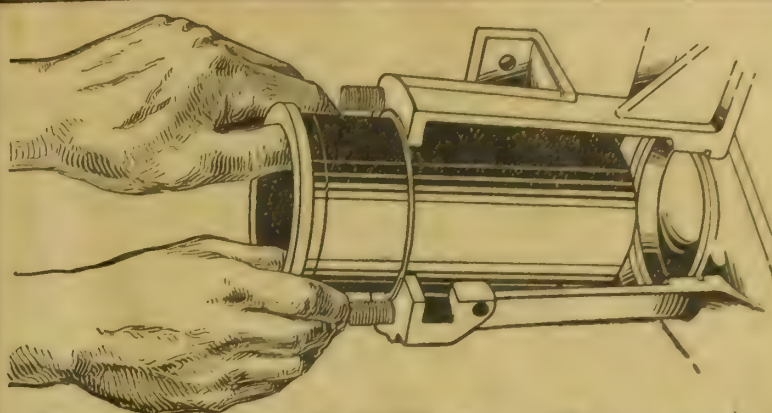
The average yield of all beans is estimated to be 870 pounds per acre and the total production by varieties in cents or 100 pound sacks as follows:

Limas .....	1,244,000
Large whites .....	610,000
Small whites .....	800,000
Red kidneys .....	20,000
Pinks .....	1,200,000
Blackeyes .....	300,000
Cranberries .....	150,000
Red Mexicans .....	135,000
Bayos .....	125,000
Teparies .....	100,000
Henderson Bush .....	116,000
Miscellaneous .....	60,000
Total .....	4,860,000

## LONG STAPLE COTTON

Arizona is rapidly making a record as a producer of long staple cotton. The planting the coming season will doubtless be by far its greatest. As to quality it has been said "All the world knows that Arizona produces the finest long staple Egyptian cotton." The last crop is now harvested. The Pima variety will undoubtedly be planted as far as the seed supply will permit inasmuch as this variety has a longer, finer and stronger staple than the Yuma variety which was the first improved strain. Egyptian cotton has been planted with considerable success in Colorado Valley and near Yuma this year also and bids fair to hold its own in that district in time to come.

The Imperial people are depending almost entirely on the Durango. Why not the Pima? Conditions are practically the same as in Arizona.



## Pull Out This Avery Inner Cylinder Wall

THE inner cylinder walls of a motor are subject to more wear than about any other part of a tractor. In Avery Tractors these inner walls are separate castings. When worn or scored from any cause you can replace them at a small cost, with little trouble and practically no delay.

Other tractor motors must be taken out of the frame and sent to a machine shop to be rebored, reground and fitted with oversize pistons, which means heavy expense, much work and long delays, or a complete new cylinder must be purchased.

When you have an Avery Tractor you can also adjust the crankshaft boxes which cannot be done with any other tractor. No need of tearing the motor down and rebabbiting the boxes when they wear a little, as they are bound to do on every tractor.

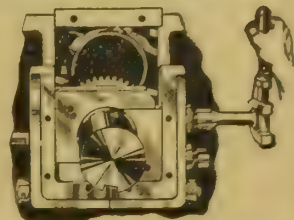
You can burn kerosene too, and more successfully than in any other tractor. The Avery Duplex Gasifier does the trick. No other tractor is equipped with it. Avery's are the tractors that burn ALL the kerosene.

### Write for Free Avery Motor Farming Book

Get all the facts about the Avery Line of Tractors. They have many other superior features. They are built in sizes to fit every size farm—six sizes from 5-10 to 40-80 H. P. Also learn about the Avery Two-Row Motor Cultivator—the newest successful Motor Farming Machine built. There's also an Avery Plow and an Avery Thresher to fit every size Tractor. Ask for new 1918 Complete Avery Motor Farming Book. Address

EVERY COMPANY, 3907 Iowa Street, Peoria, Ill.  
C. S. Anthony, Distributors  
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There's a size Avery Tractor for every size farm and every kind of work



Adjust This Avery Crankshaft Box

Take up any wear in a few minutes. Can only be done on Avery Tractors.



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Burns kerosene better. Uses less fuel and lubricating oil. Only on Avery Tractors.



# DOAK ENGINES

Simple, Reliable, Efficient

Operate on Stove Distillate,  
No. 1 Distillate or Gasoline

Made in sizes  
from 5 to 240 H. P.

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Doak Gas Engine Company

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## THORNLESS Blackberry


Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

Ekstein Nurseries

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**PURE BRED** **REGISTERED HOLSTEINS**

**YOU WILL BE GLAD**

that you took our advice and placed a good young son of

**Prince Gelsche Walker Korndyke**

(Shown above)

at the head of your herd when his daughters begin to freshen and go on official test. We believe they are as promising a lot as can be found anywhere and a number of disinterested judges share our opinion of them.

Sons of Prince Gelsche Walker Korndyke will never be priced lower than we are pricing them right now, and don't forget that we will give you time to pay if you wish.

Only a few young sons of his on hand—the demand for them keeping us sold down close—so act promptly if you want one now.

Below is shown our junior herd sire


**Sir Aaggie De Kol Acme**

son of the world's yearly official record butter cow.

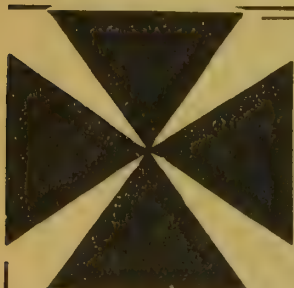
**JANE GARDEN FARM**

SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C.W. YOUNG SUP'T.



**Guaranteed**



## Santa Anita Rancho

Anoakia Breeding Farm

### Registered Holsteins

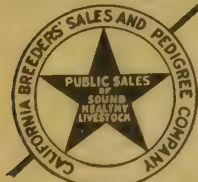
Our senior herd sire is **MERCI LAD KORNDYKE BURKE**, son of De Kol Hengerveld Burke and Winnie Korndyke Cornucopia De Kol, 31,034.14 pounds milk and 1201.06 pounds butter in one year, the first cow in California to make over 1200 pounds butter in one year.

He is acknowledged one of the best individual sires in the west and is transmitting his type to his offspring in a wonderful degree. A limited number of his young sons out of good record dams are offered for sale at moderate prices. Inquiries or orders by mail will receive prompt attention.

**SANTA ANITA RANCHO, Santa Anita, Cal.**

W. H. Taylor, Supt.

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### "The Best Managed Sale I Ever Attended"

is what a prominent breeder from out of the state remarked after the Guaranty Sale at Sacramento.

We give to every sale, big or small, the same efficient service that won the approval of the breeder above quoted, a service backed by an equipment and organization that has already brought about a new order of things in public sales of registered livestock in California.

If you want to sell your whole herd or consign high class animals to a consignment sale, let us go over the matter with you.

**California Breeders Sales and Pedigree Co.,** J. M. HENDERSON, Jr., Pres., C. L. HUGHES, Sales Mgr.  
211-212 Ochsner Bldg., Sacramento, Cal.

**SHORTHORNS**

**BERKSHIRES**

## Hopland Stock Farm

Hopland Cal.

Registered Bulls—yearlings and two year olds. Bred on same lines as our Grand Champion cow at Sacramento, 1917.

Boars and Glts by Iowana Rival Majestic, a son of Rival's Champion.

Prices Reasonable on Application

San Francisco Office

226 Southern Pacific Bldg

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

## Breed Leaders

Every breed of livestock has its outstanding character the same as the human kind. A great dairy cow has proved her ability to produce anywhere up to 15 tons of milk annually; the trotting horse has secured his record around two minutes; the beefmaker has shown his ability to make the least amount of feed into the greatest amount of food; swine, sheep and others of the livestock family have shown themselves great characters. In addition—and here is where their worth is proven—these animals can transmit their productive power to their offspring.

Beginning with the issue of August 4 the Cultivator gave an account of Pieterje Bloom of the university farm dairy herd. Some things she has done and more that her daughters have done were chronicled. She was a most worthy leader in this series of articles. Others of her kind follow. More of the "handsome is as handsome does" type of animals will be given in the columns of the Cultivator during the next few months.

Written for California Cultivator By C. A. Briggs

### AMES' RIVAL 70TH



HIS gentleman with the pleasant smile is His Royal Highness, "Ames' Rival 70th 209-850" now nearly four years old, an almost perfect type of Berkshire boar and a grand specimen of hog of any breed, one that any breeder would be proud to own. He

have placed on him fearing the effect on his extremely valuable breeding powers. His winning second in his working clothes in this hotly contested class and a decision of first at the Chico spring fair, gives a line on his show ring quality. His breeding is of the best, Premier, Masterpiece, and Baron Duke ancestors giving him some of the best blood of the breed in



Ames Rival 70th

belongs in the Cultivator department of "Breed Leaders." He was farrowed on March 6, 1914, bred by Rookwood Farm Ames, Iowa, sire Baron Matchless 50th, dam Rookwood Lady 43rd. That the judges consider him good is shown by the fact that he won second at the Sacramento State Fair in 1917 in close and hot competition. His friends, and they are many, all think he would have walked off with the "blue" if he had carried a little more fat, which his owners, the James Mills Orchard Corporation refused to

both male and female lines of his ancestors. Weighing 950 pounds, without fat, doing his duty as senior herd sire, with a back that never breaks no matter what the position of his head, which is of true Berkshire type, with a frame and bone capable of carrying 1250 pounds or more, right on his toes, active, able to walk a mile without puffing, splendid hams, broad back, fine shoulders, heart girth and lung power almost ideal, and, best of all, dozens of big litters of strong, active pigs that look just like him. Surely he is one of the leaders of his breed.

## Bridgford Holsteins Continue Their Good Work

The splendid registered Holstein cows and heifers that make up the foundation of the Bridgford Company herd at Knightsen are fully justifying the richness of their breeding under official test. A number of unusually good official records have been reported in the Cultivator recently, and this week brings news of still others.

The junior two year old, Bessie Vee-man Korndyke, granddaughter of the \$50,000 bull, King Segis Pontiac Alcarra, has 24.01 pounds butter from 493.2 pounds milk to her credit in seven days and is still on test with prospects for a great 30 day record.

The junior two year old, Rose De Kol Cande, daughter of Governor Walker 2nd, has to her credit 23.26 pounds butter from 413.3 pounds milk in seven days and is still on test.

Tidy Abbekerk Korndyke, another junior two year old whose credit of 18 pounds butter in seven days was noted in a previous issue, finally increased to 20.46 pounds butter from 376.3 pounds milk in seven days, and will have around 85 pounds butter in 30 days.

Sarah Topsy De Kol, a five year old daughter of King Pontiac Topsy, has

32.40 pounds butter from 701.1 pounds milk to her credit and is still on test.

Mercedes Inka Hengerveld, a seven year old cow sired by a son of Hengerveld De Kol and out of a daughter of King Segis, completed a record of 34.09 pounds butter from 699.2 pounds milk in seven days.

These cows and heifers are a remarkable group of individuals, and show a most pleasing high average milk flow in connection with their splendid butter records.

### AYRSHIRE FRENCH PRIZE CUP WINNERS 1917

The award of the French prize cups for 1917 offered by Miss C. A. French of Boston for the Ayrshire cows making the highest record in each of the seven Ayrshire Advanced Registry Classes has just been announced. Among the winning animals we note some belonging to Pacific Coast breeders:

Senior four year old, Willowmoor Happy Girl C, owned by J. W. Clise, Redmond, Washington, record 16478 pounds milk, 650.40 pounds fat; junior four year old, Willowmoor Vesta 4th, owned by E. B. McFarland, San Mateo, record 17,753 pounds milk, 753.18 pounds fat; junior three year old, Willowmoor Lily 5th, owned by J. W. Clise, record 14,577 pounds milk, 662.53 pounds fat.



## McAlister & Son Open Season With Good Records

The season's official testing is well under way in the herd of registered Holsteins owned by McAlister & Son, Chino, with some very nice records already completed.

They have the distinction of making the first 30 pound record on any cow sold in the Guaranty Sale last December and have made two records above 30 pounds on cows bought in that sale. First they increased the record of Miss Pontiac Nudine of Springvale, bought from Bridgford

Xatasso Mechthilde, 23.73 pounds butter from 532.4 pounds milk in seven days as a senior three year old, and she is a daughter of the 28 pound cow Cristeria Overton Mechthilde 3d; V. S. O. Burke, mature age, 25.33 pounds butter from 440.1 pounds milk in seven days; Orndyke Duchess Korn-dyke, mature age, 27.83 pounds butter from 710.5 pounds milk in seven days and 112.86 pounds butter from 3002.1 pounds milk in 30 days; Allenvail Cornucopia 2nd, junior three year old,



Ontario Blond Pietje

With record of 30.07 pounds butter from 590.2 pounds milk in seven days at four years of age. Bought by McAlister and Son at the 1917 Guaranty Sale.

Company, to an even 31 pounds butter in seven days from 575.2 pounds milk. Then the great heifer Ontario Blond Pietje, bought from Fred W. Kiesel, made 30.07 pounds butter in seven days from 590.2 pounds milk, milking 98 pounds her best day, as a junior four year old.

Other records completed include the senior three year old Lady Briems Aaggie 2nd, 31.48 pounds butter from 566.5 pounds milk in seven days, 119.34 pounds butter from 2478.4 pounds milk in 30 days; Neva Segis De Kol, 24.58 pounds butter in seven days as a four year old; Allenvail Segis Walker, 22.67 pounds butter in seven days as a four year old; Cristeria

24.03 pounds butter from 570.3 pounds milk in seven days; Minnehaha Gerben Korndyke, senior 325.84 pounds butter from 433.5 pounds milk in seven days; Canary Fanny Pauline 2nd, five years, 25.28 pounds butter from 546.8 pounds milk in seven days; Lottie Korndyke De Kol Segis, mature age, 27.07 pounds butter from 552 pounds milk in seven days; and Inka Wayne Pietertje Beets, six years, 23.21 pounds butter from 592.7 pounds milk in seven days.

There are some very promising cows and heifers nearing freshening time in the McAlister herd, among them a great two year old that looks fit to do something really sensational when she goes on test.

## Kings County Poland-China Sale

Written for California Cultivator By C. A. Briggs

**P**RECEDED by one of Kings County's celebrated banquets where the breeders and their friends were the guests of that royal good-fellow, Will Bernstein, the sale of 65 head of the best of the Kings County's herds began at 11 a. m. February 20 in the Sales Pavilion of the County Fair Grounds.

Heavy rain the preceding night and morning of the sale prevented many buyers from being present, but a large crowd was on hand to greet the auctioneers, Col. Ben A. Rhoades and his son Harold from Los Angeles. Will Bernstein managed the sale and his box work was of a high character. Farmer prices ruled and much of the stock went into hands where it will do great good. Many farmers from Kings and surrounding counties were brisk contestants for the fine sows offered. Several boys entered the ring and captured fine animals for their pig club work.

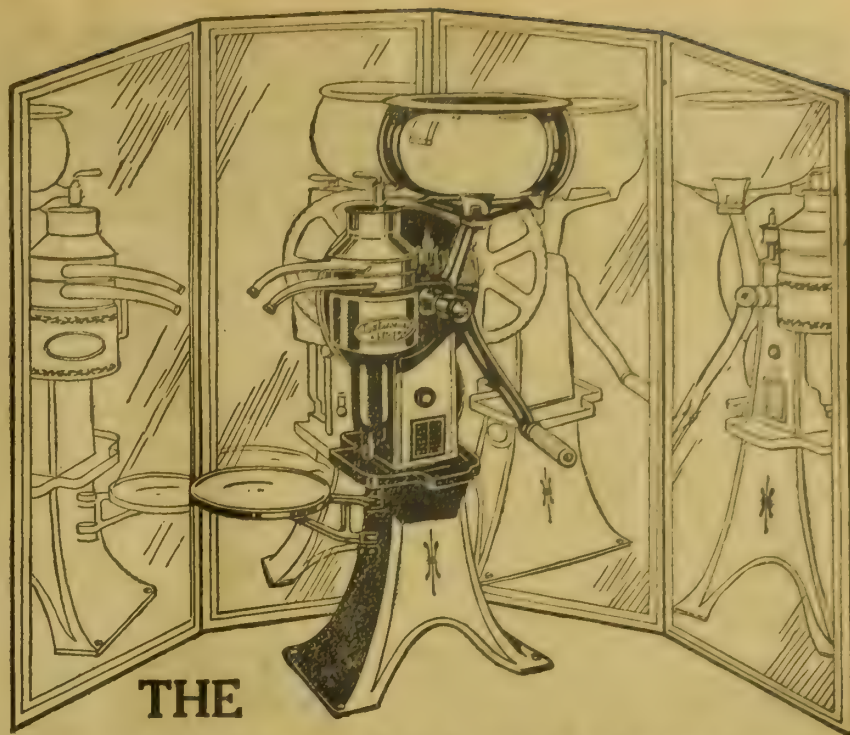
The average price was \$85, which shows an increase over the previous sales. The "topper" was "Call Best," a splendid sow consigned by John M. Bernstein that went for \$300.

A feature of the day was the patriotic response to the offer of M. Bassett who gave a fine sow for the bene-

fit of the Kings County Red Cross. Nine hundred and fifty dollars was obtained for this sow and the Red Cross purse of the county receives this much needed aid. The sale was a success in many ways and in the much needed fight for increased pork production Kings County will do its part.

### MONEY IN HOGS

Perhaps not everyone can make money in hogs. A. J. Lovejoy is enjoying California climate, as he has for several winters which he has spent in Pasadena. One understands that to spend winters in Pasadena calls for the sale of several hogs, but Lovejoy has bred Berkshires since 1876 and has been a great factor in the upbuilding of that breed, hence the prosperity to which he is entitled. He still has to talk hogs, even while resting, and recently called at the Cultivator office to remark that California has some exceptionally fine Berkshire blood. That this was not empty compliment is shown by the fact that only a few weeks ago the Cultivator chronicled the purchase by Mr. Lovejoy of one of Laurel's Champions' finest offspring, Violet's Champion, which Mr. Lovejoy has secured from the Fontana Ranch and sent back to his Illinois farm. Mr. Lovejoy now says that this was surely the finest specimen of Berkshire hog he has even purchased. Mr. Lovejoy attended the Berkshire Congress and sale at Davis last week.



## THE NEW DE LAVAL CREAM SEPARATOR

Every Reflection Shows Perfection

**V**IEWED from every angle, the De Laval is distinctly in a class by itself. It has a business-like appearance. It looks as if it were well made, and it is. It looks sturdy, and it is. There is no make-believe about it anywhere, from the wide-spreading substantial base to the solid, seamless, symmetrical supply can.

It's no wonder that big dairymen and creamerymen who have for years made a careful study of dairy methods and machinery refuse to consider any other separator but the De Laval. They know that from every angle—clean skimming, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

They know that it has a record of 40 years of service behind it. They know that it can be depended upon. They know that they can't afford to take chances with any other cream separator—

And neither can you.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

## DE LAVAL DAIRY SUPPLY COMPANY

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.  
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalogue.

61 BEALE STREET, SAN FRANCISCO

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Almost Every Breeder

has one or more of his very best cows and heifers that he would like to breed to some bull of extraordinary merit, and in this connection

### King Korndyke Pontiac 20th

the outstanding young sire for which we paid \$6500 in the Guaranty Sale, has stood out as THE bull in the minds of a number of prominent breeders.

We take this means of acquainting other breeders with the fact that we will book to the service of KING KORNDYKE PONTIAC 20TH a limited number of cows and heifers subject to our approval. Write for information and service fee.

We are sold down close on bulls, but have a very few choice young sons of PRINCE RIVERSIDE WALKER, our senior herd sire, out of excellent dams and priced well within their value and the means of any good dairyman.

## Tulare Holstein Farm

W. J. HIGDON, Owner

Tulare, California

When writing advertisers, mention The Cultivator.



## ABORTION IN CATTLE

PREVENTED AND CURED PERMANENTLY  
YOUR COWS MADE PROMPT. REGULAR BREEDERS BY  
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**TREATMENT:** If STERILOID is used at the first sign of abortion the cow will go her full time and not come in season, or fail to get with calf, use STERILOID. Cows get with calf after only one treatment. Write today for FREE BOOK. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with STERILOID. Also contains letters from breeders who have used STERILOID successfully.

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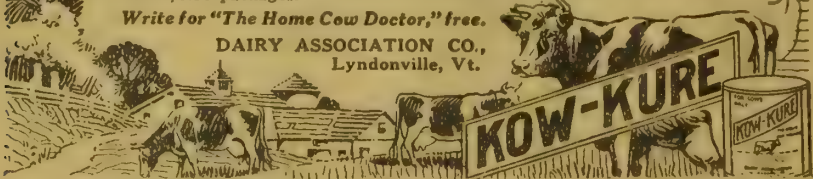
## The Cow's Health - First of All

To think of the milk yield first and the cow's health afterward is putting the cart before the horse. Many "poor milkers" only need to have their systems working properly to become good producers.

KOW-KURE, the great cow medicine, makes cows healthy and keeps them healthy. Working on the digestive and genital organs, it is a prompt, sure remedy for Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite and Bunches. Try KOW-KURE; druggists and feed dealers sell it—65c and \$1.10 packages.

Write for "The Home Cow Doctor," free.

DAIRY ASSOCIATION CO.,  
Lyndonville, Vt.



## Stop Losing Calves

You can  
**Wipe Abortion Out**  
of your herd and  
**Keep it Out**

Write

Dr. David Roberts Veterinary Co.  
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Questions and Answers

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Answers every question. Tells how to treat your own cattle at small expense. Send for booklet now. A postal will do. State number of cattle you own.

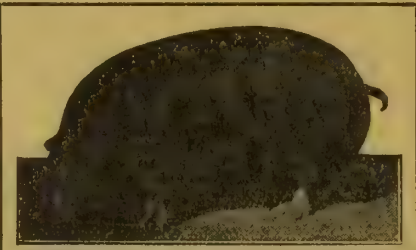


## Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar, Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

**M. Bassett**

Hanford, Kings County, Cal.



## Prize Winning HAMPSHIRE

The farmer who wants a hog that puts on 200 lbs. of firm meat at six and a half months of age buys the Hampshire.

F. A. Langdon  
Manager



Llano Vista Ranch, Perris, Cal.

Boars, gilts, bred and open, for sale from the P. P. I. E. Champion Hampshire stock, just as nearly perfect as they make them.

F. V. Gordon  
Owner

## CATTLE WANTED

If you have young breeding stock or feeding cattle, write or wire

**Clay Robinson & Co.**

EL PASO TEXAS

In care of Sheldon Hotel

Mr. Robinson is staying at the Bryson Apartments, Los Angeles.



SAVE YOUR HOGS

### DO YOUR BIT!

Raise more hogs and put them to market earlier by feeding

**Economy Powder**

Send for Free Sample and Stock Book

**Economy Hog & Cattle Powder Co.**

Hearst Bldg.

San Francisco, Cal.

## Stock Raisers Planning for Feed

Live stock men of San Luis Obispo, San Benito, Monterey, Tulare and Fresno Counties, and of many other sections are turning in every direction for new pastures or for some form of feed which will keep stock alive and if possible fit for market. The live stock men have been met by an official party comprising L. A. Nares, president of the California Cattle-men's Association and a member of the California branch of the federal food commission; Prof. Gordon H. True of the live stock department of the University of California and of the food commission; C. E. Rachford, head of the forest service grazing department, and forest supervisors of various districts. Live stock men from Tulare and nearby counties met at Porterville and Visalia. Also in connection with the same effort to secure feed a meeting was called at Fresno for last Thursday. A line has been secured on hay supplies, and if transportation can be arranged the stock will be brought to the hay or the hay taken to the stock. Live stock men propose to do their bit by making into food that which would surely be wasted if action were not taken.

At the Fresno conference Will Blasingame was named as chairman and H. E. Patterson secretary, C. E. Rachford, assistant district forest supervisor, of San Francisco, presiding during the organization of the assembly.

The following resolutions were passed:

Whereas, We are experiencing the most serious lack of rain since 1877; and

Whereas, The stock of all kinds is in almost a starving condition, and the loss already serious, and in that hay is very scarce and the price so high on the small amount still on hand that stockmen cannot pay the price

without bankruptcy; now, therefore be it

Resolved, That we respectfully request the government authorities to intervepe to save the stock of the San Joaquin valley from almost total loss; and be it further

Resolved, That we request the government to permit the stockmen of the San Joaquin Valley to use the national parks and forest reservations, under proper regulations, for the summer of 1918.

Commissioner Nares said:

"Europe has killed 40,000,000 head of stock above her normal supply.

"America has promised her allies that she will supply 70,000,000 pounds of beef per month, whereas the normal supply before the war was 1,000,000 pounds. We must furnish 100,000,000 head of stock during the year, as opposed to 10,000,000 during the normal years.

"The food administration now knows the location of all feed supplies and has endeavored to stabilize the price. There is practically no feed now in the Imperial Valley, as trainloads of stock have been shipped in there and the supply now is very short."

He also stated that there is hay available in the Sacramento Valley at \$22 and \$28 per ton and lists of holders of this feed will be furnished all cattlemen needing hay. The administration also wants information of any banks refusing loans to cattlemen for the purpose of purchasing feed or for the moving of stock. Some complaints have already been made along this line.

In order to ascertain conditions of field and foothill pasture sections the chairman appointed the following committee to act with District Forest Supervisor Benedict: L. A. Blasingame, H. E. Patterson, F. Elgorrago and Fred McKenzie.

The findings of this committee will be placed in the hands of the food administration.

## Producing Certified Milk

**T**HE winner of the first prize over 20 competitors, producers of certified milk, at the National Dairy Show was a West Virginia dairyman who produced the milk at a handsome profit, which is contrary to the results secured by some "certified" and "guaranteed" producers.

Regarding the methods of production Hoard's Dairyman says:

The methods used by the Hill Top Farm are such that a sample tested at the National Dairy Show showed only 1,100 bacteria to the cubic centimeter.

### Cleanliness in Production

Cleanliness in production among the 80 or more Ayrshire cows on Hill Top Farm begins in the selection of the cows, as none but home bred animals are ever sent into the dairy barn. All the heifers are raised on Hill Top and thus the chance of introducing inferior and diseased live stock is reduced to a minimum.

Cleanliness in the stables is kept to the maximum by cleaning the gutters, scrubbing the floors, and washing the walls each morning. This is done by the milkers after the morning feeding and milking is finished. In the wintertime the cows are turned into a protected barn lot while the scrubbing is done. Plenty of water under pressure with stiff, wide brooms makes the cleaning process easy and efficient. \* \* \*

The manure is carried by a litter carrier to a concrete pit outside the

dairy barn but removed each day to the fields during the summer and three times a week during the winter. Screens over all the stable windows and tight screen doors prevent any scourge of flies in the barn during the summer.

Although housed in a frame barn, sanitary conditions are further enhanced by the walls and ceiling being constructed of a metal lath covered with a smooth, rock-face plaster; this can be scrubbed and washed quickly and easily with water and also aids in keeping a uniform temperature in the barn.

### Milking Operations

Milking on Hill Top Farm is done with machines which reduce the labor to such an extent that four men are able to feed, milk, and keep the stable sanitary for 80 cows. Milking begins promptly at 4:30 each morning and evening and is finished by 6 o'clock. During the milking period no feeding is done and all the dairymen change their barn clothes for one-piece white uniforms. This eliminates the danger of dirt getting into milk from soiled clothes. Before the cows are milked their udders are washed with an odorless disinfectant and wiped dry. The stripping is done in partially covered buckets. Care is taken to have the milking machine buckets and teat cups in good operation so that the cups may never fall while the cow is being milked.

Because the cow's udder and flanks are kept closely clipped but little dirt



can accumulate on the hair and what does stick is taken off when the udder is cleaned prior to milking or when the cows receive their daily cleaning.

#### Handling the Milk

Just as fast as the teat cups are removed and the stripping is finished the milk is started through the cooler. This is operated in connection with a brine tank and a pump so that the temperature of the fresh milk is reduced to 40 degrees F., as soon as it passes through the cooler. From the cooler it drains into the bottling tank; this tank is always covered and the bottles are filled as fast as the milk drips away from the cooler.

One man operates the bottler while another keeps the capping machine going. Thus the milk is sealed in air-tight bottles at a temperature of 40 degrees within a few minutes after coming from the milking machine.

"This operation we believe to be one of the most important in the production of certified milk," says Russell L. George, manager of the farm. "Of course we take every precaution in the barns to keep any dirt from getting in but quick cooling prevents the growth and development of bacteria that get in despite care." The bottles are placed in crates and set in a refrigerator until hauled to market.

The caps placed on the bottles are of the overhead type clamped to the rim of the bottle by a steel wire. The electric capper automatically cuts the caps out of a paraffined roll from the under side. This prevents any particles of dust from touching the under part of the cap. The day the milk is to be sold is stamped on the cap.

Usually two men are needed to operate the creamery but the assistant to the dairyman helps with the milking and after milking assists in washing the bottles. Two men are needed during the bottling and capping operations. The work of testing and handling the 200 gallons per day, the average production, is done largely by the dairyman.

Following the evening's and morning's milking all the utensils used in handling the milk, including the milking machine buckets, are thoroughly washed and then sterilized under steam at 190 degrees for one hour. The sterilizer holds all the utensils and the bottles for one milking and is situated between the washing and bottling room, a door entering it from both rooms. When the washing is completed all the utensils are placed on a portable tray and shoved into the sterilizer; they remain there until ready for the next milking. The rubber tubes of the mechanical milkers are not placed in the sterilizer as the heat will destroy these connections; they are kept in a solution of disinfectant.

A portion of the milk produced is separated and the cream sold as a certified product; the skim milk is then used for feeding calves. The certified milk and cream are sold in pint and quart containers. All deliveries are made to a retailer one mile from Hill Top in a 1½-ton motor truck. The bottles are handled in wooden crates.

Three trips a day including one after the evening milking are required to deliver the products but the return trips are utilized in hauling ice, feed, and other materials necessary to the operation of the dairy. One driver for the truck is required for the marketing end but a part of his labor is contributed to the operating end of the dairy by the return trips.

#### Division of Labor

The labor requirements for the

farm are divided as follows: four men in the stables, one of these assisting the dairyman after milking hours; one dairyman, one truck driver, and two horsemen who do the teaming about the dairy other than at harvesting time. During the growing season extra help must be secured to work the 200 acres of growing crops of alfalfa and corn. Practically all of the other 500 acres on Hill Top are used for pasture.

Certified milk from Hill Top is sold wholesale for 18 cents a quart and 9 cents a pint; certified cream brings 80 cents a quart and 40 cents a pint. This is not as high as the average price now secured for certified milk the country over, as 22 to 24 cents per quart is usually paid. Certified milk, like practically all other grades of milk, is hardly bringing what is necessary to maintain production and

give a fair profit to the producer, dealer, retailer, etc. But even considering the unusually high operating expenses and abnormal times, dairy

operations at Hill Top are making a profit, especially when the production of record cows and the accumulation of breeding stock is considered.

## Hog Conference at Willows

Written for California Cultivator By H. Stinger



At the hog conference held in Willows Saturday, February 9, 125 farmers from all parts of Glenn County listened to the appeal of the national food administration through its representative, C. B. Cunningham, president of the State Swine Growers' Association. Professor Vestal of the University State Farm, Professor Madsen of the college of agriculture and Mr. Bohman of the Western Meat Company, and representative of the packing houses.

The meeting was first addressed by Professor Cunningham who pointed out the necessity of more hog production in California and showed to the people that in order to make profit on swine in the present situation they must raise pure bred pigs.

"Comparing our swine production with that of the Eastern states, our hogs show an inferior quality of three per cent as compared with those of our Eastern competitors. This difference is due largely to the lack of a

**\$40 alfalfa hay predicted for 1918-19!**

**NOTE**  
Market price of alfalfa today is \$32 per ton (baled) in carload lots.

**Plant**

**GERMAIN'S SELECTED ALFALFA SEED**

**Now!**

Oat hay is now \$38 a ton and barley hay \$36—and there's practically none in sight throughout California for the future. The war and climatic conditions have boosted prices to the sky—and they're there to stay for a long time. The wide-awake rancher sees the handwriting on the wall—he is taking time by the forelock—he is *planting alfalfa*. And he will put away thousands of dollars when alfalfa hay hits the \$40 mark. Plant Germain's Selected Alfalfa Seed NOW and insure your profits. If you plant Germain's HAIRY PERUVIAN ALFALFA seed you'll harvest 2½ more tons to the acre than with the common variety of seed. Place your order with us immediately and avoid disappointment. Don't wait—plant NOW!

Free  
Our Big  
1918 Seed  
Catalog

**Germain**  
Established 1871  
**Seed & Plant Co.**  
326 • 328 • 330  
SOUTH MAIN STREET  
LOS ANGELES • CAL.



# Good Holsteins

## At Public Auction

We will sell at public auction to the highest bidder absolutely without reserve or limit the entire herd of breeding age owned by R. F. Guerin, Visalia, Cal., on his farm, on Thursday, April 4, 1918.

The offering will consist of 80 head, over 70 being females practically all of which are bred to Sir Veeman Korndyke Pontiac, 30 pound son of Sir Veeman Hengerveld, who will himself be sold.

This will be a rare opportunity to secure good foundation animals, great young cows and heifers in calf to one of the best bred bulls in the west today.

Some of the attractions of the sale will be:

**FOUR DAUGHTERS OF WINIFRED HOTALING**, dam of Winifred Hotaling 2nd, 33.92 pounds butter in seven days, and Winifred Hotaling 3d, 32.19 pounds butter in seven days.

**TWO DAUGHTERS OF A 27.42 POUND FOUR YEAR OLD**, that milked 680.1 pounds in seven days.

**A DAUGHTER OF SPRING FARM KING PONTIAC 6TH** whose two year old daughters are making splendid records.

**A GRANDDAUGHTER OF KORNDYKE QUEEN DE KOL'S PRINCE** out of a 21 pound four year old granddaughter of King Segis.

**A BEAUTIFUL 20 POUND COW** and her three daughters, one of them a 22.27 pound three year old.

**TWENTY-NINE DAUGHTERS OF ARCADY PONTIAC WAYNE HENGERSVELD**, whose 27 A. R. O. daughters with records up to over 28 pounds butter in seven days comprise the largest list of daughters of one sire yet developed in California.

**THIRTEEN GRANDDAUGHTERS OF JUDGE HENGERSVELD DE KOL**, whose 41 A. R. O. daughters have records up to 34.19 pounds butter in seven days and 1227.46 pounds butter in one year.

**TWENTY-ONE COWS AND HEIFERS** with official records up to over 24 pounds butter in seven days.

**SIXTY-FIVE COWS AND HEIFERS** in calf to Sir Veeman Korndyke Pontiac, the only son of the great Sir Veeman Hengerveld on the Pacific Coast, and he is out of a 30 pound dam of splendid breeding.

## BULLS

**SIR VEEMAN KORNDYKE PONTIAC WILL BE SOLD.** He is by Sir Veeman Hengerveld, universally acknowledged one of the very greatest sires of the Holstein breed. His dam has an official record of 30.13 pounds butter in seven days, and she is out of a 29.88 pound four year old daughter of Sir Veeman Hengerveld and is sired by Sir Korndyke Pontiac Artis, whose dam, Pontiac Artis, made 31.71 pounds butter in seven days, 1076.91 pounds butter in one year and is a daughter of the great Hengerveld De Kol.

**REMEMBER** that Mr. Guerin is selling his entire herd except about 30 heifer calves from Sir Veeman Korndyke Pontiac which he will raise and develop as his female breeding herd.

**REMEMBER** that 65 cows and heifers in this sale are bred to Sir Veeman Korndyke Pontiac, and he is just now three years old. **THAT MEANS** that in all probability Sir Veeman Korndyke Pontiac will have at least 60 living daughters before he is four years old. Figure it out yourself and then determine to buy him if you want a herd bull that is bound to have one of the best lists of A. R. O. daughters in the west.

**A SON OF SIR VEEMAN KORNDYKE PONTIAC** out of a 28 pound four year old.

**A SON OF SIR VEEMAN KORNDYKE PONTIAC** out of a 27.42 pound cow that milked 680.1 pounds milk in seven days.

**SEVERAL SPLENDID YOUNG SONS** of Sir Veeman Korndyke Pontiac and Judge Hengerveld De Kol 6th out of good dams.

Every animal in this sale is guaranteed to be a breeder, has been tuberculin tested, and is sold subject to tuberculin retest by the buyer.

Catalog in preparation. Write for one.

Sale under management of

## California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., Pres.

C. L. Hughes, Sales Manager

211-212 Ochsner Bldg.

Sacramento, Cal.

Auctioneer: Col. Ben A. Rhoades, Los Angeles

# SPECIAL!

We offer three splendid young bulls, ready for service, at prices any dairyman can afford to pay for even bulls of less quality.

**No. 1—KING MEAD OF RIVERSIDE 4TH.** Born October 19, 1916

Sire—King Mead of Riverside.

Dam—Nydia Creamcup Walker.

He is that wonderful combination, a son of King Mead of Riverside out of a daughter of Prince Gelsche Walker. The dam made 432.4 pounds of milk and 18.18 pounds butter in seven days as a senior two year old, and is out of Nydia Creamcup, daughter of Ignaro De Kol, who made 21,504.3 pounds milk and 926.35 pounds butter in one year. This bull is a nice straight individual, more black than white. Price \$350.00.

**No. 2—KING KORNDYKE PONTIAC 22ND.** Born March 16, 1917.

Sire—King Korndyke Pontiac.

Dam—Woodcraft Gem Cornucopia.

Here is a choice young grandson of King of the Pontiacs, and by the same sire as the highest priced calf ever sold on the Pacific Coast. The dam has official records of 24.05 pounds butter from 635.50 pounds milk in seven days, is a persistent producer and a most promising candidate for better than a 30 pound record. Her sire is a grandson of Hengerveld De Kol out of a dam that made 33.76 pounds butter in seven days. This is a deep bodied bull, a good individual, about two-thirds white. Price \$300.00.

**No. 3—PRINCE GELSCHER WALKER PONDYKE.** Born December 29, 1916.

Sire—Prince Gelsche Walker.

Dam—Miss Blaney Pondyke.

Here is a son of Prince Gelsche Walker that is capable of improving almost any herd. His dam is by a son of King of the Pontiacs and made official records of 439.2 pounds milk and 21.52 pounds butter in seven days as a four year old. She is out of Miss Blaney, 1008.27 pounds butter from 20,740.30 pounds milk in one year, who is dam of Miss Dutch, 30.05 pounds butter in seven days, 1025 pounds butter in one year. This is a big, deep bodied fellow, now ready for light service. Price \$250.00.

Don't delay if you want one of these bulls, for the first check will claim the bull.

## A. W. Morris & Sons Corporation

Woodland, California

good breed of swine and also the mismanagement in the feeding of the hogs. Too much stress cannot be given to this one particular phase, especially if the farmers are going to get a profit out of the raising of hogs. At the present high cost of grain the farmer who does not balance his grain feeding with other ingredients such as alfalfa, tankage, coconut meal or some other supplement, will find that his hog industry is not showing a profit."

"Interbreeding of the swine will not bring such good results as the raising of hogs of one breed. But whether we raise pure bred hogs or whether we raise a cull hog, it is our duty as American patriots to raise as many hogs as our facilities will allow."

One of the present questions confronting the farmer of today is, "Can we raise hogs at a profit with the present high price of grain as compared with the present price of pork?" Professor Vestal, who has made a close study of the swine industry, says that without a doubt hogs are profitable today as they have been in the past for the farmer who raises his own hogs and his own feed. If however, the farmer must buy his hogs and his feed, then perhaps the swine will not prove so profitable an investment. In another instance, if the farmer buys his hogs and raises his feed, he can make a profit, provided he is a man of management.

In speaking of raising feeds Professor Madsen, whose opinion has been based on several years experience with the University Farm at Davis, has showed to the people that they are getting just about one-half the use of their soils that they should get. "After the first crop is taken from the ground, namely grain, another crop can be made to mature if the ground is immediately plowed under and a crop of sorghum seed planted. Under districts where irrigation is possible an excellent feed crop for hogs is the cow pea, which is very easily grown and which contains a large percentage of protein."

In comparing our Western market with the Eastern markets we are somewhat at a disadvantage owing to the lack of transportation and the difference in the quality of hogs.

Two kinds of hogs are sold to the packing houses. One is called a shipping hog, or a hog weighing anywhere up to 150 pounds. This hog is too small for a packing hog so is sold as a shipping hog, necessarily bringing a lower price than the packing hog. By the term packing hog we mean a corn fed hog weighing from 180 to 250 pounds, and it is from these hogs that we are able to get our hams and bacon. But of the greatest losses to the nation possibly none is so great as the piggy sow that has been put on the market for pork. The United States government requires all piggy sows to be held until after the litter has been born, and as very few of the packing houses have the means of raising these little pigs they are killed as soon as they are born. The people do not realize the enormous loss that is incurred in this way, but if in the future this one item can be overcome the government's pork supply will be greatly increased.

The James Mills Orchard Company in Glenn County should be congratulated on the showing it will make this year. Twenty-eight carloads of prime packing hogs will soon be shipped from this ranch, leaving about 2000 pigs still to be considered. This ranch is figuring on a profit of approximately \$50,000 for these pigs,

showing that hogs and feed, both raised on the farm, is an exceedingly profitable enterprise.

This conference has been the means of starting a hog movement in Glenn County which will increase the hog production at least 2000 more hogs for the coming year. If every county in California increased its hog production at the same rate this state would be leading the swine production instead of following along in the rear.

## Our Country Needs Livestock and Poultry



## Kreso Dip No. 1

for

## FARM SANITATION

will keep Livestock and Poultry healthy.

## KRESO DIP No. 1

EASY TO USE.  
EFFICIENT. ECONOMICAL.

Kills Sheep Ticks, Lice and Mites;  
Helps Heal Cuts, Scratches,  
and Common Skin Diseases.

PREVENTS HOG CHOLERA.

WRITE FOR FREE BOOKLETS ON  
POULTRY AND LIVESTOCK.

Animal Industry Department of

PARKE, DAVIS & CO.

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**YOU CAN'T CUT OUT**  
A BOG, SPAVIN, PUFF OR THOROUGH-  
PIN, BUT

**ABSORBINE**  
TRADE MARK REG. U.S. PAT. OFF.

will clean them off permanently,  
and you work the horse same  
time. Does not blister or remove  
the hair. \$2.50 per bottle, delivered.  
Will tell you more if you  
write. Book 4 R Free.

W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

## Duroc-Jersey Hogs

AT

## IRELAND

Ranch at Owensmouth

City Office: 1219 Brockman Bldg., Los Angeles

Spring Boars by Orion Cherry King V  
(Reformer) For Sale

## Brighton Farm Herds

Registered Shorthorns

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Berkshires—Both Sexes

H. L. & E. H. Murphy

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## AYRSHIRES

REGISTERED

Herd Sire, Dairy King of Arizona  
CHOICE BREEDING STOCK FOR SALE

A. MACMINN

Phoenix

Ariz.



# Western Berkshire Congress and Sale

Written for California Cultivator By W. S. Guilford



**BIG** attendance of interested farmers and breeders, a program full of interesting things, and a sale of 43 animals averaging \$165—that is the story of the 1918 congress held February 21 and 22 at the University Farm, Davis.

Officers were elected as follows: W. M. Carruthers, Mayfield, president; A. B. Humphrey, Escalon, vice president; Homer Hewins, Calistoga, secretary. Executive Committee consists of Frank Brush, Santa Rosa; Paul Foster, Hopland; J. S. Badt, Wells, Nevada; James Mills, Hamilton City; Harry Murphy, Perkins, and F. R. Steel, Grant's Pass, Oregon.

A judging contest for farmers and farmer's wives was an important feature. Mrs. A. E. Slocum of Willows won first; H. S. Howard, Orland, second; E. P. Smith, Paramount, third; R. C. Gruhlke, Dixon, fourth; H. A. Houston, Chico, fifth; A. E. Slocum, Willows, sixth. The prizes were registered pigs donated by Homer Hewins, Jr., Calistoga; A. B. Humphrey, Escalon; F. R. Steel, Grant's Pass, Oregon, and Butte City Ranch, Butte City.

An interesting feature was the banquet, ably presided over by James Mills. L. E. Frost, editor of the Berkshire World made a strong appeal for more pork—the nation must have it. He is in touch with the food situation over a wide territory and has been in constant communication with the food administration. Other speakers were E. H. Grubb, A. J. Lovejoy, W. M. Carruthers, A. B. Humphrey, Dean Van Norman, Prof. True, Robert E. Jones and J. L. Thatcher.

It was voted to make Davis the permanent location for the annual meeting.

## Auction

11 Head of Purebred  
Registered

## Holstein-Friesian Cattle

ON THE J. L. PALMER RANCH  
ON MAIN STREET AT COMPTON

Thursday, March 7th at 10 A. M.

This choice herd includes nine head of females, fashionably bred in the most approved lines of Holstein breeding. All good individuals, nicely marked and with plenty of type. There are a number of springers in calf to one of the best sons of the great King Mead of Riverside. Also two high class herd sires.

Write for full information.

Geo. Spencer, Owner.

COL. BEN A. RHOADES  
HAROLD B. RHOADES  
Auctioneers.

1505 So. Main St. Los Angeles, Calif.

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes—we pay registration fee. Careful attention given to mail orders.

**Whittier State School**  
WHITTIER, CALIFORNIA

Consigned by A. L. Stephenson, Los Molinos  
Wilsonia Princess Laurel, Bert Nickson, Yountville, \$150.

Consigned by A. B. Humphrey, Escalon  
Leaders Invincibella 2nd, Frank O'Connor, Santa Rosa, \$175; Leaders Invincibella 3rd, W. M. Carruthers, Mayfield, \$170.

Consigned by Napa State Hospital  
N. S. H. Movie, S. D. Prather, Danville, \$75; N. S. H. Lady Deal 4th, E. E. Hyatt, Sacramento, \$95.

Consigned by Silver Birch Farm Newport, Washington

Julia's Lady 3rd, Mills Orchard Corporation, \$100; Silberfa Royal 16th, O'Connor, \$125; Silberfa Bessie, Carruthers, \$200; Silberfa Bessie 30th, E. P. Smith, Elkhorn, \$85; Miss Royal West, Humphrey, \$170; Silberfa Bernice 11th, F. A. Brush, \$400; Silberfa Luster 9th, Mills, \$385.

Consigned by C. M. Talmadge, Newport  
Silberfa Duchess, A. P. Warnack, Pleasant Grove, Utah, \$135; Silberfa Royal 40th, O'Connor, \$125; Silberfa Royal 7th, Warnack, \$225.

Consigned by Robinson Sanatorium, Livermore

Livermore Rosemead, Carruthers, \$50; Livermore Rosemead 2d, Talmadge, \$50; Livermore Rosemead 3rd, Humphrey, \$55.

Consigned by L. N. Irwin, Davis  
Leaders Belle of U. F., Carruthers, \$125.

Consigned by Frank A. Brush, Santa Rosa  
Riverby Princess L. O'Connor, \$175; Lucy Ames L. L. E. Harris, Fresno, \$205; Riverby Princess 3rd, Natamas Land Co., \$335; Whalers, Beronimo, O'Connor, \$150; Rookwood Lady 106th, H. M. Howard, Orland, \$110; Rookwood Lady 101st, Warnack, \$170; No. 34, Howard, \$150; Miss Rincon A., Mills, \$95; Kintyre Maisie, Anchorage Farm, \$200; Gaillard Girl 4th, H. L. Gruhlke, Dixon, \$105; Rookwood Lady 102nd, J. P. Kelly, Liveoak, \$55.

Consigned by W. M. Carruthers, Mayfield  
Rookwood Lady 86th, Howard, \$245; Rookwood Lady, H. L. & E. H. Murphy, Brighton, \$300.

Consigned by James Mills Orchard Corporation, Hamilton City

Mills Ames Rival Girl 1st, Smith, \$105; Mills Ames Rival Girl 3rd, Nixon, \$150.

Consigned by University Farm  
Peggy Leader, Napa State Hospital, \$175.

Consigned by Anchorage Farm  
Anchorage Star 1st, E. J. Barker, Thornton, Indiana, \$100; Anchorage Star 3rd, Mrs. Schmeiser, Davis, \$105.  
Consigned by Hamilton Farm  
Symboleer's Star Lady, Nixon, \$300.

Consigned by Hopland Stock Farm, Hopland  
Hoplands Baronness, A. L. Bovo, Byron, \$60; Hopland Lady Rival, D. N. Hoffman, Knights Landing, \$60; Rookwood Lady 106.

Consigned by C. D. Nichols, Cresco, Iowa  
Queen of Masterpiece 10th, Gruhlke, \$45.

Consigned by Rookwood Farm, Ames, Iowa  
Successor's Duchess 8th, Harris, \$335.

Consigned by Gregory Farm, Whitehall, Illinois  
Symboleer's Sallie, Nixon, \$205.

### RED CROSS PIG AT BERKSHIRE CONGRESS

The pig donated by the breeders of the Western Berkshire Congress, to be sold for the benefit of the Red Cross, brought altogether \$330. The pig was won first by one of the breeders in a \$120 pool and then turned back again for auction, being sold nine times, and each time being returned. The auctioneer himself, bought the animal once but refused to keep it. The tenth and last time it was sold to F. A. Bush of Santa Rosa for \$50.

### PROTECTIVE ASSOCIATION FOR HOG PRODUCERS

Davis, Yolo County, February 21.—At a meeting of the Western Berkshire Congress today on the University Farm, a committee was appointed to confer with the other breeders' associations for the purpose of forming a protective association for hog producers. The next meeting will be held in conjunction with the Liberty Livestock Show at Los Angeles, although the sale will be held as usual at Davis on the University Farm.

## Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

### Registered Holsteins

Young sons of Prince Hiske Walker out of A. R. O. dams for sale.  
H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.

### White House Holsteins

A well bred proven herd sire for sale, also a few bull calves.  
A. M. Sibens, Rt. 1, Box 307, Modesto, Cal.

### Creamcup Holsteins

Burke. A few young bulls for sale.

Headed by the 33.92 pound bull Creamcup Champion Pontiac  
M. HOLDRIDGE, Rt. B, Box 346, Modesto, Cal.

### Sylvan Iris Holsteins

Headed by a son of Dutchland Sir Pietertje Creamelle. Well bred young bulls and a few registered heifers for sale.  
E. F. Young, Rt. B, Box 174, Modesto

### Pelandale Holsteins

Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.  
J. A. Pelanda, Rt. B, Modesto, Cal.

### Segis Pontiac De Kol Dutch

Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale.  
E. E. Freeman, Rt. B, Modesto

### Registered Holsteins

Herd headed by a 36 pound grandson of Colantha Johanna Lad and a 32 pound grandson of Rag Apple Korn-dyke. My cows have won butter fat contests wherever entered. Young bulls for sale. Visitors welcome.  
J. W. Benoit, Rt. C, Box 183, Modesto, Cal.

**Thompson's Registered Holsteins**  
Service age grandson Winifred Hotaling 2nd, 33.92 pounds butter in seven days for sale. Also two bull calves, yearly record backing.  
Luther Thompson, Rt. A, Box 351, Modesto, Cal.



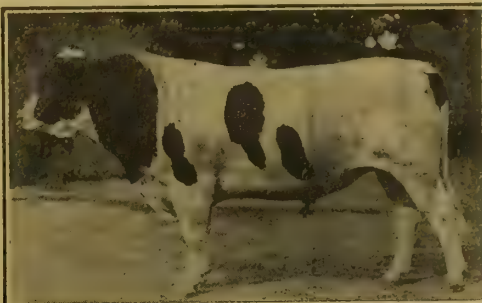
Our Senior Herd Sire is **KING KORNDYKE HENGVERD ORMSBY 7th**. Five of his sisters sold at public auction for \$23,800, an average of \$4760. This blood has made some of the world's greatest producers. Our junior herd sire is **TOYON KING KORNDYKE SOLDENE**, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne. Young bulls for sale. No females. **REGISTERED BERKSHIRE BOARS**, sons of the \$1500 boar Star Leader, for sale.  
**Kounias Registered Stock Farms, Modesto, Cal.**

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supply is limited.

### Are You Going to Act in Time to Get One?

What a wonderful combination of producing and transmitting power is present in this son of the great Korndyke Queen De Kol's Prince and Tilly Alcartra, the only cow in the world that has produced over 40 pounds butter in seven days and over 1100 pounds in one year, and she is also the only 40 pound cow that has produced over 1000 pounds butter for two and three years.



And don't overlook the fact that **PRINCE ALCARTRA KORNDYKE** has already proven the power to transmit his inheritance, for his first five two year old daughters to complete yearly tests average 15.333 pounds milk and 675.92 pounds butter.

Write us for prices or come and see us NOW.

**The J. S. GIBSON CO.**  
Williams, Cal.

## Holstein Friesians

Herd of over 200 head to select from headed by King Mead Acme, whose dam, Sadie De Kol Acme, made 885 pounds butter in one year. We breed for high production and high testers. Will sell bulls that give satisfaction to the buyer and at reasonable prices.

**Frank Helm**

Fresno - - California

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From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged \$1 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

**Frank Reed Sanders, Mesa, Ariz.**

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. EL.

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Carruthers Farms, Mayfield, Cal.

## TAGUS

### Holstein Friesians

(Officially Tested)

We offer for quick sale a mature registered bull for \$250 to first applicant.

Prices on application for breeding stock. Visitors invited to visit Tagus, just four miles north of Tulare.

(Dairy Dept.)

### Pacific States Corp.

Tulare, Cal.

H. C. MERRITT, Jr., Manager

### It is Not an Accident

when a bull sires a long list of high producing daughters when he himself is the result of many generations of matings of high producers, and such a bull is

### Dutchland Sir Pietertje Creamelle

whose sire is by Pietertje Hengerveld's Count De Kol and out of the great transmitting cow Changeling. His dam is a daughter of the former world's record cow Creamelle Vale, and is by a grandson of De Kol 2nd, the foundation cow of the De Kol family.

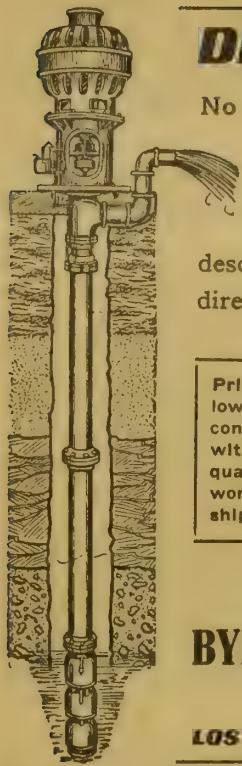
**DUTCHLAND SIR PIETERTJE CREAMELLE** now has 14 A. B. O. daughters, all records made in our herd, and he has had only a limited opportunity as our original herd of breeding cows was small. All of his daughters are heavy milkers with a normal high percentage of butter fat. His first daughter to freshen as a three year old made over 30 pounds butter in seven days. If you would breed better type into your herd, coupled with large milk flow and high butter fat test, secure one of the young sons of this sire that we now offer. Priced right.

**F. STENZEL**

San Lorenzo

California





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A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



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### FRUIT TREES

FRENCH, IMPERIAL and SUGAR PRUNES on Myro. almond and apricot roots; CHERRIES, ALMONDS, BARTLETT PEARS and a full assortment of Fruit and Nut Trees, Plants and Vines.

Catalog and Price-Lists free upon request.



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EUROPEAN SYCAMORE, AMERICAN SYCAMORE, TEXAS UMBRELLA, TULIP TREE, HAWTHORNS, PALMS, PEPPERS and ACACIAS and a

most complete stock of Deciduous and Evergreen Trees and Shrubs, Roses, Cannas, etc.

**Crow's Nurseries, Gilroy, California**

### Perforated Tree Protectors

Why use anything but a PERFORATED PROTECTOR, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small LATH HOUSE ABOUT EACH TREE. Protects from Squirrels—Rabbits—Gophers—Hot Sun—Sand Storms—Barking in Cultivation, etc.

We make a number of kinds. TELL US YOUR PEST, and we will tell you what kind to buy. Get our prices. We can save you money.

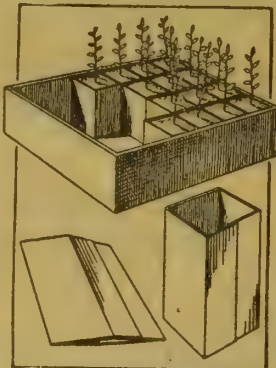
#### COLLAPSIBLE PLANTING POTS

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start

Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant out and all have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

Write for samples and prices of both Pots and Protectors. State which you are interested in.

THE EXAN CO., 935 E. Central Ave., Redlands, Cal.



## Davenport's Steel Shod Cyclone



Your next fight on the Ranch will be with the weeds. Davenport's weeder was never known to lose a scrap. For cutting, pulverizing and mulching the ground Davenport's Cyclone has no equal. Instead of wood front we use a steel plate which slides over the clods crushing them and making the surface smooth. Runners are steel shod and knives are made of spring steel. Cyclone is made in sizes from six feet to 12 feet. Material for these weeders is nearly exhausted. It will be necessary to place orders at once to insure delivery.

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AUTOMATIC AGITATION of liquid. Suction Strainer is brushed clean.

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Warehouses at Oakland and Los Angeles, Calif. Address Field Force Pump Co., Show Rooms at 164 No. Los Angeles St., Los Angeles.



## This Month in the Ornamental Garden

### Southern California

Written for California Cultivator



IF THERE is any Bermuda in the lawn it is reasonably sure to be brown and forbidding at the beginning of March, but with the magnificent rains, even it is greening up. The application of a bit of nitrate of soda or complete fertilizer will help it along. This might well be preceded by raking with sharp garden rake. This tears out the long runners and makes the lawn look very unattractive until the new growth starts, but it livens up the roots and gives the new fertilizer a chance.

The greatest dearth of flowers of all the year usually comes in November and December. This is a good month to look ahead and plan for the fall bloomers. Plant carnations, chrysanthemums, violets, and sow seed of asters, balsams, centaureas, dianthus, marigold, nasturtium, snap-dragon, sweet peas, and zinnias.

It is also a good month for transplanting asters, celosia, centaurea, calliopsis, salvia, Shasta daisy, verbena. A word about Shasta daisies. They sprang into wonderful popularity for a time after their improvement, and justly so, for they are easy of culture, very hardy and bear enormous crops. Once started, each plant will give dozens of offsets the next year.

Another plant which is worthy of general attention is rudbeckia, or golden glow. It is a late summer or early fall bloomer.

Plant deciduous shrubs, syringa, roses, salvia and all evergreens.

Irises, of the earlier varieties, are

now blooming and all of them may well receive an application of commercial fertilizer, a small handful to each clump. The Iris is worthy of more general planting.

Gladiolus is another popular bulb and some wonderful new varieties have been introduced within the past few years. One beauty of the glad is that it gives great increase in corms and enables liberal extension of the planting a second year.

Daffodils are now coming and ready for quick acting fertilizers. A complete commercial fertilizer, often sold in small packages as lawn fertilizer, is excellent for any of the flower beds, unless one has access to a large supply of fertilizer left over from the orchard or farm.

Also plant tritonia, Montbretia, callas, cannas, dahlias, tuberose, tigridias, caladiuns, etc.

Amaryllis, the true amaryllis of the belladonna type, is now having its spring growth and needs fertilizer and thorough cultivation. This beautiful flower comes in late summer and is a magnificent pink. The spring bloomers will also soon be coming and need encouragement of best fertility.

In shrubs and vines prune all of the early summer bloomers, unless perhaps it be the wistaria. These may be allowed to bloom first and have the pruning shears ready as soon as the blooming season is past.

Roses may be induced to give abundant early summer bloom by severe pruning and heavy fertilizing this month.

### Northern California

Written for California Cultivator By A. R. Gould



ALTHOUGH the work of first importance is in the vegetable garden and towards the national work of food production, we see no real

reason to abandon the work of producing flowers and beautiful plants which cheer the heart and banish sadness. This is the mission of the flowers, and it is as necessary to grow them and use them to cheer the wounded and injured as it is to supply food. Those who go to the extreme and advocate tearing up lawns, flower borders, etc. and the work of many years, while vacant lots and large areas held up by land speculators lie idle, are in the same class as those who do nothing. In England one or two of the ducal class plowed up some of the fertile parks owned by them and which for ages reared nothing but deer and pheasants. Recently this land has been turned to good account in raising crops, which is as it should be, and we trust it will from now on always be put to such practical use, but here in this wonderful climate we can continue to beautify our homes and also put a good section to practical economic use.

After these splendid rains we shall find the weeds moving, and we must also get busy sowing seeds, transplanting trees and plants, also completing our general planting schemes. The bulbs such as the snowdrops, crocus, freesias, narcissus and daffodils will now be at their best, and those who planted pansies, double daisy, winter stocks and primula polyantha will have these in flower now.

It will be necessary to keep a close watch for the slugs, especially where small plants have been put out. Where delphiniums have been planted the young tender shoots will be just coming through, and the slug is very partial to these. Night attacks on your part with the flashlight and hand picking will be the only effective measure.

#### Tulips and Lilliums

The Darwin tulips will now be through the ground and you can increase the size of your flowers this month by applying a good quick acting fertilizer. Work this in the surface of the soil around the bulbs. The Easter lilies will also benefit by such treatment as advised above. To those in pots a top dressing of half horse manure and half soil should be applied. Spray for green fly or aphid with Black Leaf 40.

#### Sowing Summer Flowering Subjects

We have to prepare a large box or wooden frame on a hot-bed, made up as advised for raising tomatoes, and placed in a warm situation. If an ordinary window sash or glass can be used as a cover, so much the better. Sow the seeds of the following in small boxes, covering the seeds very lightly with fine sand: Petunias, lobelia, ageratum, mimulus, nicotiana, nemesia, browallia and antirrhinum, or snapdragon. Sow the seed thinly and keep shaded and moderately moist.

#### Gladiolus

The summer flowering type of these should now be planted three inches



deep and six inches apart. The soil should be fairly rich. Among the best named varieties we would advise the following: America, large light, pink tinted, lavender; White Excelsior; Panama, large deep pink; Mrs. F. King, fine scarlet, often seen in florist's stores; Golden King, rich golden yellow; Baltimore, apricot pink; Peach, very delicate white; Afterglow, one of the very best and newest pinks; War, magenta, very large and Baron Jos. Hulot, the nearest approach to a blue that has yet developed.

#### Hardy Evergreen Flowering Shrubs

For general effect a few of the following will prove of value and add to the beauty of any garden. Kalmia latifolia, native mountain laurel with pale pink flowers; Andromeda japonica, flowers pure white resembling lily of the valley; Mahonia aquifolium, yellow flower, leaves change to a beautiful tint in the fall; and Cotton-

east Franchetii, bears red berries and has glossy foliage.

#### Charming Herbaceous Perennials

Massed color effects can be obtained by planting well established plants in groups of Oriental Poppies, Phlox decussata, Scabiosa caucasica, Helenium rubrum, and chrysanthemum maximum. Shasta Daisy, strong clumps of these can usually be secured from the nurseryman for planting now.

#### Shirley Poppy

If you have a good bed or border which gets all the sunshine you may have a wonderful array of coloring by sowing broadcast seeds of the beautiful Shirley Poppy. This is a very popular annual and originated many years ago in an English vicarage garden whence it is named. It is said to have developed among the red or cornfield poppies. It thrives in our state extremely well.

## This Month in the Vegetable Garden Southern California

Written for California Cultivator By D. F. Reichard



UR long wait has ended. The rain has come, and we are all happy. The long delay of the rain's arrival has been beneficial in many ways. It has given us time to get our ground thoroughly cleaned up, thus disposing of all rubbish that might harbor insects or fungus to attack this year's crops; to prune trees and shrubs and spray them without interfering with the garden that might have been and to loosen the dry earth and turn it up to the sun.

Turning the soil over in the dry state, summer fallowing, is an excellent tonic for it. The sun warms it and air circulates through it freely, both of which are remedies for sour soil and almost sure death to insect eggs that have been deposited to be hatched for the spring attack on the garden. So this dry winter has no doubt been a blessing to the extent of greatly reducing garden pests for the coming season, and with a little diligence everybody can easily keep the pests well under control if not wholly exterminate them.

With all in our favor, now the thing to do is to raise as much in our gardens as possible. It is absolutely necessary for the salvation of the whole world as well as our own country. If you are new at gardening or a recent arrival in the Southwest, get a catalog from our advertisers—they are full of reliable information—or write to us direct.

March will be our heaviest planting month as both hardy and tender stuff

We Offer Especially Good Stocks of

## Melon Seed

Our Stock of

## Klondyke Watermelon

this year was grown from seed of the original melons

25¢ oz \$1.50 for 1/2 lb. \$2.50 per lb.  
Not Over 5 lb. to a Person

Ask for Our List of Melon Seed  
and Hints on Gardening

Morris & Snow Seed Co.

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may be put out. Make the soil ready for the seeds and plants by deep tillage. Sow seeds of the hardier vegetables such as carrots, beets, turnips, etc., for succession. The last planting of peas should be made by the middle of the month that they may make their growth before the long hot days come.

Plant Canadian and Ventura Wonder beans early in the month and any or all varieties the latter part of the month. As the ground warms up plantings of Heaths Early sweet corn, Klondyke cucumbers, muskmelons and watermelons, Fordhook or White Bush squash may be indulged in with comparative safety. Set out plants of early and main crop tomatoes and peppers; also sweet potatoes, cabbage and cauliflower may still be set out.

If any fruit or berry plants are to be put out they should be set at once as the warm weather will soon start them and then it is too late to get best results.

No doubt the total rainfall this year will be below normal so it behooves us to conserve moisture at every point. Plant all crops on the level instead of on ridges. Make furrows between the rows each time it is necessary to irrigate. Cultivate thoroughly after each irrigation or rain storm, leaving the garden as level as possible, with finely pulverized surface. Keep all weeds down; thin out all crops as soon as the plants are large enough to show character. At the first sign of insects or fungi get after them with the proper remedy. Black Leaf 40 and Bordeaux mixture should be always at hand for this purpose.

## Northern California

Written for California Cultivator  
By A. R. Gould



WE HAVE this year to use all our efforts, our spare moments, our vacant lots and home gardens to prove California can produce the goods.

Strategy in military tactics will prove a winning factor in the war, but equally as important is strategy in food production and conservation. We have been favored with some splendid rains already and indications are that we may hope for late rains which will carry our crops along half way through the season, and we shall be

Continued on Page 282



"There is a Rex for every orchard trouble."

REX SPRAY materials are the result of 20 years of scientific investigation into orchard troubles and 20 years of continuous experience in perfecting products best suited for their control.

REX LIME AND SULPHUR SOLUTION  
— REX ARSENATE OF LEAD — REX BORDEAUX MIXTURE — REX MIS-CIBLE OILS — REX SOLUBLE OILS — REX MISCIBLE DISTILLATE — REX SOLUBLE DISTILLATE—REX SULPHUR PASTE—REX DISINFECTANTS—REX SOAPS — REX OIL EMULSIFIER, ETC.

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BENICIA, CAL.

— REX SPRAYS — The Standard for 20 years

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California Sprayer Co.,  
Reedley, Calif.

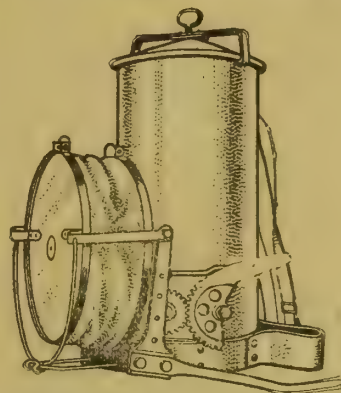
Dear Sirs:

Kindly send us two more standard size machines. We are very well pleased with your machines. They are the best we have ever used.

Enclosed find check.

Yours sincerely,  
L. MANGELS & SONS.  
By Claus.

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Send for Our Book on Pest Control

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Don't limit your spraying to fruit and flowers—spray your vegetables—especially your potato-plants. Last year's war-gardens suffered severely through lack of spraying. Help make 1918 a record vegetable year. Get a

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and get the benefits of Deming Simplified Spraying perfected by 25 years of intensive study of orchard, farm and garden spraying. Deming rigs give you spraying, free from delays and vexations. Write for free 40-page catalog.

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### TREES

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Eureka Walnuts are the Best**—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alhambra St., Alhambra, Cal.

**Here Is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons, Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

**For Sale**—Fancy and standard varieties of Grafted Walnuts and Pecans. Largest variety of Walnut grafting wood in U. S. We are the oldest and most extensive propagators of walnut varieties in the U. S. Prices reasonable. Tribble Brothers, Lodi, Cal.

**For Sale**—8000 Valencia Oranges and Eureka Lemons, selected stock two and three year buds on sour roots. Large stock never culled nor neglected. 65c while they last. Nursery, Montebello, opposite Grammar School. Address L. F. Thurston, R. D. 3, Orange, Sunset Telephone 35J4.

**For Sale**—Bartlett Pears on Japan blight resistant roots 4-6 and 6-8 ft. Placencia Perfection and Eureka Walnuts on California Black root. All stock of very best quality. Prices reasonable. Write or phone your orders now. Los Nietos Valley Nursery, Downey, Cal. Phone 692.

**For Sale**—25,000 2 year old uncultured citrus trees, (Navels, Valencias, Lemons) positively of the very highest pedigreed quality, must be removed from young orchard this season. Price attractive. Write for information to John Hinkle, Lordsburg, Cal.

**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References. R. R. Morris, East Whittier, Cal.

**Walnut and Almond Trees**—Mayette, Franquette, Concord, and Willson Wonder on Northern California Black root. Texas prolific and Drake seedling almonds on almond root. Stock is first class, cannot be better. Write for prices. Ekstein Nurseries, Modesto, Cal.

**For Sale**—Valencia Orange and Marsh grapefruit trees. Stock propagated only from Performance Record Trees of best type. Trees that will bear and insure profits. Write today. L. V. W. Brown, Riverside, Cal.

**Pear Trees**—Offer several thousand Bartlett, 2 and 3 feet, heavy caliper at 9c each. French prunes. Trees of all kinds. No agents; we sell direct. Write for price list. Carlton Nursery Co., Carlton Ore.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell** is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574. Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**Bartlett Pears**—French prunes, Standard Apples, Cherries, Quinces, Plums, etc. No agents, save 50 per cent. Lafayette Nursery Co., Lafayette, Oregon.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**Apricots, Olives, English Morello Cherries and Arizona Ash.** First class trees. C. E. Mover, Hemet, Cal.

**Budded Avocados**—All leading varieties. Address Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, Cal.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Laramie Park, Cal.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsuragi, 23rd St. Upland, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale. Inspection invited.

**Budded Orange, Lemon and Grapefruit trees**, 2 years old. K. Niwa, Box 306, Glendora.

### TREES

**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**Citrus**—7000 Navels, Valencias, Eureka Lemons, two and three years. Located Whittier and Glendora. 10,000 one year Villa Franca, Lisbon, Eureka and Seedless Lemons. Located near San Diego. Clean thrifty stock. Our own budding, buds cut from record trees. You will not make a mistake in ordering this stock. Cyrus W. Wilhite, Citrus Nurseries, Glendora, Cal. Home 303.

**Eureka Lemon Trees**—Have some first class 3 and 4 year buds for 25c each. Lots of 100 or more. Fine root growth and dandy trees. Some M. S. grapefruit same price. Phone Bdwy. 1720, Smith Citrus Nurseries, 816 Washington Bldg., Los Angeles.

**Olive Trees**—Three years old this spring. Stock taken from record-bearing grove. 3000 Manzanillos; absolutely no finer nursery stock to be had in California. Stock located near Redlands. Prices reasonable, mailed on request. J. A. Burke, 612 Black Building, Los Angeles.

**For Sale: Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencias and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110, Los Angeles.

**For Sale**—Grafted Walnut Trees, Placencia Perfection, 6 to 8 feet; Eureka, 4 to 6 and 6 to 8 feet. Grafted on northern black roots and scions of known parentage used. Prices right. Address C. W. Story, Rivera, Cal.

**For Sale**—The famous Tucker Franquette walnut. Splendid stock at prices you can afford. Closing out account land changing hands. Write for prices. J. D. Tucker, Proprietor, Weed Patch Nursery, 832 19th St., Bakersfield.

**Mission and Manzanillo Olive trees**, all sizes and prices sure to satisfy. Write us at once for any amount. We want to sell. Imperial Valley Nursery & Seed House, El Centro, Cal.

**Pistache Scions** best imported varieties from bearing trees. Our pistache orchard largest in United States. Pecan scions finest varieties. Tribble Bros., Elk Grove, Cal.

**Would like to correspond with those who want to plant strictly fruit wood**, budded Eureka Lemons. No shade trees. H. Clements, Glendora, Cal.

**Florida Sour Orange Seedbed Stock**—Clean, straight and very vigorous. Performance Record Citrus Trees. F. H. Nushickel, Glendora, Cal. Phone 388.

**For Sale**—20,000 Sour Orange Seedlings, \$20.00 per thousand, f. o. b. our station. Natomas Company of California, care F. E. Mason, Fair Oaks Cal.

**ENTER YOUR ORDER FOR EUREKA WALNUT BUDS NOW**—E. HOLVE, BOX 96, FULLERTON.

**A Few Mission and Manzanillo olives**, good stock, ¼ to 1½ inch, 20c each in nursery. Roy R. Mathews, Buena Park.

**For Sale**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, Cal.

**For Sale**—Citrus trees and seed stock. B. C. Dodson, Glendora, Cal.

### WANTED

**Wanted**—Working foreman with executive ability, able to adjust self quickly to new working conditions. Clean, energetic, active, close attention to detail. Life experience with farm operation and machinery. Good with horses and mules. California irrigation experience desirable. Permanent position and good pay to right party. HAVEN SEED CO., Santa Ana, Cal.

**Wanted**, from one span to 50 head of good blocky mules, weights from 1150 pounds and over; do not want anything more than six years old, prefer four years old. Address E. F. Sanguinetti, Yuma, Arizona, stating price.

**Wanted**—Pure bred Toggenburg does, bred to pure bred Toggenburg buck. Must be registered with A. M. G. R. A. of Dayton, Ohio. J. C. Chadbourne, Suisun, Cal.

**Wanted**—A responsible party with teams to put in crop of beans on shares. Will provide the seed and pay the land rent for right party. Box N. C. G., California Cultivator.

**Wanted**—Position as foreman or manager of citrus ranch. 11 years experience. Bank references. 239 W. Lime Ave., Monrovia.

### MISCELLANEOUS

**Famous Hairy Peruvian Alfalfa Seed**—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

**Grafting and Covering Wax**—No heating required. Put on with a brush. Sample 50 cents. Paul Kruger, Watsonville, Cal.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Quality Trees**, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

### PATENT ATTORNEYS

Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

### AUTOMOBILE ACCESSORIES

**Titian Batteries for Service.** Get our prices before buying or having an old battery repaired. Call or write. Olive Street Electrical Co., 910 South Olive St., Los Angeles, Cal.

### ENGINES

**Several New and Slightly Used Engines.** ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

### POULTRY

**We can furnish you with White Leghorn chicks from guaranteed heavy laying stock at very reasonable prices.** Big money raising chickens and eggs. White Leghorns make broilers in ten weeks; pullets lay at five months. WE QUARANTEE safe delivery of all chicks to destination. Shipped safely anywhere west of the Rockies. No money in advance; pay on delivery. SPECIAL PRICE on 500 and 1000 lots. Finest hatchery in the world. Established over 20 years. Further information, write MUST HATCH INCUBATOR CO., 418 Seventh St., Petaluma, Cal.

**White Leghorn Baby Chicks**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us, \$11.00 per 100. Lyon Hatchery, Gardena.

**Baby Chicks**, Ancona, Rhode Island Reds, \$14.00 per 100, Barred Rocks, \$17.50. MacFarlane Quality White Leghorn, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. Agent for Poultrymen's Co-Operative Association. Incubator catalogue mailed free. D. E. Doke, 743 So. Los Angeles St., Los Angeles.

**For Sale**—Pure Strains baby chicks from selected flocks, White Leghorns, R. I. Reds and Barred Rocks; hatches every week, order filled in rotation and shipped anywhere. Also Buckeye and Jubilee Incubators and Brooders. Stiles Poultry Supply Co., 645 G Street, San Diego.

**For Sale**—Lo-Lo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Thoroughbred B. Rocks exclusively**—Hen record 190 eggs in 10 months. Trap-nested pedigree matings for 1918. Pen \$2.50; two, \$1.50 per 15 eggs. Baby chicks, March and April, 25c limited number. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, Cal.

**For Sale**—Anconas the most popular breed today. "There's a reason." Small eaters and heavy layers of large eggs. Five breeding pens. Eggs of guaranteed fertility \$1 per 15; \$6 per 100. A. E. Nelson, El Monte, Cal.

**Huddleston Blue Andalusians**, great winning and laying strain, Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**Ancona Hatching Eggs**—200-280 egg English imported strain. 15 eggs \$1.50, 100 eggs, \$7.00. 90 per cent fertility guaranteed. F. P. Taggart, 642 S. Boyle avenue, Los Angeles. Phones: Boyle 1877, Home 41907.

**For Sale**—D. W. C. Strain, Single Comb White Minorcas, large, pure white, perfect type, bred to lay. Choice birds, also eggs for hatching. D. W. Clark, Star Route, Box 41, El Centro, Cal.

**For Sale**—4 R. I. Red cockerels 9 months, 3 bright and 1 dark red at \$3.00 each; 30 R. I. Red pullets at \$1.50 each. One of the best utility strains. R. Daniels, Walnut Creek.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery**, Watsonville, Cal.

**Am Booking Orders for chicks from Barred Rocks, R. I. Red and White Leghorn stock for spring delivery.** Send for circular. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain), Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Baby Chicks (White Leghorns)** shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

**Baby Chicks from Forney's famous heavy laying strain of Single Comb White Leghorns**, \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**"Eastman's Bred-to-Lay"** Hoganized, Trapnested, Barred Plymouth Rocks, April chicks, eggs. Fairmead Poultry Farm, Fairmead, Cal.

**White Wyandotte eggs for hatching** from fine breeding pens. Can't be excelled for winter layers. J. W. Nicholson, Wasco.

**Famous Ferris White Leghorns**—Standard of quality. Guaranteed eggs and chicks at let-live prices. Hanscom, Escondido, Cal.

**Baby Chicks**—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynolds, Lathrop.

**Pit Games, Reds, Blues, Grays—Cocks**, stars, hens, eggs. R. H. Crane, Route 3, Santa Rosa.

**Buff Leghorn Eggs** \$1.50 per 15; \$9 per 100. Mrs. H. W. McClure, Glendale, Ariz.

**Famous Tom Barron White Leghorn eggs** \$2.00. E. F. Barclay, Lindsay, Cal.

### POULTRY

**Order Now**, pure bred White Leghorn chicks, 15c each until March 15th, then 12c. Eggs \$1.00 per 15; \$2.00 per 30; \$6.00 per 100. Big plant, best strains foundation stock, thousands of breeders, 20,000 feet under roof, green feed and fresh cut bone fed daily. Remember, the chick or egg cost is small compared to the feed cost, so get the best. Catalogue free. New ton Poultry Farm, Dept. 3, Los Gatos, Cal.

**Big Profit Now Raising Our 200-290 Egg** Leghorn, Wyandottes, Anconas, Rocks, Reds, Minorcas, Orpingtons, Brahmas, Ducks. Thousand chicks, eggs, weekly, reduced February. Laying pullets, hens. MALES HALF PRICE. Many repeat orders. Hundreds customers making money. One cleared \$305 on 43 hens, another \$617 on 110 last year. James Beeson, Pasadena, Cal.

**Baby Chicks and Eggs**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks from my thoroughbred and carefully selected flock of S. C. White Leghorns.** Orders booked no prior spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Model Poultry Farm, White Leghorn Specialists**, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Baby Chicks**—All good strong youngsters. Hatches every week. White, Brown and Buff Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Baby "Chicks" and Eggs for Hatching** from pure-bred McFarland strain S. C. White Leghorns. Carefully culled and Hoganized for heavy egg production, not simply "CHICKS" but stock as well. Sonoma Valley Hatchery & Poultry Yards, Sonoma, Sonoma Co., Cal., R. D. 2, Box 48, F. J. Hansen, Prop.

**Spring Chicks**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

**White Leghorns**—White Rocks—Highest class of thoroughbred stock. Chicks, Leghorns, \$15.00 per 100. Rocks \$20.00 per 100. Eggs \$2.50 per 15, \$10.00 per 100. Eggs from special pens of high class exhibition type \$5.00 per 15. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

**Baby Chicks**—Leading varieties. We guarantee safe arrival and full count; strong vigorous chicks from the finest flocks of free range stock in this country. 1918 price list and instructions on care of baby chicks, if you mention this paper. Lasher's Hatchery, Petaluma, Cal.

**For Sale**—Baby chicks from fine thoroughbred heavy laying stock. White Leghorns, 100, \$12.50. Rocks and Reds 100, \$15.00. Hatching eggs 15, \$1.25, 100, \$6.00. McDonnell's Black Minorca eggs, 15, \$1.50, 30, \$2.50. Bronze Turkey eggs, 12, \$4.00. W. H. Rails, Orange, Cal.

**Baby Chicks from my vigorous heavy-laying strain of First Prize winning Anconas**, \$18 per 100, \$80 per 500. Hatching eggs \$1.50 a setting, \$7.00 per 100. Kaj Paulsen, Route F, Fresno, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

**Hatching Eggs**—S. C. White Leghorns. Bred-to-lay hoganized birds from Pine Tree Strain. Fertility guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns**, "Quackless" White Muscovy dux, White Embden goslings, stock, eggs and babies. Stamp for prices. White Star Hatchery, Kerman, Cal.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**For Sale**—Rhode Island Red baby chicks from our carefully selected matings, \$14 per hundred. Williams Poultry Place, 236 No. Gage, Los Angeles.

**Hatching Eggs from high class S. C. Anconas**, \$1.50 per 15; \$7.00 per 100. Eggs from specially selected pens, \$2.00 per 15. H. A. Loud, Winters.

**White Leghorn Baby Chicks**—Strong and healthy for particular people, from Hoganized heavy laying mature fowls. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

**Winter Laying S. C. Reds**, linebred from New York, Los Angeles and laying contest winners. Choice cockerels \$5 and \$10. Eggs \$3. W. M. Marquam, Bishop, Cal.

**Baby Chicks**—C. A. Gray Hatchery, Le-moore, California. S. C. Brown Leghorn, 12½ cents, S. C. Rhode Islands 5 cents per chick. \$3.00 per 100 with order.

**Buff Orpingtons, Buff Ducks, Bourbon Red Turkeys.** Hatching eggs; baby stock; mating list. The Ferris Ranch, S. Reservoir, Pomona, Cal.

**Trapnested White Leghorns**—Official 200 egg records, also eggs from above \$2 per 15, \$3 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

**"Barclays Barred Beauties"**—Grand exhibition cockerels, cocks and eggs. G. S. Barclay, R. A. Lindsay.



## HOGS

**The Billiken Brand of Chester Whites**—There is right now a big shortage of swine in California. The output of 1918 will show even a greater shortage unless the farmers of this state get busy and raise more hogs. Good breeding stock is scarce and hard to get. **THE BILLIKEN BRAND** represents the best obtainable; they are of that mellow type that mature early and are such satisfactory easy feeders. Get started with this strain and help out the Food Administration and your own pocket as well. Write me your wants—do it today. I can still furnish first class animals at reasonable prices. C. B. Cunningham, Mills, Cal.

**Grape Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more hogs left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 27th, and a few bred gilts. Our herd won the Premier Breeders' Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massave Orange. Watch for the sensational offering of sows bred to this great trio which sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal., W. Bernsteins, Proprietor.

**Hogs—Duroc-Jersey—Bargains**—Two year old, registered boar, \$35.00. One year old, subject to register, \$30.00. Send for pedigree. We shipped pigs recently from San Diego County to Yolo County. **THE SAN DIEGO LAND CORPORATION**, 401 Southern Title Building, San Diego, California.

**For Sale**—Several four and five months old Poland-China boars, registered. Something that you will be proud to place at the head of your herd. Write for price and information. Address H. B. Peake, Manager, 358 11th St., San Bernardino, Cal.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Duroc-Jerseys**—Sold out of bred gilts. Two service boars. One of them an outstanding individual for sale. Also Fall Pigs, both sexes. Twenty-three ribbons on 11 entries, including 6 championships, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin and Forbes, 722 San Fernando Building, Broadway 4170, Los Angeles.

**Duroc-Jerseys**—The blood of champions such as Defender, Orion Chief, Taxpayer, "13," Golden Model. A few choice fall gilts of Grand Champion Breeding at reasonable prices. T. R. Bond, Tipton, Cal.

**Duroc-Jerseys**—15. 8 females, 6 barrows, 1 boar. Registered, life immunized from cholera. 3 months old. Price \$20 each for the bunch. Garden City Sanitarium, San Jose, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**Recorded Poland-China** boars, 18 months old, sired by Superba. Bargain at \$50.00. Immuned, and tried breeder. C. R. Hanna, Riverside.

**PLW Durocs**—Golden Models and Great Wonders are the most consistent winners at every show. Peters, Lamson & Walker, Devore, San Bernardino County, Cal.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Cal.

**Durocs—P. & L's Defender** by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

## RABBITS

**For Sale**—New Zealand Red rabbits and fur bearing young stock. "The Western Rabbit Book" 50c, everything pertaining to the business, latest out. 13 chapters, illustrated, tanning, etc. Raising rabbits is a pleasant and profitable work, meat, warmth and fertilizer. Making a living on an acre and care of rabbits. 25c. Mrs. C. A. Richey, 616 N. Benton Way, Los Angeles.

**Go Into Business For Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, Cal.

## LUMBER

**Lumber—Sash—Doors—Plumbing**—Supplies—Building materials of all kinds. New and second hand. \*A. R. W. shingles 55 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

## SEEDS AND PLANTS

## SEED POTATOES

Fancy stock Early Rose, American Wonder, Oregon and California Burbank, and British Queen Seed. Specially grown. Prices are right. Send for quotations. Wm. A. Curtis Co., 400 Front St., San Francisco.

**Plant Alfalfa Now** and get full benefit of spring rains. Hay prices promise to be high and early plantings should pay, better this year than ever before. There are many kinds of alfalfa, one is best suited to your conditions. Write us of your soil and water supply and let us send you samples of seed we consider best suited to your needs. Desk B, Bomberger Seed Co., Modesto, Cal.

**HEADQUARTERS for ALFALFA and SUDAN Grass Seed**. Our Field Seeds are cleaned to the highest standard of purity. When buying from us you are not paying for chaff or weed seed. Write for prices and samples.

**VALLEY SEED COMPANY**, 502-504 J St., Sacramento, Cal.

**Alfalfa Seed**—Common variety, Halry and Smooth Peruvian. Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. E. F. Sangunetti, Yuma, Arizona.

**Plant a Few Acres of Dwarf Milo Maize** for seed. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sweet Potato Plants**—New varieties sweet potato plants: Nancy Hall, Porto Rico, Early Triumph, \$7.50 per 1000, \$1.00 per 100, April and May delivery. J. Braswell, Lindsay, Cal.

**Rhubarb Plants**—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00. Wagner's Giant Crimson Winter \$3.00. 50 cents per dozen. Currier Bulb Co., Seaside, Cal.

**Sudan Grass Seed**—Absolutely clean, direct to you. Price, 18 cents. Send me your order right now. Money back, without a question, if not satisfied. Joe Brubaker, Route B, Modesto, Cal.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Dwarf Milo and Feteria Seed**. Selected under direction of Riverside County farm adviser, from heavy yielding strains. L. S. Cushman, San Jacinto, Cal.

**Seed Potatoes**—Very fine. Selected from patch yielding 200 sacks per acre. 3 cents per pound. H. D. Carden, Victorville, Cal.

**Mitchells Everbearing strawberry** our specialty. \$1.00 per 100 plants, \$5.00 per 1000 plants. Primma Vista Gardens, Arlington.

**Seed Potatoes**—White Rose in lots of 10 to 500 sacks. Price \$2.00 per 100 pounds, f. o. b., Duarte. H. Vosburgh, Box 46, Duarte, Cal. Phone Monrovia, Blue 235.

**For Sale**—1700 bushels pure, well matured Sudan Grass seed 1914c. Peruvian alfalfa and cane seed. Address Box 501, Fowler, Cal.

**Oxheart Carrot Seed** for sale—First class seed. Price \$1.00 per pound. Walter E. Etter, Etnersburg, Cal.

**R\*O\*S\*E\*S** 50 cents per dozen. Write for Catalogue C. and special prices. Kavan Nurseries, San Bernardino, Cal.

**New Hybrid Alfalfa**—Great underground stooler, growing thicker (not thinner) with age. J. L. Lawson, San Jose.

## TURKEYS

**Just One Grand Champion Sweepstakes** Special offered for the best pair of turkeys in the show at the California State Fair, 1917, and that prize was won by **GOLD NUGGET STRAIN GIANT BRONZE TURKEYS**. They again proved their superiority by winning at three great shows, California State Fair, 1917, Texas State Fair, 1917, Los Angeles, 1918. Gold Special Sweepstakes at all three shows. Each judge pronounced them the best in the show, all breeds competing. Remember it was the Gold Nugget Strain that won at America's greatest turkey show, World's Fair, San Francisco. Three prizes on four entries. Large turkeys can be raised at practically the same cost as small ones. My toms will give you an increased weight of five pounds the first year. Either stock or eggs will give you vitality, size and beauty. Address all communications to J. Will Blackman, 607 East Third St., Los Angeles, Cal.

**Turkey Eggs**—I will have about 1000 Turkey eggs for sale March 10 to 25 from good Utility Bronze Turkeys. Toms weight 22 to 25 pounds, hens 10 to 15. 90 per cent fertility guaranteed. Price \$25.00 per 100 f. o. b. C. P. Emerson, Gardena, Cal.

**Mammoth Bronze Eggs** our specialty. "Gold Nugget" and other strains of Mammoth type, also Collie Pups. John G. Mee, St. Helena, Cal.

**Mammoth Bronze turkey leaders** of Imperial Valley toms, 8 months weight 26 to 30 lbs., price \$15.00 to \$25.00 each. E. V. Blaschko, Silsbee, Cal.

**Eggs—Bourbon Red and White Holland** turkeys. Toulouse geese, Guineas, Buff Orpington chickens. E. A. McKinley, R. D. Ukiah, Cal.

**Giant Bronze Turkey Eggs** from America's leading strains. M. M. Reiman, Planada, Cal.

## FOR EXCHANGE

**For Exchange**—80 acres rich level soil. Casa Grande Valley, Arizona, for smaller acreage in California. Address L. F. Reaty, Bremerton, Wash.

## PIGEONS

**Belgian Carneaux Pigeons**, greatest squab-producers known. Order a few pairs and raise your own meat. \$2.00 per mated pair, any quantity. All birds double number color banded. Prompt shipments. PURSELL O'NEAL, R. F. D. 2, Box 800, San Gabriel, Cal.

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## GOATS

**Toggenberg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, Cal.

## Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

## Warts

How can I remove warts from a yearling heifer's neck? Have tried tying horse hair around them at the base but without success as some are too large for that.—Subscriber, Julian.

Warts can often be removed by wetting them every day with castor oil. If this does not remove them then use nitric acid. When using nitric acid be careful not to allow any of it to touch the hands or clothing as it is a very powerful caustic. Rub a little grease or vaseline around the warts and use a swab to apply the acid. One application is often sufficient.

## Congested Udder

We have a heifer fresh with her first calf. The milk was bloody at first but finally became normal. She gave about 16 pounds of milk at each milking at first; dropping down to eight in the morning and four at night. Now she gives only two pounds at a milking. She is a hearty eater. We feed two pounds beet pulp, one-quarter pound cocoanut meal and 20 pounds of alfalfa hay cut and mixed wet twice a day. She is in good condition and we do not like to lose her. What can be done for her?—Subscriber, Tulare.

You are feeding too heavy. The amount of beet pulp and cocoanut meal is not too much, but 40 pounds of alfalfa hay is more than she can digest properly. A larger and older cow might stand that amount. Give her a physic of one pound of epsom salts and half a pound of common salt dissolved in two quarts of hot water.

When cool give at one dose as a drench. Follow this with these powders: Powdered gentian, four ounces; powdered nux vomica, two ounces; bicarbonate of soda, four ounces; farina enough to make one pound. Mix and divide into 16 powders. Give one powder morning and evening for four or five days, then one a day while they last. Reduce the amount of hay one-half. Cut a little of the hay to mix with the powders, and you might wet that but give the rest of the hay dry. She will masticate the dry hay much better and digest it much better also. When she gets right you might increase the hay a little. Be sure she gets plenty of good water to drink.



## Mating Time Is Here

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## "Mother Jug" and Her Children

Written for California Cultivator By Jean A. Koethen



THE supreme need of the baby chick the first five days is mothering. This includes sufficient warmth, but it wants more than warmth; it wants to feel the touch of something protecting and maternal. This sounds like sentiment, but it is not, it is fact.

This spring when my February hatch was about to come off, I resolutely turned my back on the lamp-brooder and said, "I'll try the fireless way." I have often used the fireless brooder after the first week, but never from the start. We partitioned off a snug corner of the feed house and put a small window in the south wall, close to the floor, so that the chicks could have sunshine most of the day. The Philo fireless brooder, with a nice nest of straw and a clean quilt, was ready. Everything seemed propitious for a good fair trial of fireless brooding.

But alas, "the best-laid schemes of mice and men"—my hatch, contained but 16 chicks, and 16 chicks could never keep themselves warm in February in a fireless brooder. The Philo brooder was shoved one side, a clean apple box with the inevitable burlap sack and plenty of straw in the bottom substituted and "Mother Jug," hastily wrapped in scraps left over from our Christmas bath robes, and filled with boiling water, placed in one end. Over the whole, tucking down about the jug, I threw an old cotton blanket, folded so that it would rest on the backs of the chicks and still fall well over the sides of the box, and my "jug-mother" was ready.

Contrary to the advice of all authorities, I never leave my chicks in the nursery of the incubator after the hatch is over. If my hatches were large I might be obliged to do so, but I never can believe that they are comfortable, in such a box-like place with nothing soft and warm and cuddly about them. If any chicks are unable to extricate themselves from the shell, they are helped out and left on the tray till they are dry.

This little hatch of 16 was tucked in close to the jug-mother and left there for 24 hours or thereabouts, the water in the jug being changed morning and night. I found that if it was put in boiling hot and the jug well wrapped, it was still warm at the end of 12 hours, and the chicks, cuddled against its soft side, were unmistakably comfortable. At the end of the 24 hours I let them out in the sun before their little window and gave them water, grit, and some steel-cut oats to pick at. As long as they hopped around cheerfully I let them stay out, but as soon as they began to lean against one another, they were quickly pushed back into the box and covered up warmly. Two chicks had been helped out of the shell at the end of the hatch, and it seemed as if one of these could not pull through. Two or three days these chicks remained cuddled against the jug-mother when the others were let out to eat, but plenty of heat and something to cuddle against won the day, and they were soon as lively as the others, though still undersized. If those chicks had been with a hen, she would probably have crushed them, and they would certainly not have lived in a lamp-brooder.

The weather was cold and rainy, and the chicks were ten days old before they could be outside, and three

weeks old before I felt justified in leaving them without the jug. As soon as they could be out I had a little run made for them. It was about 15 inches high and enclosed with shakes on three sides, while the fourth was covered with wire. By placing this run with the wire side toward the east, I gave them the early morning sunshine though they were still brought in at night, but by the time they were three weeks old they had outgrown this, and after a few days in the large wire run they were given the range of the garden. It seems best to keep chicks confined for the first three weeks of their life for fear of prowling dogs and cats and the sudden shower or change in the weather. After this age they quickly become independent. I can see no occasion in our climate for giving chicks artificial heat for six weeks, as is sometimes advised. These 16 chicks kept each other warm in their apple box in an outdoor coop after three weeks, and the next brood did much better.

This second brood, which took possession of the jug-mother, when the first one gave her up, numbered 27 and could easily in the warmer weather have been raised without the jug. As it was they seemed actually to complain of the warmth after the fifth day when our March hot spell came on, and I gave them the fireless brooder. Now that the mornings are chilly again, I give them the jug in their little play yard as soon as they are out of the brooder, but a few minutes' warming is sufficient, and they are soon out of doors. There were in this brood three chicks that had to be helped out of the shell, but all were brought safely through the first critical days by the comforting warmth of "Mother Jug." Every one of the 43 chicks of these two broods is still alive, and I have never raised my early chicks so easily.

I would not for a minute argue that a jug is always the best substitute for the hen. It works very well with 25 chicks; I think it would do equally well with 50 if a larger box were used. Where a large number of chicks are raised every season it would probably be too troublesome, though I doubt if it is any more troublesome than a hen, take it all in all. The peculiar advantages which the jug has over other methods of artificial brooding are that it costs absolutely nothing, for almost every home contains a vinegar jug; there is no fussing with lamps; there is no danger of fire or of the chicks getting into the heater as mine did several times with the lamp brooder; the chick has something to snuggle against, which is its heart's desire; the heat is always sufficient; the air space is easily adapted to the size of the brood; ventilation may be readily increased according to the age of the birds; the chicks are never overheated, for they never seek the "mother" unless they are cold and transition is easily made, as soon as the chicks are ready for it, to the fireless brooder.

With any sort of brooding, lice and mites must be always watched for. I thought that my new boxes would be mite proof for a good while, but the hot weather brought them from somewhere, and every box had to be painted with kerosene and carbolic acid. Incubator chicks ought not to have lice; they are certainly free when they come out of the shell, but



the lice always find them after a few weeks if they are not well dusted. I used to sprinkle their backs at night after they were in the brooder, but this annoyed them so much—and who would like to breathe lice powder all night?—that now I take them one by one and fill the growing feathers with powder under wings, over back and

### For Worms in Chickens

"Very successful" is the way a Massachusetts poultry raiser describes a remedy for worms in chickens, suggested to him by a United States department of agriculture official after recommendation by investigators in the California agricultural experiment station.

The poultry raiser added, in his letter of thanks, that thorough trials of other remedies had failed. That which he praised follows:

#### Treatment

"Give the chickens no food or water for 24 hours before treating; then feed them half the usual amount of ground feed in which has been mixed

head and about the vent. Going over them in this way once in two weeks ought to keep them free from lice. When chicks a month old begin to look listless and do not seem to grow as they should, I at once inaugurate a campaign against lice and mites, but it is far better to begin the campaign before the pests arrive.

finely chopped tobacco stems soaked for two hours in all the water they will absorb. One pound of tobacco stems (weighed before soaking) is sufficient for 100 birds. Two hours after the chickens have eaten the medicated mash, give them one-fourth of the usual ration of ground feed mixed with water in which Epsom salt has been dissolved, using 11 ounces of Epsom salt for 100 birds.

"To reduce the chances of further infestation all manure and loose dirt should be removed from the chicken yard and the pens and roosts thoroughly scalded and cleansed with hot water."

### Stop Shipping Poultry in Ice

That chilled dry-packed poultry reaches destination in much better order than the wet ice-packed product is shown, the United States department of agriculture states, by reports which are reaching it from various markets. The specialists of the department recently studied shipments of chilled dry-packed poultry and wet ice-packed poultry which had been shipped in the same car. The dry-packed birds were in excellent condition, while the wet-packed were unfit for use on arrival at destination. The dry-packed product

stands delays in transit far better than the ice packed, especially during warm weather.

A number of packers, at the instance of the department, have changed from wet to dry packing. Many have reported that they have had uniformly good results with dry-packed poultry but have been having trouble with ice-packed birds. A number who have compared the two methods report that they will introduce the dry-packing system in all their branch houses at once.

### Provide Shade for Chicks

Much of the loss of young chickens in summer months can often be traced to the lack of shade, says T. E. Quisenberry. If the young stock is not protected from the hot sun on a summer's day the chicks are certain to be dwarfed to a great extent and deaths are sure to result.

The drinking vessels should be kept in the shade and the fowls given protection from both sun and rain. If you can't provide for a cornfield near the poultry yards, then sow some sunflower seed, set out some fruit trees,

or place grape vines around the fences surrounding the poultry yard, or provide shade in some other way that will not detract from the appearance of your place. You had just as well grow a crop of grain or a crop of fruit on land on which you raise poultry as not. If you can't provide shade in any other manner, drive some stakes and cover them with a light frame, and on this tack some burlap, canvas, or something of this nature. This will give the birds a comfortable resting place on a hot summer's day.

### Pertinent Pointers for Poultrymen

More eggs and poultry will save beef and pork.

Never allow the mother hen to range with the young chicks until they are at least two weeks old.

Enormous numbers of young chicks are lost each year by allowing them to run in the wet grass during their early life.

Early hatched pullets produce more winter eggs and return the greatest profits. Early hatched chicks have the advantage of a longer and better growing season. Hot weather retards the growth of young chicks.

Never allow the mother hen to range with the young chicks until they are at least two weeks old. Enormous numbers of young chicks are lost each year by allowing them to run in the wet grass during their early life.

House the flock comfortably; keep houses dry and well ventilated, allowing plenty of fresh air and sunshine. Remodel the old house—stop cracks and eliminate drafts. Give hens a good straw litter to scratch in during the winter months.

Shade and range for chickens will give the best results. Hot sun retards growth. There should be trees, corn, sunflowers, etc., on the range to provide shade during the hot summer months. Chickens on range pick up much of their food.

Green feed is excellent for poultry and can be substituted for a considerable amount of the grain ration. Grow oats, vetch, and rape for summer use; cabbage and mangel beets for winter. Store cabbage and beets in a dry room or bury in a pit covered with straw and earth.

Greatest returns are procured by feeding sour milk or buttermilk to both young and old birds. Results in greater gains. Will require less grain. Produces more eggs. Increases the profits. Makes a home market for waste by-products.

Save eggs during April and May for winter use by preserving in water-glass. Mix nine quarts of water, boiled and cooled, with one quart of waterglass. Will preserve 15 dozen eggs. Place the solution in a five-gallon jar. Store in cool place for winter use.

# RAISE EVERY CHICK

More chickens this year than ever before. More for your table, more for market.

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### VEGETABLE CALENDAR

Continued from Page 277

able to make extensive plantings. Some of the plantings we made this last month have not been moving very fast, due to the cold weather, but with a few sunny days our peas, onions, carrots, etc. will make progress.

The birds are in some gardens very troublesome. A good plan is to put up scarecrows or stretch a few lines of black cloth along the rows. We have seen wire netting small mesh, also used to advantage. It is generally only in the early stages that the peas are attacked. The slugs may also become active and it will therefore be necessary to look for these pests at night by the help of a flash light.

#### Potatoes

It does not appear to be practical to plant earlier than this month. Of course we are getting many surprises in climatic changes, and it is best not to take too many chances. Play safe. Those who have a fairly large garden should plant this crop. Contrary to the statement we saw recently in a newspaper from an "expert" to the effect that "it can be grown anywhere," we must contradict that right now. The potato thrives best in a fairly rich sandy loam, and it would not be advisable to plant it in heavy adobe such as is often found in many parts of Northern California. We have seen it tried and there was a very poor yield, the tubers also being very much deformed. It was waste of time, seed, and money. When preparing the ground apply artificial manure or preferably that from the farm yard. Have the ground deeply trenched and plant the tubers in rows four to six inches deep, 12 inches apart in the rows, which should be 30 inches apart. It is always a good plan to start the tubers in a shallow box near a window or in a well lighted room. This method is called sprouting and in two weeks or so they will be ready to plant out and will have a good start. Good sized tubers can be cut up into two or three sections but always contrive to leave at least three "eyes" or sprouts to a section. When buying seed tubers insist on having them sound and free from disease and certified to that effect, as this will save you from much trouble later on. Among the earlier we would advise Early Rose, British Queen and Irish Cobbler, all three reliable and good for table or market purposes. For the main crop secure your seed tubers as soon as possible of Oregon Burbank and Great Divide. The last named is capable of withstanding heat and drouth; the vines are extremely vigorous and the tubers are thick and round in form, the flesh being pure white and of excellent quality. Five to six sacks of tubers will be required to plant an acre, and an average yield would be 300 to 400 bushels per acre. It is always a safe plan to dip the tubers in a solution of formalin which will prove a safeguard against fungoid disease. This applies to the seed potatoes even though they have been certified. Another important point to remember is not to plant potatoes on the same plot as occupied by this crop last year.

#### Peas

The early varieties are now several inches above the ground in many sections around Hayward and San Leandro where the San Francisco market gets its early peas and the crops are looking very healthy after the rains. It will be necessary to keep the cultivator busy on the ground. Make another successional sowing of Little Marvel American Wonder and Abundance.

#### Carrots

It will pay to prepare the ground very carefully for this crop. Work in plenty of good fertilizer and have the soil deeply trenched. Endeavor to keep your soil loose, and you will be amply repaid, especially when growing the deep rooting varieties. Make sowings of French Forcing, Oxheart, Chantenay and Long Orange. The latter variety should not however, be grown on very heavy soils, but on light soils it is unexcelled and is a very heavy cropper. Sow the seed very sparingly and as soon as the seedlings are well above ground thin to four inches apart. Sow in drills half an inch deep and 18 inches apart.

#### Cabbage

Plants of the varieties sown in Jan-

uary should now be ready to plant out, and sturdy specimens only should be selected and planted 18 inches apart in rows two feet apart. Firm planting is essential, and they should not be allowed to suffer for want of water.

#### Lettuce

On well prepared ground sow seeds thinly in rows one-quarter of an inch deep, 18 to 24 inches apart, of the following varieties: May King, very early, forming hard, crisp heads; Los Angeles, a popular market and all round sort; and White Paris Cos, often called Romaine, is very tender when well grown and blanched. For a good poultry feed sow a quantity of Morse's Chicken Lettuce, a new introduction which grows three to four feet high furnishing plenty of green feed. We consider this will fill a long felt want.

#### Onions

These should be well above the ground and thinning should be carried out this month. Thin the seedlings to six inches apart and plant out the surplus about the same distance apart on fairly rich soil in rows 18 inches apart. Keep the cultivator busy between the rows when conditions permit. Onion "sets" may still be planted also.

#### Radishes

Make sowings of Early Scarlet Turnip, French Forcing, and Halflong. They will give best results on a rich light soil, and if simply grown for home use small but frequent sowings should be made.

#### Turnips

On fairly rich well prepared soil sow Early Snowball and Purple Top Flat Dutch, both good table varieties. For those who like turnip greens the variety, Seven Top, should be grown; the root is too small to use. As soon as the seedlings are well above the ground they should be thinned to six inches apart. The seed should be sown very sparingly in drills one-half inch deep, 18 to 24 inches apart.

#### Beet, Sea Kale or Swiss Chard

This makes a very useful spinach and is very popular, as it can be frequently cut. Sow seeds in rows thinly, 24 inches apart. Large White and Giant Lucullus are both good varieties.

#### Tomatoes

Make up a hot-bed by placing horse manure and leaves in a large box or wooden frame work about two feet deep, and on this place a good covering of soil and sow the seeds of these varieties broadcast: Chalks' Early Jewel, Victoria Whole Salad and San Jose Canner. They may also be sown in boxes placed in a warm window. It will be necessary to cover the frame with cheese cloth until all danger of frost is over, and we shall give instructions next month regarding planting out and general cultural hints. In the meantime have a fairly large area put in shape for early planting. There will be a large demand for this crop this year.

#### Strawberries

Planting of these should be completed this month, and all runners removed from the parent plants.

#### Raspberries

Planting and general renovation should also be completed on these without delay. Tie up all canes to the fence separately so that all can get plenty of sunlight during the growing season. The best varieties are Superlative and St. Regis, the latter bearing for four months of the year large berries of excellent quality. The ground between the rows should be well manured. Plant one and one-half to two feet apart in rows three feet apart.

### QUESTIONS AND ANSWERS

Continued from Page 265

ounces, pearl ash, or potash, one-half ounce, soft water, four gallons. Heat and skim. Cover bottom of clean barrel with salt half an inch and after hams have been thoroughly rubbed with salt and saltpeter pack in the hams and cover with pickle. Keep weights over the hams to force underneath the brine."

### CHISEL TEETH

Let meatless and wheatless be kickless and whineless  
Lest all days to come be soulless and spineless.



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8151—Ladies' Shirt Waist. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The front and back are gathered to shaped yokes; the sleeves may be long or three-quarter length.

8112—Child's Dress. Cut in sizes 4, 6, 8 and 10 years. This is a simple little dress having a waist without fullness and closing at the center front; the straight two-gored skirt has box plait.

8118—Ladies' One Piece House Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The dress is cut in one piece, has the new collar, flare cuffs and triangle pockets.

8712—Ladies' Two Gored Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. This two-gored skirt shows the feature of the new one-sided effect in the double inverted plait at the left side.

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## Household Department

### TO N. S., WHO DIED IN BATTLE

I knew you glad to go; I envied you.  
To pour the glory of your young life forth  
In one libation—what more happy lot?  
Be spared the slow, sad drip of dreams and hopes,  
Of loves and memories, that leaves us dry  
And bitter, seared and bleared with creeping age—  
Who would not die in battle? Life cut short?  
Nay, blossomed in a moment, rich with fruit,  
Blossom and fruit together, which the years  
Might never ripen, uneventful years  
Of nursery-gardening one small, precious self,  
Which seeds and dies and none knows why it was.

I knew you glad to go; you knew not why—  
The sting of high adventure in your blood,  
The salt of danger savoring nights and days;  
And in your heart the wave of some unknown  
Deep feeling shared with comrades, that bore you on  
The tideways that the coward never knows,  
Nor he who hoards his life for his own ends.

O happy boy, you have not lost your years!  
You lived them through and through in those brief days  
When you stood facing death. They are not lost:  
They rushed together as the waters rush  
From many sources; you had all in one.

You filled your little cup with all experience,  
And drank the golden foam, and left the dregs,  
And tossed the cup away. Why should we mourn  
Your happiness? You burned clear flame, while he  
Who treads the endless march of dusty years  
Grows blind and choked with dust before he dies,  
And dying goes back to the primal dust,  
And has not lived so long in those long years  
As you in your few, vibrant golden months  
When like a spendthrift you gave all you were.  
—Anon, in The Atlantic Monthly.

### A STORY OF THE PLAINS

**J**OHAN BOYNTON rode swiftly out of the little yard surrounding his log home, turning a moment in his saddle to wave a last good-bye to the young wife and yellow haired baby on the rude porch. "Poor little woman," he reflected, with a swift pang, "how young and slender to be left alone all day in this lonely place. Keep up your courage, dear," he called cheerily back to her, "I'll be back by sundown sure!"

Alice stood there, her hand shading her eyes, and watched the rapidly disappearing figure until it passed beyond her range of vision in the distant blue shadows of the prairie. Then with a forced gaiety she picked up the baby clinging to the skirt of her blue gingham dress, and tossed it upward with her slender young arms, that the dreadful silence might be broken by the child's gurgling laughter.

"We must work hard today, Mary Ashley," she cried, when she and her burden were breathless from their play, and the rosy baby clung crowing round her neck. "We must bake, and sweep the house, and cook something good for supper, so that father will see how much we've done when he comes home tonight." She looked lingeringly again across the broad prairie, then went resolutely into the house to try to forget her anxiety in work.

Alice Stone had been but a girl of twenty when she married her strong pioneer husband and went away out west with him, but girls grew swiftly to womanhood there in the early fifties, and in the three years since they had taken up their claim, the young wife had learned an endurance she had never dreamed of in her New England home. It may be that some of the silent strength of the prairies

had become a part of her, as their gift to the girl who had learned to love even while she feared them.

The cause of her fear was not the nervous apprehension of a lonely woman; it skulked in war paint and feathers in hidden ravines, and emigrant trains of late had reported hair-breadth escapes and a few horrible encounters on their journey across the plains. Well might the young wife grow faint as she watched her husband start out on his lonely ride of many miles with only his six-shooter to protect him.

The morning passed slowly away, while Alice worked feverishly, though conscious, in spite of all her efforts, of an anxiety that gnawed within her like a pain. After their simple dinner, which she prolonged as far as it was possible, she put the little Mary Ashley on the porch to play with a cherished rag doll, while she finished her duties in the kitchen. It was not long before she heard the child's voice calling her, and when she came to the open door, "Mummy," the little girl was saying, "see all the smoke way over dere."

Alice followed the tiny pointing finger with her eyes, and a sickening wave of feeling swept over her, so painful that she felt she must cry out for relief. But immediately her motherhood asserted itself and came to her rescue. "No, dear," she answered, with white lips, "that is not smoke, but dust. Some one is passing by, probably an emigrant train. Yes," she repeated, desperately to herself, "of course, it's an emigrant train."

Though all the time her poor heart knew that that was not the regular road, and that white men never dared to deviate from the course. In the fullness of her love, it never even occurred to her to wonder if the Indians would discover her house, as they had those of other settlers. The stories she had heard of the unprotected women and children in these tragedies had their sequel in the pistol she kept loaded night and day, as the final terrible refuge for herself and her child, and she knew that if the time ever came, she could use it. But today, the one thought that beat against her brain was, "They are going in the direction that John went; oh, will he have heard, will he have heard?"

No victim of the inquisition ever suffered more acute torture than did Alice Boynton that bright July day, and she never lost the lines which suffering engraved around her eyes and mouth. Had it not been for the child, she felt that she would have fled alone across the prairie, rather than go on enduring this racking suspense, but being a mother, she played a mother's part, and smiled and talked with a wild despair in her eyes, of which the little Mary was mercifully unconscious. As evening drew near, she began to dread the sight of the sunset glow in the western sky, knowing that in spite of herself she would strain her eyes for the dark figure of a horse and rider outlined against it. But she never threw aside for a moment the part she had set herself to play. She dressed the little girl in a ruffled white frock, and curled the bonny yellow hair in the way her father liked best. She chose the daintiest of her summer gowns from her own slender wardrobe, and put it on carefully, but the contrast between the pink dimity and her own white

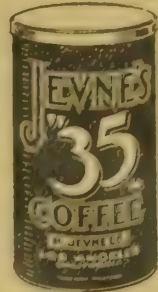
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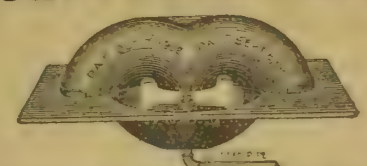
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face when she looked in the glass, made her turn quickly away, and she knew that she was trembling.

"Now, Mary Ashley," she said to the baby, happy in its unaccustomed finery, "we'll go and make some waffles for father's supper, for those are what he likes best. No, dear, don't go out on the porch now." Alice would not let herself see what she had known for an eternity it seemed to her — that the sun had hung its last red banner in the distant sky, and that twilight was stealing softly over the weary land. She dared not look over into the empty, empty West.

The table was set with her wedding silver and flowered china, and a little cluster of pink roses from a slip she had brought from her home garden, made a bright spot of color in the center. The waffles waited in tempting piles, and at last Alice could deceive herself no longer. She went to the door, holding her child tightly in her arms, regardless of the little ruffled dress.

Around her stretched the boundless prairie as far as the eye could reach. The last faint color had died out of the western sky, and great masses of clouds were forming above the horizon. A tiny breeze that had stayed in with the dusk, lightly touched the hair on her temples. The baby gazed silently with her, its blue eyes wide and bright. They stood thus for some minutes, then Alice turned back to the room where the silver and roses on the little white table gleamed faintly in the twilight, and shut the door behind her. She could only wait, and pray to the God of the white men.

Meantime John Boynton had been riding rapidly over the prairie in the direction of Ore Creek, where he was to see a man in regard to the exchange of some cattle. He reached the town about noon, and going to the one hotel on the main street, gave Bonny, his good little Mexican pony, her dinner of oats to eat from the curbing, while he went in search of his man. He found him among the loungers in front of "The Last Chance," none the better for having spent most of the morning inside with some boon companions, and Boynton had difficulty in getting him to talk business rationally. He finally persuaded him to join him at dinner in the hotel and under the stimulating influence of what passed as good cooking, the matter was settled to their mutual satisfaction.

Concluded next week

#### HOW TO USE RICE FLOUR

Written for California Cultivator by  
Mrs. E. G. Buerkle, Whittier

These recipes I made myself and am using them every week in my home and we like them very much.

#### Victory Bread

One pound rice flour, scalded with one quart milk or milk and water. When cool add one pint warm water, one large tablespoon salt, two tablespoons sugar, one compressed yeast cake dissolved in a little warm water. Stir in white flour to make a sponge and let rise over night. In the morning add flour to knead and knead well, let rise to twice its bulk and put into pans. When light, bake. Makes four large loaves.

#### Another

One-half or three-fourths pound rolled oats or oatmeal scalded with one quart milk or water. When cool add one large tablespoon salt, one-fourth cup sugar and one-half cup molasses. one compressed yeast cake dissolved in lukewarm water, one quart warm water and flour to make sponge, then

proceed as in above recipe. Makes five large loaves.

#### Liberty Cake

Two cups white flour, one cup rice flour, one cup sugar, one-half teaspoon salt, two heaping teaspoons baking powder, one-half cup seedless raisins, one large tablespoon shortening, two eggs and one cup milk. Sift together flour, rice flour, sugar, baking powder and salt, add shortening and mix well with the hands, then add raisins. Break eggs in a bowl and beat, add milk and add to flour mixture. Will make one loaf and eight drop cakes in muffin tin.

#### War Muffins

Two cups wheat flour, one cup rice flour, one tablespoon shortening, two heaping teaspoons baking powder, one teaspoon salt, two and one-fourth cups milk or milk and water. Sift together flours, baking powder and salt. Add shortening and mix well, add milk, beat until smooth and bake in muffin tins. Makes 16 muffins.

I use milk instead of shortening in making bread for we have a cow and have plenty of milk. If all water is used a large tablespoon of shortening added to the batter will improve the bread.

A Pasadena baker told me that if when using rice flour in bread making it is first scalded a much finer grained bread will result. The unscalded rice flour makes a coarse grained bread.

#### USE OF RYE FLOUR

Until March 3 rye flour may be used in making victory bread. After that date it will be placed upon the same basis as wheat, because rye flour is now being shipped to the allies.

Bread made of graham flour or whole-wheat flour may be called victory bread, as this flour effects more than a 20 per cent saving over ordinary wheat flour.

Beginning February 3, bakers must use at least five per cent of other cereals in all bread baked by them, and this amount must be increased as rapidly as possible until, by February 24, they are using at least 20 per cent of other cereals to 80 per cent of wheat flour. No baker, however, will be entitled to advertise his product as Victory Bread until he has reached the 20 per cent ratio.

The list of cereals to be used in baking Victory Bread has been made as varied as possible in order that each baker may be able to obtain a sufficient supply of one or more of them in his own locality at reasonable prices.

It is hoped that whenever possible cereals locally produced will be used in order to reduce transportation.

Any baker who finds it impossible to secure these cereals through ordinary trade channels is asked to appeal to the federal food administrator in his own state, who, through the various departments of the food administration in Washington, will aid in obtaining a supply.

#### USING RYE, BARLEY AND OAT MEAL

Written for California Cultivator  
By Mrs. Clara Brons, Fresno

You asked in your last paper for tested recipes of wheat substitutes. I will send some that I have been using that are very good.

#### Rye Bread also Barley

One cup sweet milk, scalded and cooled, two cups lukewarm water, five cups rye or barley flour, 1½ cups sifted white flour, one tablespoon of but-



ter substitute, melted in milk, one tablespoon salt, one cake yeast.

Dissolve yeast in liquid; add 2½ cups of rye or barley flour or enough to make sponge. Beat until smooth; when light add white flour and rest of barley flour. Knead or beat at least five minutes. Let rise, work into small loaves, cut two long gashes lengthwise of loaves, let rise until double their size; bake 45 minutes.

#### Oat Meal Bread

One cake yeast, one-half cup lukewarm water, two cups boiling water, two cups rolled oats, one-quarter cup brown sugar, two tablespoons butter substitute, four cups sifted flour, one teaspoon salt. Pour two cups boiling water over rolled oats, cover and let stand until cool, or lukewarm. Dissolve sugar and yeast in one-half cup lukewarm water, add shortening, then add this to oat meal and water. Add one cup flour or enough for sponge. Beat well, leave until light. Add salt and rest of flour. Knead well. Place in greased bowl, cover, let rise until light. Make into loaves and let rise. Bake in a hot oven 45 minutes.

#### Gems from Barley or Rye

One cup sour milk, two tablespoons brown sugar, one egg, one tablespoon shortening, one-half cup rolled oats and enough barley or rye flour to make a stiff batter, one-half teaspoon soda. Bake in greased gem pan in hot oven.

For these heavy flours I find that sour milk and soda are a great deal better than baking powder and sweet milk.

#### WITH MILO AND EGYPTIAN MEAL

Written for California Cultivator  
By Laura F. Kimball, National City  
"Less" Johnnie Cake

As you see this is flourless, cornmealless, sugarless and fatless. Thought it might help to save the wheat, etc.

One and one-half pints milo meal, three tablespoons molasses, one egg. Stir until egg is beaten. One cup sour milk, one teaspoon soda, one teaspoon salt.

Bake in a sheet and cut in squares.

We use the brown milo. Look it over carefully and grind in coffee mill. I also send mother's recipe for Egyptian brown bread which we have used for over 30 years; you can use Egyptian meal, either white or brown, kafir corn, or milo. I have used them all, but brown milo or brown Egyptian is much the best we think. (I have not had feterita yet.) This recipe uses wheat but saves a third as you see.

Can rice-bran be used like wheat-bran in cooking?

#### Egyptian Brown Bread

One quart Egyptian meal, two quarts wheat flour, two-thirds cup molasses, three pints sour milk, three teaspoons soda, three teaspoons salt. Bake in a loaf (or steam if you wish). I sifted some oil-cake and found it takes the place of suet in Johnny cakes, etc. I use chicken oil in place of butter in cooking.

#### WAR BREAD

Written for California Cultivator  
By Alice Ames, Fallbrook

I am sending two favorite war bread recipes. One is Economical Brown Bread which we like very much and which we think is also delicious cut in slices and buttered to carry for lunches.

#### War Brown Bread

One cup corn meal, one cup graham flour, one cup rye flour, one tea-

spoon salt, one tablespoon soda, one teaspoon baking powder. Sift all together and add to mixture one and one-half cup soaked dried peaches, one-half cup raisins and one-half cup of molasses. Add water or milk to make a thick batter, turn into a buttered mould and steam one and one-half hours. Finish in a hot oven 15 minutes if preferred.

#### Barley Muffins

One cup barley meal, one cup flour, one tablespoon sugar, one tablespoon butter substitute melted, one teaspoon salt, two heaping teaspoons baking powder and one cup of milk or water. Mix and sift dry ingredients; add milk gradually, and butter, bake in muffin pans in hot oven 25 minutes. Rye or milo meal may be substituted for barley meal, and we prefer them without sugar.

#### GOOD THINGS FROM BARLEY, CORN MEAL AND BRAN

Written for California Cultivator  
By Z. U. Lescher, Carpinteria

#### Barley Nut Loaf

One egg, one cup ground walnuts, one cup sweet milk, one-third cup sugar, two and one-half cups barley flour, one teaspoon salt, three teaspoons baking powder. Make into a

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We must save, serve and sacrifice.

loaf, bake in a moderate oven three-fourths of an hour.

#### Corn Bread—or Johnny Cake

One egg, one-third cup sugar, two cups sour milk, two cups corn meal, one cup rolled oats, one teaspoon soda, salt, soak the oats in the sour milk an hour or so before mixing.

#### Bran Muffins

One egg, one-third cup sugar, one cup sweet milk, one cup bran, one-third cup flour, two-thirds cup corn meal, one tablespoon vegetable oil, two teaspoons baking powder, a little salt. Bake in gem pans about 20 minutes.

#### OAT MEAL BREAD

Written for California Cultivator  
By Mrs. J. F. Cox, Puente

One yeast cake, two cups and a half of potato-water. One quart wheat flour, one large potato (use more or less as one wishes) mashed, one tablespoon sugar, one scant tablespoon salt. Put yeast to soak in lukewarm water then add a little flour or potato and let raise until light. Grind the oat meal in a food grinder. Add salt and sugar then scald with potato-water. Let cool until just warm then add yeast and the wheat flour. Knead and let rise then put into loaves in pan, let rise then bake one hour. This makes two large loaves or three small ones. Better than wheat bread.

If children are inclined to be constipated they should have plenty of laxative foods. These are cereals, particularly oatmeal; the coarser breads, such as graham and whole wheat; fruit or fruit juice, particularly oranges and prunes; and vegetables like string beans, asparagus and spinach.



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# The Garden Beautiful IN CALIFORNIA

by Ernest Branton

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Cultivator Pub. Co., 115 No. Broadway  
Los Angeles, Cal.



## Los Angeles Market

Los Angeles, Feb. 27, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery.....50

## CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....30  
Domestic Swiss .....34

## EGGS

Exchange quotations. Prices to re-  
tailers 2 to 4 cents higher.  
Fresh extra .....35  
Pullet .....34  
Case Count .....33

## POULTRY

We quote to producers:  
Food administration orders hens sold  
for producing purposes only.  
Broilers .....36@38



# NORWALK TIRES

## 'Known by Their Mileage'

Norwalks have done won-  
ders in raising the mileage  
standard. 10,000 miles of  
service was formerly consid-  
ered quite a record for tires.  
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20,000, 25,000 miles and even  
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Ferguson Co.

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San Francisco

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seasoned, and they FIT.

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Angeles Honey Company will  
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Los Angeles, Cal.

Fryers .....	32
Roasters, 3 lbs. and up .....	30
Ducks, lb. ....	25@27
Roosters, old .....	18
Turkeys .....	27@38
Geese, lb. ....	20

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning Febru-  
ary 27, by the Cudahy Company.

Cattle—	
Beef steers, av. 1000-1100 lbs. ....	10.00@10.50
Heifers, good .....	8.00@8.50
Cows, good .....	8.00@8.50
Canners .....	3.50@4.00

Hogs—	
Av. 125 lbs. ....	13.50@14.50
Av. 150 lbs. ....	14.50
Av. 175-299 lbs. ....	15.75
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent. ....	10.50@11.00
Prime wethers .....	10.00@10.50
Lambs .....	14.50@15.00
Yearlings .....	10.50@11.00

## POTATOES

Wholesale selling price:	
Oregon Early Rose .....	2.75
Northern Burbank, cwt. ....	1.60@1.90
Russets .....	1.90
Salinas .....	1.85
Sweet, sk. ....	4.50@4.75

## ONIONS

Wholesale selling price:	
Brown .....	2.25
White .....	3.00
Garlic .....	6

## VEGETABLES

Wholesale prices:	
Artichokes, doz. ....	90@1.15
Beans—String, lb. ....	25
Limas, lb. ....	25
Ky. Wonder .....	25
Beets, sk. ....	2.25
Brussel Sprouts, lb. ....	12
Cabbage, lb., 3¼; sk. ....	2.20
Red, lb. ....	4¼
Carrots, doz. ....	30
Cauliflower, doz. ....	75
Celery, doz. ....	80
Cucumbers—Hothouse, doz. ....	1.25@2.50
Egg Plant, lb. ....	20
Horseradish, lb. ....	15
Lettuce, doz. ....	30
Leeks .....	30
Mint, doz. ....	40
Mustard, doz. ....	20
Onions, green, doz. ....	25
Oyster Plant, doz. ....	40
Peas, Tel. lb. ....	15@16
Peppers, Chili, lb. ....	20
Parsnip, doz. ....	40
Parsley, doz. ....	35
Radish, doz. ....	25
White .....	35
Rhubarb—Strawberry .....	1.35
Romaine, doz. ....	40
Spinach, doz. ....	30
Squash—Crookneck .....	70@75
Hubbard, lb. ....	3
Tomatoes, lug. ....	2.25
Turnips, doz. ....	30
Watercress, doz. ....	35@40

## FRUITS

Wholesale prices:	
Apples—Bellflowers .....	1.75
Jonathan .....	1.80@2.25
King David .....	1.75@2.00
W. W. Pearmain .....	1.60@2.25
Spitzenberg .....	2.40@3.00
Y. Newton .....	1.45@1.75
Avocados, doz. ....	5.00@7.00
Bananas, lb. ....	5
Pears, Winter Nellis, lug .....	2.00

## CITRUS

Lemons, 4.25@5.25; juice .....	2.50
Loose .....	4.00
Oranges—Navels, bx. ....	3.00@6.25
Grapefruit .....	3.50
Limes, basket .....	75
Oranges—Navels, bx. ....	3.50@6.25
Tangerines, lug. ....	1.75

## DRIED FRUITS

These are not prices to producers but  
prices made by wholesalers to retailers.  
(20-lb. bx., faced, 50s, ¼c less). Ap-  
ples, evaporated, 50s, 16; extra ch., 16½;  
apricots, ch., 18; extra ch., 18½; fy., 19;  
pears, 12½; peaches, ch., 12; citron, 30  
lb.; lemon peel, 25; orange peel, 25;  
prunes, 20-30s, 17; 30-40s, 14; 40-50s, 13½;  
50-60s, 13; 60-70s, 10½; 70-80s, 10; 90-  
100s, 9.  
Figs—Calimyrnas, bx., 2.25; black, 25-lb.  
bx., 3.00; white, 3.00; 10-lb. Adriatic layer  
figs, 1.75.

## NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.	
I. X. L. ....	24
N. F. U. ....	23
Nonp. ....	26
Peanuts, raw .....	17
Pecans, lb. ....	20@21
Walnuts—Cal. Walnut Growers' Associ- ation named prices Oct. 1:	
No. 1 Soft Shell, lb. ....	20
No. 2 Soft Shell, lb. ....	16
Budded, Diamond Brand .....	24
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....	21
Prices delivered in East 1½c higher.	

## HONEY

Prices of wholesaler to retailer:	
Extr. W. W., lb. ....	20
Comb. W. W. case .....	5.00
Light Amber, case .....	4.75

## RICE

Wholesale quotations:	
Cal. ....	\$7.50
Broken .....	5.00@6.00

## BEANS

These are prices made by wholesaler to retailer.	
Lady Washington .....	13.00
Limas .....	14.00
Pinks .....	9.00
Manchurian Reds .....	9.25
Baby Mex. ....	9.00
Garbanzos .....	10.00
Small Whites .....	13.00
Blackeyes .....	9.50
Teary .....	10.00@11.00
Lentils .....	25.00

## HAY

Quotations by Nichols-Loomis Com-

pany. Prices to growers f. o. b. L. A.  
Carlots:  
Tame Oat .....30.00@32.00  
Volunteer Oat .....18.00@20.00  
Wheat .....26.00@29.00  
Barley .....28.00@31.00  
Alfalfa .....28.00@30.00  
The Alfalfa Growers' Association of  
Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where  
the \$1.50 freight rate applies, and \$29.00  
f. o. b. where the \$2.50 freight rate ap-  
plies.

## GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.	
Alfalfa Meal .....	2.20
Alfalfa Molasses .....	2.30
Barley, Rolled .....	3.90
Barley, Recleaned Whole .....	3.95
Barley Hulled .....	4.55
Beet Pulp .....	2.25
Bran, (Light) 65 lb. sk. ....	1.95
Cocoanut Meal .....	2.75
Cottonseed Meal .....	3.27½
Corn, Yellow .....	4.15
Corn, White .....	4.60
Corn, Cracked .....	4.20
Corn, Egyptian .....	4.15
Corn Feed Meal .....	4.25
Mixed Feed (80 lb. sacks) .....	2.12½
Milo, Maize, Field Run .....	3.90
Oat Chop .....	1.90
Oats, White .....	3.90
Oats, Rolled White .....	4.05
Oats Hulled .....	5.20
Oats Rolled Chicken Groats .....	5.40
Oats Eastern Red .....	3.90
Oilcake Meal .....	3.85
Red Dog .....	2.65
Rye .....	4.40
Blood Meal .....	5.00@5.10
Bone, Green .....	2.75@2.85
Bone, Dry .....	2.95@3.05
Buckwheat .....	5.00@5.10
Canada Peas .....	6.40@6.50
Charcoal, 50 lb. sk. ....	3.40@3.50
Clam Shell .....	70@95
Grit Granite .....	75@85
Hemp .....	5.50@5.60
Oyster Shell .....	1.35@1.45
Red Millet .....	4.65@4.75
Sunflower Seed .....	5.15@5.25
Soya Bean Meal .....	3.50@3.60
Scratch Feed .....	4.20@4.30
Scratch Gritless .....	4.40@4.50
Vetch .....	5.10@5.20
Rice Bran, ton .....	40.00
Middlings, ton .....	45.00
Rice Polish, ton .....	60.00

## San Francisco Markets

San Francisco, Feb. 26, 1918.

## BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:  
Two-pound squares, parchment wrap-  
per, ½c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.

Dairy Exchange quotations, lb.:  
Fresh extras .....50½

## CHEESE

Dairy Exchange quotations:	
Cal. Flats, 25½. Y. Am. ....	27½
Extras .....	42
Jack cheese, full cream .....	26@27
Half skim .....	14@17

## EGGS

Extras .....	45½
Firsts .....	41
Selected Pullets .....	40

## POULTRY

We quote from producers, lb.:  
The food administration forbids sale of  
hens for meat until after Apr 1 30.  
Broilers—1 to 1¼ lbs., 50; 1¼ to 1½  
lbs., 45; 1½ to 2 lbs., 40@42; 2 to 3 lbs.,  
35@40.  
Roosters ..... 24@38 || Squabs, doz. .... | 3.50@5.00 |
Ducks .....	25@30
Geese .....	20@25
Belgian Hares, live, lb. ....	23@25
Turkeys, dr., 34@36; live .....	28@30

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾c  
more.  
Steers, lb., 9½@11; undesirable, 6½@  
8½; cows and heifers, 7½@8½; undesir-  
able, 4½@6½; calves, 7½@10.  
Sheep—Lb. gross weight: Fat, unshorn  
wethers, 12½@13; ewes, 10@10½; lambs,  
yearlings, 13½@14½; milk, 15@15½;  
shorn sheep, 1½@2 less.  
Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 14½; 140 to 175 lbs., 15½@15¾;  
175 to 300 lbs., 16; 300 to 400 lbs., 15½.

## POTATOES

Wholesale selling prices at wharf, cwt.:	
Oregon Burbanks .....	1.50@1.75
Nevada .....	1.40@1.50
River .....	1.25@1.50
Yakima Gems .....	1.40@1.75
Sweets .....	4.75@5.00
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.75@2.00; high top, 1.50@1.75; Garnet Chile, 2.75@ 3.00; White Rose, 2.00@2.50; Early Jack- son, 2.50@3.00; inferior and off stocks at lower prices.	

## ONIONS

Wholesale selling price on wharf, cwt.:	
Australian Brown .....	1.50@1.60
Bermudas .....	2.75@3.00
Garlic, lb. ....	3½@4½

## VEGETABLES

Wholesale selling price.	
Artichokes, doz. ....	35@70
Jerusalem, 20 lb. bx. ....	75
Asparagus, lb. ....	15@30
Beets, sk. ....	1.25@1.35
Brussel Sprouts, lb. ....	4@6
Carrots, sk. ....	75@1.25
Cauliflower, cr. ....	1.00
Celery, Delta, cr. ....	1.75@3.25
Cucumbers, doz. ....	1.25@1.75
Egg Plant, lb. ....	10@12½
Endive, lb. ....	25@30
Lettuce, cr., Southern, iced .....	1.25@1.50
Uniced, 65@90; Imperial .....	1.50@1.75

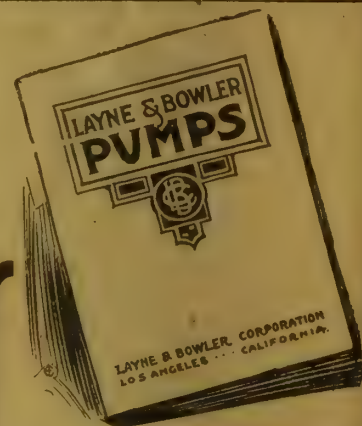
Onions, green, bx. ....	1.00@1.50
Parasips, sk. ....	1.25@1.60
Peas, lb. ....	7@16
Peppers, Bell, lb., 15@22½; Chili, 15@17½	
Pumpkins, sk. ....	85@1.00
Rhubarb, bx. ....	1.75@2.00
Squash—Marrowfat, sk. ....	85@1.00
Cream, lug .....	1.00@1.15
Hubbard, sk. ....	90@1.15
Tomatoes, cr., 65@85; Mex. ....	2.00@3.00
Turnips, sk. ....	50@75

## FRESH FRUITS

Apples—Spitzenberg, 1.25@2.65; Red  
1.25@1.50; Newton Pippins, 1.15@1.75;  
Pears—Winter Nellis bx., 2.00@2.75;  
winter pears, lug, 1.50@1.75.  
Bananas, Hawaiian, lb. ....2.25@2.50  
Loquats, cr. ....2.25@2.50  
Pineapple, doz. ....4.00@5.00  
Citrus Fruits—Lemons, bx. according  
to size, fy., 3.00@6.00; ch., 2.50@6.00  
lemonettes, 1.50@2.25; grapefruit, 1.75@  
2.50; Imperial, 2.75@3.25. Oranges—Br.  
Navels, fy., 3.00@6.00; ch., 2.75@4.50; do  
culls, 2.25@2.75; Mandarins and Tanger-  
ines, ½ bx., 2.50@3.00.

## DRIED FRUITS

Not producers' prices but prices of  
wholesaler to retailer.  
Peaches—Unpeeled, lb. standard, 9½;  
choice, 9½; extra choice, 10; fancy, 11.  
Figs—In 50-pound boxes, per pound:  
White Adriatic, standard, 8½; choice,  
9½; extra choice, 10½; fancy, 11½; Cal-  
ifornia, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 13½;



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Nails, new base .....	\$ 4.60
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100 School Desks, each .....	\$ 1.50
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200 Bath Tubs, new, each .....	\$19.00
200 Sinks and Strainers, new .....	\$ 4.50
100,000 Feet Galvanized Iron .....	\$ .98
400 Vitreous Toilets, new .....	\$17.50
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3,000,000 Feet Lumber .....	\$13.00 to \$20.00
100 No. 558 Basins, complete, new ..	\$ 9.00
200 Lockers, each .....	\$ 5.00
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Method. No Expense Excepting First  
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T. H. McDonald Gun Co. VICTORVILLE  
CAL.



ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 80s, 7½; 90s, 8; 40s, 8½; 30s, 9½.  
Apples—In 50-pound boxes, lb.: Fancy 15½; ex. ch., 14½; ch., 14½.  
Pears — Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-oz. 45 to cs, 5.25; ch., 16-oz. cartons, \$3.00 for 36s; do, 12-oz. cartons, 45s to cs, 3.10. In bulk: Sun Maid, 1.75; fy., 1.90; ch., 1.75.  
Sulphur-bleached Thompson, extra fy., 5.37½; fy, 5.12½; ch., 4.87½; soda-bleached, 4.75.  
Loose: One-crown, 4.15; 2-crown, 3.40; 3-crown, 3.65; 4-crown, 3.20.

**NUTS**  
Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. X. L., 19½; Ne Plus, 18½; Drakes, 16; hard shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts, Va. ....15  
Pecans, lb. ....19@20  
Pine Nuts ....20@22

**HONEY**  
To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

**BEANS**  
Jobbers' prices, cwt., recleaned:  
Limas .....13.50  
Bayous .....9.25@9.50  
Small Whites .....13.00  
Large Whites .....12.40@12.50  
Mexican Reds .....8.50  
Blackeyes .....8.50  
Pinks .....8.40  
Red Kidney .....13.00  
Cranberry .....12.50  
Teparies .....10.00@10.25

**RICE**  
The United States food administration has fixed maximum prices on California rice as follows: Rough rice, lb., 3.9 to 4c; clean rice, lb., 6.9 to 7c.

**HAY**  
Under date of February 23, Scott, Magner & Miller says:  
Receipts for the past week, 583 tons. We have had during the week fine rains throughout the entire state. The dry sections have been well soaked, and those sections that were favored with rains heretofore have received enough now to keep things going for the next 30 days at least. This assures plenty of grass on the ranges shortly. It will be the means of carrying through much stock that otherwise would have perished. The effects of the weather on the hay held back by farmers, lest they might require it for their own use, has been quite marked. Offers ranging from ten tons up are coming from many sections. This probably will increase the available stocks on hand and grass will decrease the demand materially.  
Fancy Wheat Hay, (light 5 wire bale) .....29.00@30.00  
No. 1 Wheat or Wheat and Oat Hay .....27.00@29.00  
No. 2 Wheat or Wheat and Oat Hay .....25.00@27.00  
Choice Tame Oat Hay .....28.00@29.00  
Other Tame Oat Hay .....25.00@27.00  
Wild Oat Hay .....24.00@27.00  
Barley Hay .....25.00@27.00  
Alfalfa .....25.00@27.00  
Stock Hay .....20.00@22.00  
No. 1 Barley Straw .....60@90

**GRAIN**  
Grain Exchange prices, cwt.  
Corn, Cal. Yellow, cwt. ....3.45@3.65  
W. Egyptian .....3.70@3.80  
Brown Egyptian .....3.55@3.60  
Barley, Feed and Brewing, cwt. ....3.62½@3.65  
Milo .....3.55@3.60  
Oats, Red Seed .....3.60@3.70  
Feed .....3.35@3.50  
Wh. Feed .....3.50@3.55  
New Black .....3.25@3.35  
Rye, Utah .....4.00@4.25  
Wheat — Government prices: Common white hard, base price is \$3.50 per central, or \$2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft wheat, base price 2 cents per bushel less, or \$2.08 per bushel; white club (including Sonora), \$2.06 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, 3 cents per bushel reduction; if 56 to 58 pounds, 6 cents per bushel less; if less than 56 pounds, grain becomes sample grade and sells on its merits up to within 1 cent per bushel of 56-lb. wheat. Sacked wheat 4 cents per bushel more, less tare for weight of sacks.

**FEEDSTUFFS**  
These prices applicable to San Francisco, with \$1.00 less at Sacramento and Stockton, are for cash at the mill in carload lots, and include sackage, with an additional rate of 50 cents per ton in less than carload lots.  
Wholesale prices per ton. Prices fixed by food administration as San Francisco price; Sacramento and Stockton \$1.00 less on carlots at mill door:  
 Bran .....34.00@35.00  
 Middlings .....41.50@42.50  
 Mixed Feed .....37.00@38.00  
 Shorts .....35.00@36.00  
 Rolled Barley .....72.00@74.00

**SEEDS**  
Prices in round lots, lb.:  
 Millet, recleaned .....4½@5½  
 Alfalfa .....20@21  
 Flax .....6@6½  
 Hemp .....4½@5½  
 Rape .....2½@3

**WEATHER CONDITIONS**  
San Francisco, Cal., Feb. 23, 1918.

Stations	Wk. Rainfall	Norm.	Max.	Min.
San Francisco	1.30	16.63	30	32
San Jose	1.92	6.95	16.99	54
Sacramento	2.21	5.01	13.52	61
San Francisco	3.08	7.92	15.79	58
San Jose	1.70	4.16	11.30	62
Sacramento	2.34	4.76	6.25	60
San Luis Obispo	7.14	9.06	13.48	60
San Diego	4.65	5.72	10.54	62
San Diego	1.24	3.17	6.88	64

**Citrus Fruit Market**  
Los Angeles, Feb. 27, 1918.  
The rains have slowed up shipping, and the few oranges reaching market are quickly picked up at long prices. Even storage Valencia are bringing sometimes well up toward \$5.00. Lower quality fruit, however, sometimes goes below \$2.00.  
Lemons are hitting the entire scale from below cost of packing and shipping to around \$8.00 and \$9.00, the lowest priced fruit being that which has been injured by freezing in transit.

**Shipments**  
Shipments of oranges from Southern California to date since November 1, 1917: 4155 cars; lemons, 1054; total, 5209. To same date last season: oranges, 8236; lemons, 1831; total, 10,067. From Central California this season: oranges, 1883; lemons, 106; total, 1989. To same date last season: oranges, 4029; lemons, 154; total, 4183. From Northern California this season: oranges, 202; last year, 842.

**AT THE AUCTIONS**  
February 20  
New York: 5 cars. Nav. \$3.05-\$6.35, Tang, \$3.10-\$3.20.  
Boston: 6 cars. 1 Val. 1 lem. Nav. \$2.15-\$5.20, Val. \$3.20-\$4.85, lem. \$0.90-\$1.50.  
St. Louis: 2 cars. Nav. \$4.55-\$4.95, lem. \$6.00-\$7.50.  
Philadelphia: 1 car Nav. \$1.60-\$1.70. Seed. \$1.85.  
February 21  
New York: 5 cars. Nav. \$3.20-\$4.65.  
Boston: 6 cars. Nav. \$2.35-\$5.45, Val. \$2.65, Seed. \$3.85-\$4.35, Bloods \$2.45.  
February 22  
Pittsburg: 1 Nav. 1 lem. Nav. \$4.35-\$5.25, lem. \$6.50-\$7.45.  
Cleveland: 2 cars. Nav. \$2.00-\$5.40.  
St. Louis: 1 Nav. 1 Val. 1 lem. Nav. \$4.50-\$4.90, Val. \$3.75-\$4.85; lem. \$5.55-\$6.65.  
No other auctions open account Washington's birthday.

February 25  
New York: 11 cars. Higher: Nav. \$3.15-\$6.65.  
St. Louis: 3 cars. Nav. \$2.65-\$4.85  
Seed. \$3.90-\$4.70, lem. \$5.45-\$7.00.  
Boston: 9 cars. Nav. \$4.00-\$5.80, Seed. \$4.55-\$6.95, lem. \$6.25-\$8.35.  
Philadelphia: 1 lem. 1 Val. Val. \$3.25, lem. \$1.00-\$1.90.  
Cincinnati: 1 car lem. \$7.90-\$8.95.  
Pittsburg: 2 Nav. 1 lem. Nav. \$2.40-\$5.70, lem. \$2.90-\$5.50.  
February 26  
New York: 6 cars. Nav. \$3.70-\$5.80, Val. \$4.60.  
Boston: 4 cars. Nav. \$4.05-\$5.15, lem. \$8.45.

**MARKET NOTES**  
The citrus fruit shipments of California in February, 1917, exceeded 4000 cars. This year it will be far below half that.  
Motor truck marketing of hogs by Nebraska farmers has more than doubled during the past year.  
Owing to high prices of barley and other stock feeds it has been suggested that stock feeders feed heavier of oats. Does anyone know of cheap oats?  
Feeders at the Union Stockyards, Portland, have been paying four and a half cents per pound for corn, three cents for barley and five cents for wheat.  
The cantonment at American Lake, Washington, is feeding 5000 hogs, largely on the wastes of the camp.  
There were about a half million less hogs in the stockyards of the large centers of the United States at the end of January, 1918 than there were on the same date 1917.

Of cold storage butter on February 1, 1918 there was 1,132,234 pounds, a decrease of 31.9 per cent during the 12 months. On the other hand, cheese shows a storage of 4,100,326 pounds, or an increase of over 69 per cent.  
An idea of the horse markets of the country is given in an item in the Breeders Gazette which shows the receipts of horses at various markets for the year 1917 were as follows: East St. Louis, 279,857; Kansas City, 127,823; Port Worth, 115,233; Chicago, 107,511; Jersey City, 70,258; Nashville, 63,023; Oklahoma City, 62,306; Indianapolis, 61,692; Memphis, 60,848; St. Joseph, 33,504; Omaha, 32,781; San Antonio, 31,898; Sioux City, 29,391; Pittsburgh, 29,229; Cincinnati, 27,279; Watertown, 22,084; Denver, 19,758; Wichita, 19,312; El Paso, 15,052; Louisville, 14,127; Amarillo, 13,367; St. Paul, 9959; Buffalo, 8532; Knoxville, 8254; New York, 7574; Baltimore, 7442; Spokane, 7092; Portland, 6933; Pueblo, 6665; Philadelphia, 4217; Albany, 3303, and New Orleans, 2614.  
Post card reports to the bureau of markets of the United States department of agriculture show shipments from California during the week ending February 4, approximately as follows: Apples, 3 cars; artichokes, 1; celery, 33; cabbage, 7; cauliflower, 134; carrots, 4; dried apples, 1; dried apricots, 1; dried beans, 31; dried peas, 1; dried peaches, 12; dried pears, 1; dried prunes, 17; lettuce, 78; mixed vegetables, 72; mixed fruit and vegetables, 11; mixed dried, 3; onions, 5; potatoes, 87; raisins, 58; tomatoes, 1; turnips, 3.  
Transportation experts are advising canners and fruit and vegetable shippers to lay in stock of shook and all supplies for next season's work. Presumably cars will be far more scarce in midsummer than at this moment.

# Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.  
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

**Estate Conveying Real Estate**  
A has three heirs, wife and two married sons. He sells real property on contract of sale payable in installments; prior to the expiration of the contracts A dies. When the party completes his payments how can the deed be made? What are the proceedings if A makes a will to the heirs? They would be the only heirs whether or not a will was made. Could the heirs all sign a deed and make a valid conveyance of the property? Does dying testate or intestate make any difference?—Subscriber, Lamanda Park.  
Insofar as the conveyance to the contract purchaser is concerned it makes no difference whether or not a will is left. In order for him to procure a valid unclouded title it will be necessary to have the estate probated whereupon an executor or administrator is appointed. Thereupon petition of either the administrator or the contract purchaser showing that the deceased entered into the contract and that the purchaser has made the stipulated payments, and after due course the court makes its decree ordering the administrator to execute the conveyance.


**Leasing Property Bought Under Contract**  
We own a ranch clear of encumbrance of which we sold ten acres in installments to X. Can X lease this land for the development of oil prospects thereon without our consent? The drilling for oil might injure the land for farming. If he can lease would he not have to pay us the full price of the land before he could take any of the oil royalties himself? How are we going to be protected? Could not we lease this land to the oil company taking all moneys until our full installments are made and X gets his deed and then turn it to him?—Subscriber, Lamanda Park.  
You do not state the title which X holds; it is presumed that he has the ordinary installment contract of purchase. Holding such you remain the holder of the legal title to the property and X holding only an equitable title as the word "equitable" is used in common parlance. Not holding the legal title to the property, it is extremely doubtful if X could make a valid lease thereto of any kind. He has no right to permit the commission of acts which so diminish the value of the property as to impair the vendor's security. The vendor would in the stated case have probably two remedies, viz, ejectment against the oil company as for an unlawful trespass and injunction to restrain waste

against the vendee and the oil company. The vendor cannot be required to take his money before it is due according to the contract; such contract can, with mutual consent be altered so that either of the methods suggested could be carried into effect.

**Outlawing of Note or Agreement of Sale**  
I hold a note payable in three annual installments. Is it the law in this state that each installment outlaws if not paid within four years from its maturity, or does the entire unpaid principal of the note continue valid and unimpaired until four years after maturity of the final installment? Would the same apply where instead of a note the document is an agreement for sale of real estate? — Subscriber, Bakersfield.  
The statute of limitations begins to run against each installment from the time when an action might have been brought. This is true of the right of action of the holder of the note no matter whether secured by mortgage, or whether the promise is contained in an agreement. Upon the other hand, if the mortgage or agreement has been recorded the vendee under the contract, or the mortgagor cannot quiet the title against the creditors to the property, nor, if the creditor under such recorded instrument, gets into actual possession of the real property, can they get him out by ejectment. The debtor in such cases has two methods of procedure, first, he can pay his debt in full, second, if he has resided upon the property, and paid all taxes and fenced and improved the property for a period of over five years after maturity of the lien he could probably maintain title by adverse possession.

**THE RESOURCES OF THE UNITED STATES**  
Seven per cent of the world's area.  
Six per cent of the world's population.  
Seventy-five per cent of the world's corn.  
Sixty-six per cent of the world's cotton.  
Sixty-six per cent of the world's petroleum.  
Forty per cent of the world's iron.  
Forty per cent of the world's coal.  
Thirty per cent of the world's manufactures.  
Twenty-five per cent of the world's wheat.  
Forty per cent of the world's railways.  
Thirty-five per cent of the world's banking power.  
Thirty per cent of the world's wealth.

**SPERRY'S NEW VALLEJO MILL**  
The Sperry Flour Company has at Vallejo a mill just completed which turns out in one day 4750 barrels of American Indian flour. But 4750 barrels expresses but little to most of us. Perhaps a better idea is had when we say that this one day's run of this one mill results in turning out sufficient flour to feed 5000 Sammies for 12 months. And to make that amount required 20,741 bushels of wheat. The Sperry's is a great California institution, with mills in almost every corner of the state.



**540 Egg "Pioneer" \$20 Down**

then \$10 per month for four months. The "Pioneer" is the best and highest class hot water incubator made in America. Send today for free illustrated catalog.



**BABY CHICKS! BABY CHICKS!**

We hatch 19 varieties of chicks, ducks, geese, turkeys, etc. Send for free 66 page illustrated catalog. Our Leghorns are all hatched from eggs from O. B. Hubbell, Van Nuys Ranch, no better stock in Southern California. Every Hen Hoganized twice in 1917. Write us your wants. No order too large, or small.

**Pioneer Hatchery Co.**

World's Largest Chick Dealers 320 S. Spring St., Los Angeles, Cal.

**ALFALFA LAND FOR DAIRYING**

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

**BRENTWOOD IRRIGATED FARMS,** In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address

**BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco**



"HOW can I be reasonably sure that my chicks will develop into hardy, healthy chickens?"

A natural question—and the answer? Just this:

Keep them busy, happy and hungry. Freedom and exercise are important. You will be amply repaid for close attention to the wants of these youngsters. The foundation of their lives—of their future egg production—*of your very profits*—is laid in the first few weeks.

No matter what your methods may be—remember that you can depend on Sperry Gritless Baby Chick Feed to produce results. It is clean, uniform, properly granulated and proportioned.

It provides in confined quarters the same food values and constituents that the mother hen will scratch for her chicks if allowed to roam in the yards and fields.

Experience has taught you that to make money in the chicken business you must save a big percentage of each hatch. So—why take chances? Give your baby chicks exactly what they need—Sperry Baby Chick Feed—a perfectly mixed ration that is based on the *practical findings* of the most successful poultry experts and raisers.

The new edition of our booklet, "Makes Hens Happy," takes up this question in detail—tells how to boost your poultry income. Thirty-two pages full of practical hints and profit-pointers. No one knows so much about the poultry business that he can afford to be without this book. Just write your name and address on the chick—and we'll send the book free.

STOCK AND POULTRY FOOD DEPARTMENT

**SPERRY FLOUR CO.**

152 Weber Avenue

Stockton, California



This is the chick that will do the trick.



**Sperry**  
**Baby Chick**  
**Feed**  
"A Sperry Product"



# CALIFORNIA CULTIVATOR

and *LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

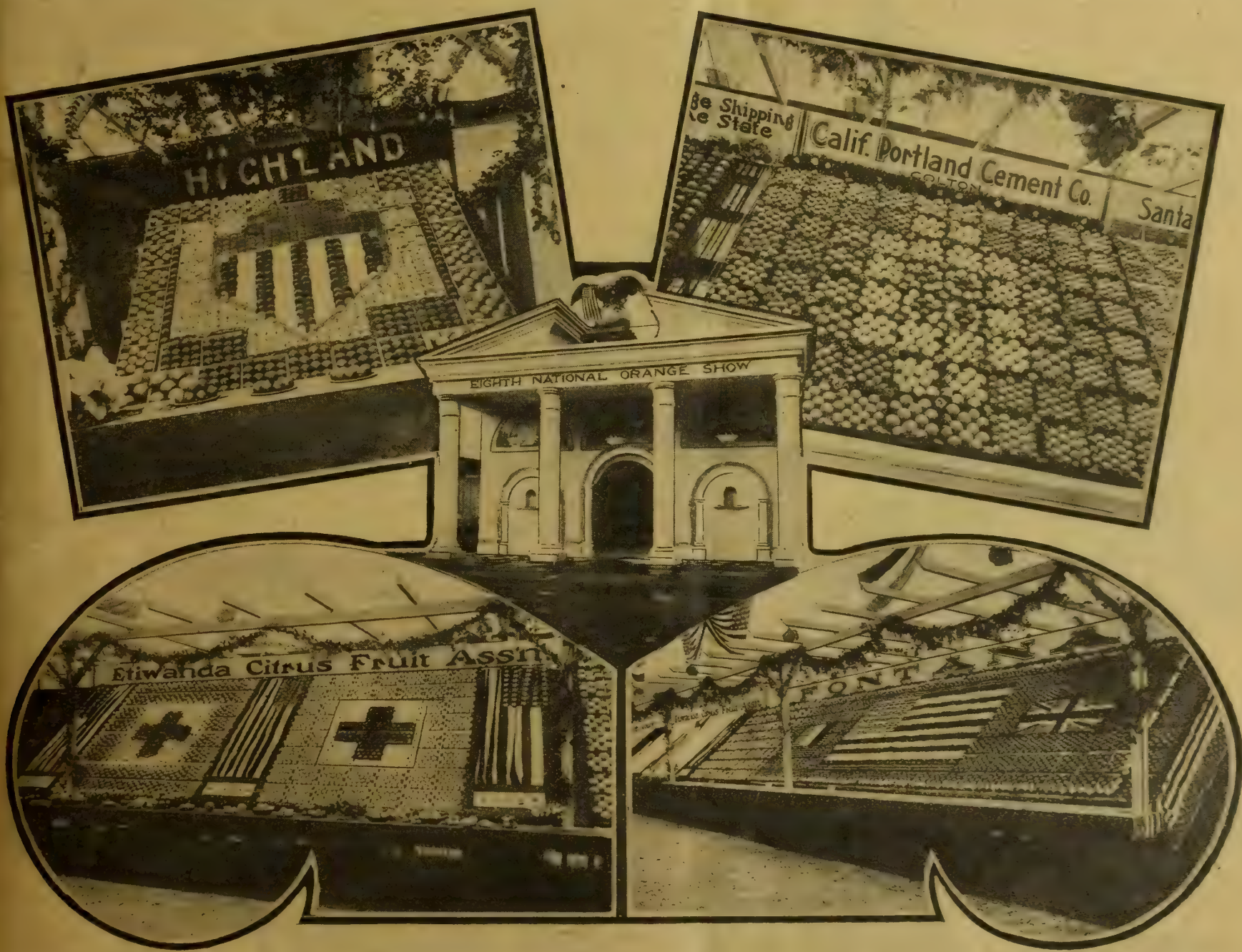
Devoted to the Rural Home and Ranch

LOS ANGELES

March 9, 1918

SAN FRANCISCO

## Some of the Features at Great National Show



The National Orange Show, an annual event for seven years now, has secured a reputation as a "rain maker," second to none. This year was no exception and a wonderful blessing was poured out on needy California soil. Notwithstanding this storm nearly all the week of the Orange Show a wonderful exhibit called out almost record attendance.



# Guaranteed to Do Satisfactory Work on Your Farm

## THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

### Emil Steege Says:

"This fall I threshed 20 days with 400 gallons of fuel and 50 gallons of oil. I pulled a 33-inch separator and kept 8 teams busy. I broke 80 acres last spring in 4 days, using 100 gallons of fuel and 10 gallons of oil, pulling 4 breaker bottoms, and I pull 6 bottoms when plowing.

"Plowed 300 acres last spring and threshed for 30 days in the fall of 1916. It is lots cheaper than horses or steam power. I sure like my Sandusky very much; also the treatment I have had from the company.

"The tractor will do a lot more than it is guaranteed to do, and it is very simple to operate. I do not hesitate to recommend it to anybody in the market for a tractor."

(Address upon request.)

You realize the advantages in good tractor farming--the saving in labor, lower maintenance cost than horses or mules, more timely and better prepared seed beds, resulting in bigger and better crops.

These things are apparent to the farmer of today, and we believe that the only reason for delaying the purchase of a tractor is—"Will It Work Satisfactorily On My Farm?"

The intelligent man knows that a tractor can't do the impossible, regardless of claims. We have appreciated this for many years. Realizing our own responsibilities in selling a Sandusky Tractor, and standing back of every machine as we do, it has always been our policy to fully determine each prospect's local conditions and requirements before recommending the purchase of a Sandusky Tractor.

This enables us to know positively that "The Little Fellow With The Big Pull," either the 10-20 Model J or the 15-35 Model E, is satisfactorily and profitably adapted to your requirements, and consequently "Our recommendation is an unqualified guarantee of satisfactory work on your farm."

## TRY IT ON YOUR OWN WORK

Is substantiation of this policy and as a further safeguard to your interests, all Sandusky Tractors, whether sold direct or thru a Dealer's Sales Room and Service Station, are delivered subject to satisfactory demonstration. A specially trained serviceman will personally instruct you in its care and operation. If for any reason it is impossible to fulfill our guarantee on your work, the tractor is taken off your hands and the purchase price refunded.

## GUARANTEED FREE SERVICE

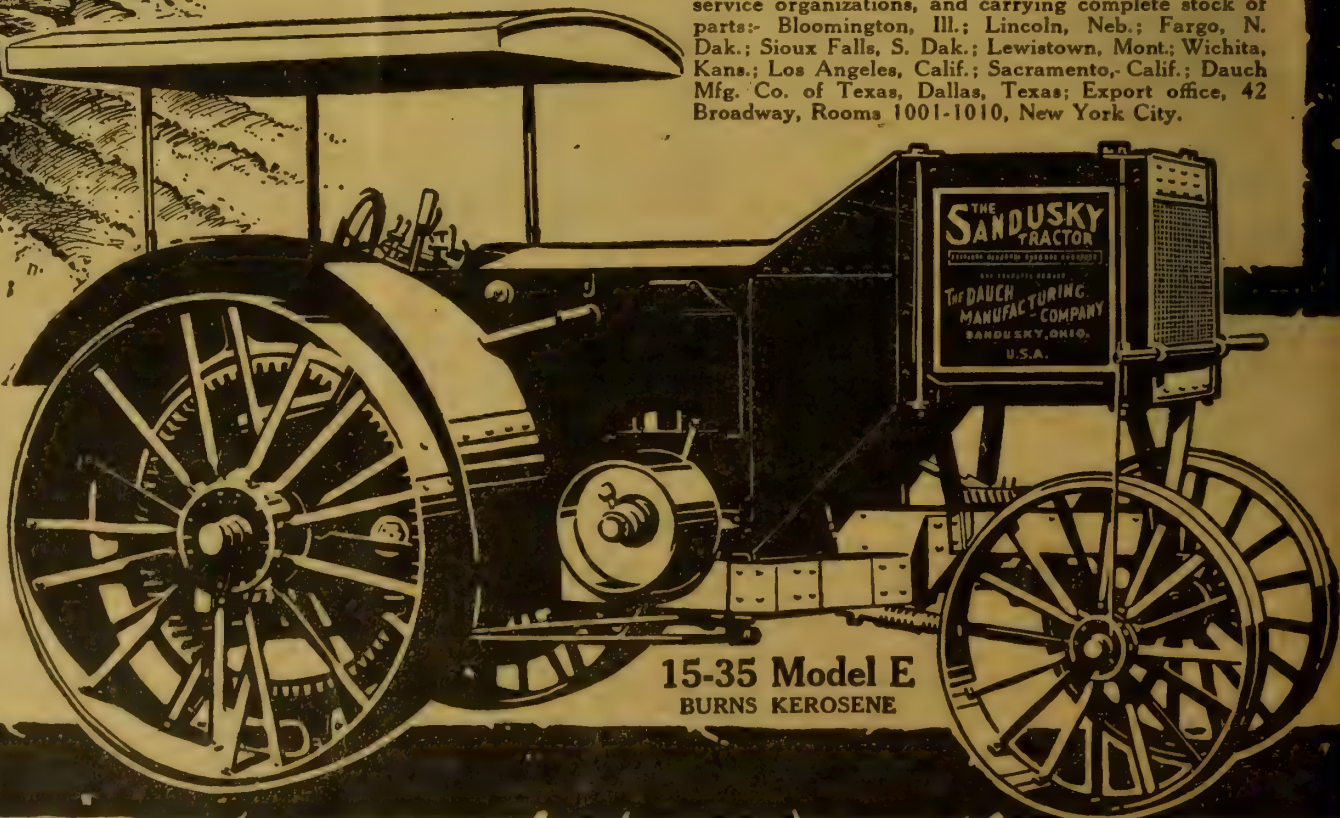
Each Sandusky Tractor further carries a definite and specific guarantee of free service. This ensures you efficient help and advice whenever wanted and completes a policy which absolutely protects your interests from every conceivable angle.

Write today for a copy of "Power On The Farm," issue J-75 or E-75, or both. It covers all details of design, construction, ability, guarantees and policies. Fully outline your requirements--the number of acres under cultivation and to be cleared, character of soils, crops, per cent of grades encountered both on the farm and on the road, together with your belt power requirements. We will gladly analyze this carefully, making a personal inspection if necessary, and advise you without obligation. Investigate now so as to ensure delivery when you wish it.

**The Dauch Mfg. Co, Sandusky, Ohio, U.S.A.**

Los Angeles, Calif., Branch:- 126 N. Los Angeles St.

Principal Factory Branches, equipped with efficient service organizations, and carrying complete stock of parts:- Bloomington, Ill.; Lincoln, Neb.; Fargo, N. Dak.; Sioux Falls, S. Dak.; Lewistown, Mont.; Wichita, Kans.; Los Angeles, Calif.; Sacramento, Calif.; Dauch Mfg. Co. of Texas, Dallas, Texas; Export office, 42 Broadway, Rooms 1001-1010, New York City.



### 15-35 Model-E

Sandusky 5 x 6 1/4 four cylinder motor. Sandusky "Transmission Indestructible" —three speeds forward; reverse. Sandusky spur gear drive throughout—no bevel gears;—direct drive on low speed and belt work.

Wheel base, 100 inches; weight 8080 pounds. Protection throughout against sand and grit.

Guaranteed Kerosene or Distillate Burner.

B-2-E

See it at the California Tractor Association's Demonstration at Davis, California, April 17-18-19-20.



# California Cultivator

Vol. L, No. 10

LOS ANGELES: MARCH 9, 1918

One Dollar Yearly

## Long Staple Egyptian Cotton

Greater Difficulties in Growing, but it is Profitable and Offers a Field of Endeavor Which is Not Had by Cotton Growers of the South. Cultural Directions by Two Practical Growers

### EGYPTIAN COTTON

Written for California Cultivator  
By Glenn O. Thrailkill

**T**HE present high price paid to growers of Egyptian cotton and the profits made from the crop of 1917 has created extensive interest in this practically new crop.

The climatic requirements of this crop restrict its successful production to a relatively small area in California and Arizona. In this area it is one of the most profitable and popular of crops. While Egyptian cotton is a profitable crop under normal conditions, the present price has made it exceptionally so.

The prospect of continued high prices for this cotton has caused many farmers in the Imperial and Palo Verde Valleys to plow up stands of alfalfa and plant cotton. Also many acres in the San Joaquin Valley are being planted to Egyptian cotton this year. Though this is a new crop in this valley the climate is favorable, and more than a bale of Egyptian cotton was grown on an experimental acre on the Kearney experiment farm in 1917. There is no reason why this crop should not be successful there.

While Egyptian cotton is strict as to climate, requiring eight or nine months without frost to mature the entire crop, it is not extra strict in its soil requirements, but produces well on all soils from sandy loam to clay. It is quite tolerant of alkali but does not produce so well on alkali land as it does on soil free from alkali.

Cotton will produce to some extent on poor soil and with very careless farming, but the profits are being made by farmers who give the proper cultivation and irrigation to crops planted on good soil.

Cotton is not a fool proof crop and requires knowledge of its special requirements as well as general farming ability to secure the maximum yield. Cotton repays handsomely by increased yield for good soil and cultivation and is deserving of the best soil and care. As a yield of three-quarters of a bale per acre will give double the profits that a half bale per acre would, it will pay those growing cotton to give the crop the study and care necessary to produce the maximum yield.

#### Planting

Cotton is planted in rows 42 inches to 48 inches apart, generally 42 inches. It requires 30 to 40 pounds of seed per acre, which is planted from one to two inches in depth. In Imperial Valley planting begins about the last week of March, or as soon as danger of a late frost is past. As early plantings produce best some farmers plant earlier expecting to replant in case of damage by a late frost.

Where much cultivation is necessary to keep down weeds planting on the flat is advisable. Where water is plentiful and cheap and labor is scarce cotton is planted on the ridges of listed soil, and generally too much irri-

gation and too little cultivation is given.

The soil should be well tilled and receive a heavy irrigation just previous to planting. As soon as the soil will work conveniently the seed bed is prepared and the cotton planted.

With flat cultivation, disking and harrowing just ahead of the planter is best, while with planting on the ridge the top of the ridge is dragged or harrowed lengthwise of the row. This leaves a seed bed with good germinating conditions for the seed, and with careful replanting should not be necessary.

Cultivate as soon as the plants are safely established and repeat cultivation as often as necessary to maintain a good mulch on the surface. There should be a good supply of moisture in the soil previous to planting and this moisture must be conserved to produce the best results.

During the early experiments of Egyptian cotton plants grew to enormous size but produced little crop. This rank growth of vegetation has been reduced to some extent and the production increased in the varieties now grown. It is, however, still necessary to control the growth of the plant to secure the best results. This control is secured by the space allowed each plant and the time and amount of water given the plant.

On rich soil or old alfalfa land plants should be left from six to eight inches apart. The excess of nitrogen in this soil tends to promote a very rank vegetative growth if the plants are given too much space. The leaves shade the main stalk and the flowers on the interior fruiting branches,

thereby reducing the yield as well as making picking difficult.

On soil not so rich each plant should be allowed a larger space from which to draw nourishment. The maximum space between plants on any soil is 16 inches. On extremely poor soil the plants are left closer together to allow a greater number of plants on each acre. Cotton sends its roots deep for food but it does not spread laterally to any great extent, and can safely be spaced ten inches apart on the poorest soil.

#### Irrigation

The cotton plant has a tap root from which little feeder roots are extended to gather feed and moisture. Without moisture the plant food in the soil is not available to the plant.

The soil should be as moist as possible yet work conveniently at planting time. As the moisture near the surface is exhausted the plant is an effort to obtain food sends its tap root down rapidly to the moist soil below.

This forced root development is desirable for several reasons. During this period the growth of the vegetative branches is checked. During the fruiting period there is less foliage or surface for evaporation, therefore, more of the energy of the plant is devoted to fruiting purposes. The larger root system secures food from a greater depth, and in case there is a period during which water cannot be obtained for irrigation the plant will not suffer as it would were its main feeding roots developed near the surface. There is also less danger to these small lateral roots during cultivation.

The first irrigation after planting

should not be necessary until from 50 to 60 days after planting. The time of this irrigation is determined by the condition of the plants. In a hot climate it is to be expected that the plants will wilt during the heat of midday. When any considerable wilting can be noticed in the early forenoon it is time to irrigate regardless of date. Don't delay until the plant blossom yet withhold water as long as you can at this time without dwarfing the plant.

With the most careful irrigation there will at times be water left at the lower end of the land. Unless drained this over-abundance of water will produce large plants on which the quality of staple will not be up to the average. Proper drainage should be arranged.

Cultivate as long as practical with the walking cultivator and "lay by" the crop with the wing sweep, leaving a good furrow for later irrigations.

Note: The best time for chopping is not definitely settled. Chopping early is advisable on poor soil. On rich soil late chopping helps check the excessive growth of vegetation.

### PIMA COTTON CULTURE

By F. W. Waite, at Imperial Agricultural Assembly

In the selection of land for growing Pima Egyptian cotton it might be well to mention that alfalfa or good grain land is suited to growing this cotton. The success of growing Pima cotton depends more on the proper thinning and irrigation than with the short staple variety.

The first step is to plow the land deep, excepting old alfalfa or Bermuda grass, which should be plowed shallow; about four inches deep in the early winter and later about six inches deep; disk thoroughly to break the soil up well. Lands other than Bermuda or alfalfa need but one plowing. Then it should be well soaked with water, getting the water down as far as possible. As soon as the soil will allow, run a smoother over it and disk the soil to a fine mulch. Go over the land with a harrow to smooth the ground. These operations may be varied depending on the kind of soil and method used in planting. The success of a good stand depends on moisture, which is absolutely necessary.

There are several ways of planting, which should be done from the 15th of February to the last of March, either on the level, in the furrow, on the ridge or either side of the furrow, known as bed planting. The distance apart depends somewhat on the kind of soil; the stronger the soil the further apart should be the rows and the plants in the rows should be further apart. Some recommend rows as close as three feet and plants from four to six inches in the row.

This season a man in Yuma Valley with 35 acres of Egyptian cotton planted five by two and one-half feet apart and picked a bale and one-fourth to the acre. This owner says he will

Continued on Page 314

### AWARDS TO BE MADE AT DAIRY CONFERENCE

The presentation of prizes won by the dairy farmers and breeders who have participated in the State Dairy Cow Competition, 1916-1918, will be the central feature of the Dairy Farmers' Conference to be held at the University Farm, Davis, on March 15-16. These awards aggregate over \$7,500 in value and include numerous cash prizes and special prizes of bull calves, cream separators, milking machines, a carload of beet pulp, besides two gold medals and six silver trophies offered by the various dairy breed associations. The prizes are given for the highest production of butter fat by pure-bred or grade cows for periods of ten consecutive months and will be presented to the winners by Dean Thomas F. Hunt of the College of Agriculture at the evening session of March 15.

Aside from papers and discussions relating to the Dairy Cow Competition, a number of addresses on various phases of California dairying under war-time conditions will be given by members of the staff of the College of Agriculture and other wellknown speakers. A postal card addressed to Professor F. W. Woll, University Farm, Davis, California, will bring the detailed program of the Conference by return mail. Dairy farmers are urged to attend the Conference and learn how to meet the problems facing the industry at the present time and how dairy cows are fed and handled for the greatest profit.

#### PROGRAM

Friday, March 15, 10:00 a. m.  
Address of Welcome: Dean H. E. Van Norman.

War-Time Rations for Dairy Cows: F. W. Woll.

The Creamery Patron: S. H. Greene.

The Production of Market Milk: C. L. Roadhouse.

2:00 p. m.—Lecture and Demonstration: Conformation and Production: G. H. True.

7:30 p. m.—The Marketing of Milk: Elwood Mead.

The California State Dairy Cow Competition: F. W. Woll.

Presentation of prizes offered in

the competition: Dean Thomas F. Hunt.

Saturday, March 16, 9:00 a. m.  
How My Cows were Fed and Handled: Ten-minute Talks by Prize Winners.

The Supervisor of Dairy Tests: A. L. Ingebritson.

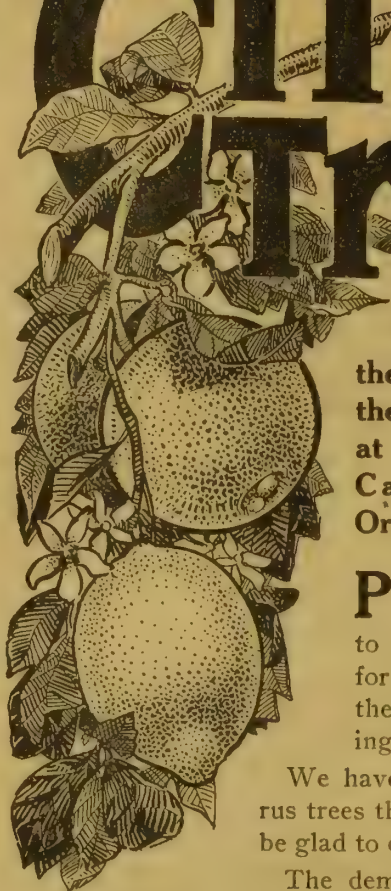
Raising Dairy Calves: C. V. Castle.

The Breeding of Pure Bred Dairy Stock in California: Frank L. Morris.

2:00 p. m.—Lecture and Demonstration: Diseases of Dairy Cattle; Tuberculosis and Abortion: F. M. Hayes.



# CITRUS Trees



The Orange, the Lemon, the Grape Fruit, the Lime, the Citron, are all treated at length in our 1918 Catalogue, which every Orchardist should possess.

**P**LANTERS WILL find it greatly to their advantage to buy from a large, well-cared-for Nursery like ours, where all the conditions are right for growing Nursery Stock.

We have some exceptionally fine Citrus trees this season, upon which we will be glad to quote prices on application.

The demand this year, as you know, has been very heavy for trees of all sorts, and we, therefore, suggest that you anticipate your probable needs, placing orders with us at once.

**NOTICE:** If you haven't already received a copy of our 1918 96-page Catalogue, be sure and write for it—"A real hand-book of useful information to the Horticulturist."

**Fancher Creek Nurseries**  
212 Holland Building  
**Fresno, California.**

## Yamamoto Citrus Nursery San Marino Violet Garden

Huntington Drive, San Marino, Cal.

Wholesale and Retail 250,000 Orange, Lemon and Grapefruit Trees 1, 2 and 3 years old. Florida Sour Seedling Stock—300,000 trees one year old. Trees Planted and Guaranteed on Contract.

Phone Alhambra 731-W

Mail Address: R. F. D. 1, Box 666

San Gabriel, Cal.

## First Class Sour Orange Seed Bed Stock

Grown at Laguna Bell Acres. Stock one year old. 200,000, 8 to 30 inches high, absolutely free from scale. Also first class Rhubarb for sale.

Locke Nurseries, C. H. Harle, Mgr., 27 N. Olive St., Alhambra, Cal.

## Citrus Trees

Orange, Lemon, Pomelo, Lime and Tangerine  
We cordially invite you to inspect our trees as to branching, rooting, uniform size, bud selection and method of careful handling.

**Sento Fruit Nursery** Rosemead Ranch 3 miles west of El Monte on El Monte Road.  
Phone: Alhambra 910J4 R. F. D. Box 311, El Monte, Cal.

## For Sale

Sour Orange Seed Bed Stock, strong, thrifty, one year plants 8 inches and up. Absolutely free of scale.

**Walker-Hubbard Nursery Company**

SAN FERNANDO, CAL.

Office First National Bank Bldg

# LIME

Pulverized Limestone.....\$3.35 per ton  
Ground Limestone.....\$2.50 per ton

This is the One Element Lacking in Most California Soils. Write for Booklet  
**Riverside Portland Cement Co.**

640 Title Insurance Bldg., Los Angeles, Cal.

## Citrus Orchard Practice for March

By G. G. Laidlaw, at Claremont Pomological Club, February 23



**L**ONG continued experience, in citrus fruit culture, emphasizes the fact that the month of March is the time of year requiring the greatest skill and intelligence and promptitude on the part of the grower in all his operations. You may procrastinate in February, but woe be unto you if you continue in March. The character of the soil and the availability of the water supply will necessarily influence the nature of the work.

Certain principles I endeavor to follow in my own practice for this season are: First, to apply to the soil every bit of organic matter available. Second, if the soil is too dry to plow well, irrigate. If it is the intention to use a tankage apply broadcast then thoroughly disk all the ground both ways and on each angle. Then plow in the direction of your irrigating furrows. Never plow when the soil is too sticky or too dry, and plow only once about two inches deeper than you are accustomed to cultivate. Follow this promptly with sufficient harrowing, disking, cultivating, to put the soil into a good tilth and keep it so. Cultivation unquestionably stimulates root activity and renders available the food. This is the season of the year when a heavy strain is about to fall on the trees in the spring growth and bloom and it is our duty to make soil conditions as favorable as possible inasmuch as we cannot control climatic conditions.

More and more we begin to see that the June drop is aggravated by the lack of an adequate and readily available moisture and food supply. I am willing to advance the proposition that if it had been possible to maintain a full irrigation head of water during the hours of hot sunshine from June 12 to 18 of last year, a normal crop would have set on that acreage. It was simply a case of failure on the part of the root system of the trees

to extract sufficient moisture and nutriment from the heated soil to compensate for the tremendous loss by transpiration from leaves and fruit. We should apply ourselves to this problem. We note that invariably, where the trees were healthy at the lower end of the grove and had been basined to catch the runoff, there you will now find the most fruit.

It may be accepted as a fact that wherever the root system is repressed by bad soil conditions such as shallow soil, coarse texture, lack of humus, too much or too little air, moisture and fertility, the very minute, invisible, fine hair roots which alone are capable of taking up the food held in solution of the soil water will fail to function and the fruit will weaken and drop. The problem of satisfactory fertilization I hardly dare mention. For myself I have reverted to the principle of securing the most nitrogen and humus for the least money.

Another matter should have our attention this month is the treatment of gum diseased trees with Bordeaux or their replacement when the disease is too far advanced.

Having done all these things count yourselves unprofitable servants if you make not a good beginning on the annual spring pruning. First, go over the grove and remove all undesirable live growth, spacing the branches and giving to each its "place in the sun," the fine dead wood you may safely leave for some more convenient season if you have not the wherewith to hire it done.

Now, in concluding these suggestions for March I have a subconscious feeling that I have contributed nothing new and if I had, it probably would not be true. With Omar Khayyam one may well say, "Myself when young did eagerly frequent doctor and saint and heard great argument about it but evermore came out by the same door wherein I went."

## Fungicide and Insecticide Formulas

By F. H. Chittenden, Entomologist in Charge of Truck Crop Insect Investigation, Bureau of Entomology, U. S. D. A.



**B**ORDEAUX mixture is used for the control of fungous diseases of many vegetables and fruits and as a deterrent of flea-beetle attack. It can be purchased in convenient package form from seed dealers or prepared at home from bluestone (copper sulphate), which costs 10 to 25 cents per pound, and fresh stone or lump lime (quicklime).

Bluestone, four ounces; quicklime, four ounces; water, 12 quarts; or bluestone, four pounds; quicklime, four pounds; water, 50 gallons.

Dissolve the bluestone in a wooden or earthenware vessel, using hot water. Dilute with half the water. Do not use tin or other metal containers, as they would be spoiled. Slake the lime by adding water, a little at a time. When reduced to a milky fluid, dilute with the rest of the water and strain through doubled cheesecloth or a brass wire strainer of 18 meshes per inch and pour it into the bluestone solution. Stir well and apply at once. This is best when prepared fresh for each using.

Usually it is difficult to get fresh lime at short notice, as needed. To save trouble, the owner of a small garden may weigh out at one time several four-ounce lots of lime, perhaps as many as he expects to use during the summer, slake them in old glass jars, cover with water, and set them away. The lime will remain in good-condition as long as it does not become dry, and each jar is sufficient to use in making a pailful of Bordeaux mixture, or one filling of the average small sprayer. Those who have to spray large fields or orchards should consult Farmers' Bulletin 243.

**Bordeaux Mixture with Resin Fish-Oil Soap**

Resin fish-oil soap is added to the Bordeaux mixture to make it stick to plants, especially those with smooth leaves.

Add to the foregoing formula resin

fish-oil soap, two-thirds of an ounce to one ounce per gallon. It is necessary to add water to the soap, a few drops at a time, stirring well until the sticky soap is dissolved. This soap can be purchased of most dealers in garden supplies.

### Kerosene Emulsion

Kerosene-soap emulsion is a remedy for most sucking insects.

This is made by combining one gallon of kerosene and one-fourth pound of laundry soap, or one pound of whale-oil (fish-oil), or other soap, or one pint of soft soap, with half a gallon of water. The laundry soap, if dry, is shaved and dissolved in boiling water and then poured (away from the fire) while still boiling hot into the kerosene. The mixture is then churned rapidly eight or ten minutes, the liquid being pumped back upon itself by means of a sprayer with a nozzle throwing a strong, solid stream. At the end of this time the mixture has become a thick cream—the stock emulsion. In the preparation of the emulsion a sprayer is a necessity, since if it is not made as directed a perfect emulsion will not be formed. If properly prepared, this stock emulsion will keep through a season and is to be diluted only as needed for use. For most species of sucking insects one part of the stock emulsion should be mixed with 15 parts of water. It is then applied with a fine nozzle in the form of a mist spray, or like a dense fog, and is sprayed only long enough to cover the plants.

If the spray is not applied properly it may drip off the leaves, causing the ground beneath to become soaked. As a result delicate plants when exposed to direct sunlight may be injured or killed. For this reason nicotine sulphate is preferable.

### Lead Arsenate

Paris green, formerly much recommended for biting and chewing insects, such as the Colorado potato



**USE THE WESTERN PULVERIZER, PACKER AND MULCHER**

**3 MACHINES IN 1**



for preparing your seed bed, will increase your crop 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizer and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants. **MADE IN 12 SIZES, FOR HORSES OR TRACTOR USE, IN 1 AND 3 SECTIONS**

1918 crop will bring war prices; make it a record breaker in size by using the Western. Send for our free illustrated catalog, giving full description of the machine and its work, also dealer's name and much other valuable information.

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Western Pulverizers in Stock Write For Price

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110 LBS. 50 KILOS  
100% PURE

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TRADE MARK  
**VELVET FLOWERS**  
REGISTERED - C-540

Fleur de Soufre  
Anchor Brand,  
Velvet Flowers of Sulphur and Eagle Brand.

Packed in barrels and double sacks are the finest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

SAN FRANCISCO SULPHUR CO.  
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**"THE BOSS" TREE PROTECTOR**

Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

**Prices Per 1000**

10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
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24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

**Yucca Manufacturing Co.**  
1380 Willow Street, Los Angeles, Cal.

There is no argument as to the best and cheapest source of nitrogen for orchards where

**Nitrate of Soda**

is used and the fruit never fails to set. Application should be made now for best results.

Mention crops interested in when writing for free information and literature.

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W. S. SPARR Agent  
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**VICTORY DRIVE**

Our irrigation products will increase your production. Get our circulars on Surface Irrigation Pipe, Well Casing and other supplies.

American Steel Pipe & Tank Co.,  
344-66 Pacific Electric Bldg.,  
Los Angeles, Cal.

**(AMERICAN SURFACE PIPE)**

beetle, cucumber beetles, cabbage worms, and tomato hornworms, because it was known to most farmers and is for sale at drug stores, is being superseded to a considerable extent by other arsenicals, of which the most important is arsenate of lead or lead arsenate.

The present high cost of all copper compounds has resulted in a similar high price for Paris green. Although arsenate of lead has also risen in price it is less costly and is preferable for the following reasons: (1) It serves the same purpose as Paris green against external leaf-eating insects; (2) it is applied in the same manner; (3) it is less harmful to growing plants, being less likely to burn delicate foliage; (4) it adheres better to the foliage; (5) it is less troublesome to prepare; and (6) the white coating which it leaves on the plants after spraying shows which plants have not been reached by the treatment. Lead arsenate, however, does not kill insects as quickly as Paris green, although the fatal dose is absorbed nearly as soon.

Arsenate of lead is sold in both powder and paste forms. At the rate of two pounds of powder or four pounds of paste to 50 gallons of water or Bordeaux mixture solution it will destroy cabbage worms and most other caterpillars, the "slugs" and adults of the Colorado potato beetle, cucumber beetles, and most other insects of this nature.

In small gardens two-thirds of an ounce of the powder form, or ten level teaspoons, to one gallon of water is used.

Generally, the adhesiveness of lead arsenate is enhanced by the addition of a "sticker" of about the amount by weight of resin fish-oil or other soft or dissolved soap as of the arsenical used. This must be used in the case of cabbage and similar crops, since otherwise the waxy bloom of the foliage repels the liquid, causing it to gather in large drops, and a thorough distribution, on which the success of the treatment depends, is not secured. If properly applied, the leaves should show a thin, white coating of the poison for a long time.

The number of sprayings to be applied will depend on the insect concerned in the injury, and on local and seasonal conditions. Sometimes a single application at the proper time will suffice, although two or three are required for the cabbage worm, potato beetle, and certain other insects which produce more than one generation annually.

#### EFFECTIVE QUARANTINE

State Entomologist A. W. Morrill of Arizona is plainly doing some good work for Arizona agriculture in the citrus canker fight. Commissioner Hecke of California and Entomologist Morrill are working hand in hand and it is thought the barriers erected by these two states may be sufficient to keep out this dread disease. It is levying an awful tax on the groves of Florida and the gulf states.

In addition the pests of Mexico, a menace of citrus and sub tropical fruits, are being given attention. Here is a paragraph from a recent ruling on prohibited shipments into Arizona: "Oranges, guavas and mangoes, grown in the Republic of Mexico, a later Mexican fruit fly quarantine of the federal horticultural board prohibits the importation of grapefruit, sweet limes, archras sapotes, peaches and plums in addition to oranges, guavas and magoes."

Arizona is receiving absolutely no olive trees as nursery stock or cuttings from any section.

"Citrus fruits, trees, plants, seeds, buds and scions are prohibited from all outside sources except that citrus fruits, seeds, buds and scions may be admitted from the state of California.

New Zealand has decided to control the purchase and distribution of its new wheat crop. The maximum government price will be \$1.41 per bushel. Latest estimates give the total amount of wheat land as 293,000 acres and the estimated yield, 30 bushels per acre. New Zealand has lately been importing wheat from Australia.

Our ideas of the millennium are hazy, but we feel certain there will be no alarm clocks there.—Toledo Blade.

**TEAGUE QUALITY CITRUS TREES**

AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.



**The R. M. Teague Citrus Nurseries**

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**Tree Protectors THAT REALLY PROTECT**

FITTED WITH GALVANIZED WIRE TIES WHICH GO ALL THE WAY AROUND THE TREE

10 Inch.....	\$ 9.00 per 1000	18 Inch.....	\$12.50 per 1000
12 " .....	9.50 " "	20 " .....	15.00 " "
14 " .....	10.50 " "	24 " .....	17.50 " "
16 " .....	11.50 " "	30 " .....	20.00 " "

WRITE US OR SEE YOUR NURSERYMAN FOR DISCOUNTS AND FREE SAMPLES

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DEALERS: Write us for our sales proposition.

Write for Catalog and Prices



**Citrus Trees**

Budded on Sweet and Sour Orange Seedlings Those budded on sour seedlings are best adapted to the heavier soils. Let us know the location of your land, character of soil and irrigation facilities, and we will be glad to advise you. All trees delivered to customers in the best possible condition. You will find our catalogue of deciduous, citrus and ornamental trees and roses very helpful.

**Fresno Nursery Co.**  
Address Dept. A Fresno, Cal.

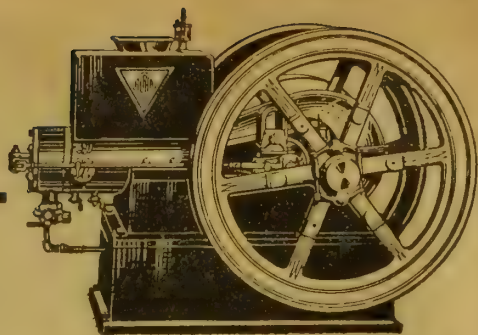
**100,000 Sour Orange Seedlings**

Splendid-big plants, 10 inches and up. 1920-1921 should be "high tide" years for Citrus trees. Get in on this tide. Write us today for prices. Selected Navel, Valencia, Lemon trees. Fruit-wood buds.

**McMillan--Graffen Nurseries**  
Address, Puente or Spadra, Cal.

When writing advertisers, mention The Cultivator.





"The man you can hire to work on a farm for nothing will just about earn his wages"—*Josh Billings*

IT'S the same with cheap farm engines as with cheap farm help. You can buy a poorly designed, cheaply made engine for less than the price of an Alpha, but you will find that a cheap engine is always "balking" or getting out of kilter just when you need it most. And there will be endless delays for repairs.

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## ALPHA ENGINE

FOR PUMPING OR OTHER FARM WORK

1½ to 28 H. P.—For Gasoline or Heavy Distillates

Equipped with Built-in Magneto. No batteries used. Start Easily on Magneto without cranking.



### THE VIKING ROTARY PUMP

A pump of very high efficiency due to its slow speed and positive delivery. Capable of pumping large volumes of water to any height without loss of efficiency.

Capacities 20 to 1600 gals. per min.

Engine and Pump Catalogs Sent on Request.

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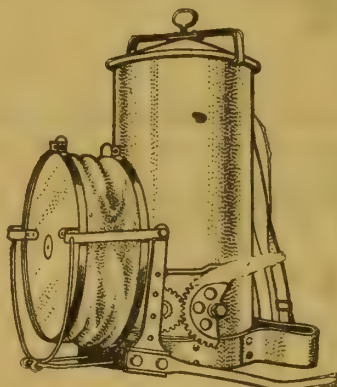
## THE LIQUID FLAME

Kills Squirrels and Gophers

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**AMERICAN BEAUTY DUST SPRAYERS**

Send for our Booklet on the Control of PEST and DISEASE.



Kenwood, Calif., September 12th, 1917.

The California Sprayer Co.,  
Reedley, Calif.  
Gentlemen—Your American Beauty Sprayer has saved 75 per cent of labor and moreover got a larger crop. Have to say it is the best machine on the market.  
Respectfully yours,  
L. A. TYCE.

**THE CALIFORNIA SPRAYER CO.**

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Hundreds of the Citrus Growers of Southern and Central California are Using

**GARBAGE**

Composed of  
BONE MEAT BLOOD  
VEGETABLES

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All Fertilizer—No Filler

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Now is the Time to Plant Citrus Trees

**Wallace Nurseries**

(Established over 40 years ago.)

Growers of Dependable 1, 2 and 3 year old

Orange, Lemon and Grapefruit Trees

Our Trees-for-Real-Estate proposition will appeal to you. Write us and find out about it.

Sales Office: 504 I. W. Hellman Bldg.

Los Angeles

## National Orange Show

San Bernardino Succeeds in Giving to the World a Glimpse of the Citrus Industry. People of all Countries were Present.

All California united in the great display of citrus fruits and other products and of implements and methods of work. There was more attention given to quality and commercial display than preceding years and at the same time, the features, which are the strong drawing cards with the public were not neglected. The prevailing idea in the feature was that induced by the present war conditions. In fact one of the most striking features was Riverside's great battleship, an indication of the thought given to things war like.

In other designs, our national shield, the Red Cross, American, French and English flags were all liberally used and in every case most effectively. The engravings shown on the cover are chosen with an idea to show how admirably commercial packs worked into designs, almost as effectively as the more spectacularly built features.

In the matter of judging exhibits, the judges had no small task. The fruits were placed before them with only numbers to mark them. Riverside and Lindsay had it seems, at first, practically tied in the Judges' decision, but as a matter of fact, in final awards, Riverside won by only one-eighth of a point.

There were the usual concessions, exhibits of orchard implements, appliances, etc. and an especially interesting exhibit—in this year of conservation of wastes—in citrus foods and by-products.

### TRACTOR DEMONSTRATION

Plans for the big Tractor and Implement Demonstration and Power-Farming Exposition to be held on the university farm at Davis on April 17, 18 and 19 are progressing in a manner that indicates that this will be the biggest event of the sort ever conducted west of the Mississippi River.

At the annual meeting of the California Tractor and Implement Association, recently held in San Francisco, W. H. Gardner of the Yuba Manufacturing Company, formerly vice president of the association, was elected president. C. E. Witherell of the Samson Sieve-Grip Tractor Company was elected vice president and G. M. Walker of the Holt Manufacturing Company was re-elected secretary-treasurer. At that meeting the association, which has a membership of practically all the tractor and implement manufacturers and representatives on the Coast, and under whose auspices the coming demonstration is to be held, voted an expenditure of several thousand dollars for an extensive publicity campaign, which will advertise the demonstration through the newspapers, farm journals and country weeklies and through posters placed in every railway station and various other means.

More than 40 tractors will take part in this demonstration on the university farm. Behind them will be hitched plows, harrows, land levelers, and every other kind of tractor-drawn tool. The original plans for the demonstration, which provided for only a public demonstration of plowing, have been broadened by popular request to include work with harrows and other implements so that the show will have the widest possible educational value.

The association has opened offices in San Francisco in the Monadnock Building and has employed Eugene Smith as business manager.

### COMMANDEERED FARM LABOR

"Leading the horse to water" is easy. Men may be taken from their homes and congenial, profitable employment by the government and under the patriotic impulses that have been stirred by press, public opinion, music, uniform, etc. be made to work up into fine soldiers. The perfect organization and discipline of railroads and other corporations, might handle men against their wills and make them work even more profitably than those of a chain gang, but believe me, when you come to tear people away from the cities and towns, where entertainment, excitement and big pay allure, and force them to go out into

the country and accept such pay, accommodations, work and hours as the average farmer offers, he will surely balk worse than any mule you ever tried to make do the work of two and the farmer will balk much worse and long before your "Liberty Labor" reaches the ranch.—F. L. K.

District No. 70 which recently cleared Butte Slough channel has not had opportunity to test the work of this great drainage proposition, but it is thought that in case of flood, relief will be had in lower flood level.



Hoover says: Food is Ammunition—Don't waste it!

"Double the Use of Vegetables."

Help your country by raising vegetables for your own home and for market. But—to make your garden patch yield its utmost you can't afford to gamble with poor seeds. Play safe—

### Plant Morse's Seeds

soil-tested and pedigreed, large yielding and sure. Morse's Seeds for fields and gardens have been producing profitable crops for farmers for forty years.

Our 1918 Garden Guide is just off the press. It tells you all about our new varieties of vegetables and flowers—as well as the old standbys. Send for your copy today—it's free.

**C. C. MORSE & CO.**

729 Front Street San Francisco

Our Pedigreed French Prunes



Actual Size

are as represented: We do not use the term in a general way. We still have on hand first-class trees of

Prune, Apricot, Almond

Cherry, Pear, Etc.

and the finest ornamental stock we have ever grown—Please write us; to deal with us means you will be a satisfied customer.

**LEONARD COATES NURSERY COMPANY**

Morganhill California



# Plant Fruit Trees

of Standard Commercial Varieties and Help to  
Supply the Great Need of Fruit Foodstuffs Later

**Peaches**

**Apricots**

**Prunes**

**Plums**

**Pears**

**Apples**

**Almonds**

Our allied friends in Europe are undertaking measures to plant. We should not neglect this important work. Plant beans, potatoes, etc., if your land is suitable, and right in the bean field plant an orchard, thus enlisting your land for permanent service to a world of hungry people.

Tree Planting has been held back this season by the continued dry weather. Now that heavy rainfall has covered the State get in readiness that piece of land you were thinking of planting.

## It's Not Too Late to Do It

Because the weather man was seeming to plan to checkmate the nurserymen by holding off rain until nursery stock was too far advanced to plant successfully, we have placed several carloads of fine deciduous nursery stock in *Cold Storage*, and have a competent man in constant attendance.

Wire, phone or write for reservation of what you can plant. We will send the trees when you are ready, in first-class condition for planting. You should get a perfect stand and a good season's growth. We have a good supply of trees in the varieties named herewith.

Do you know that we are growing in the San Joaquin and Sacramento Valleys and delivering annually more than *two million* plants to the orchardists and vineyardists of the West?

If it's a big order and you must have *results*, pass it to Kirkman—he will make the delivery *right*. We solicit orders for *commercial plantings*, and will give satisfaction.

**Nectarines**

**Figs**

**Walnuts**

**Olives**

**Oranges**

**Lemons**

**Pomelos**

**Etc.**



## Read What a Few of Our Customer Friends Say:

Sacramento, Calif., Dec. 15, 1917.

Dear Kirkman—Reserve for me the three thousand Orange Cling Peaches for this season.

The sixty-five thousand trees I have bought from you the past seven years are all true to name, and I know I have one of the best orchards in the state.

Yours truly,

EDWARD F. DALTON.

Fresno, Cal., Dec. 29, '17.

Kirkman Nurseries.

Gentlemen—I have just returned from looking over the seventy thousand Calimyrna fig trees I purchased from you for the J. C. Forkner Fig Gardens.

In my judgment these trees are the finest lot of fig trees ever grown in the state of California, possibly in the world.

You are to be commended for the splendid ability and enterprise shown in the growing of such a magnificent lot of nursery stock. Yours very truly

J. C. FORKNER.

Atascadero, Cal., Dec. 6, 1917.

Mr. Kirkman, Jr.,  
Fresno, Calif.

Dear Sir—During the past three years we have planted four thousand five hundred acres of trees from your nursery.

We have been satisfied, not only with the uniformly high grade of stock furnished by you, but even more so with your extremely fair business methods and the high principles which dictate your business dealings.

Yours very truly,

COLONY HOLDING CORPORATION,  
By E. C. Sears, Treasurer.

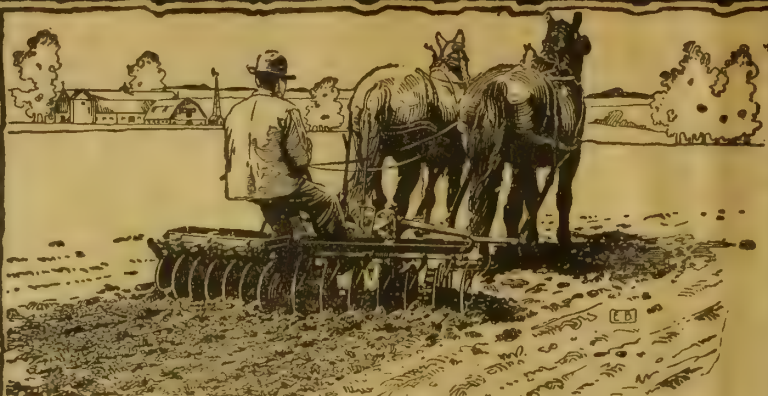
These three customers have bought a total of more than eighty thousand dollars worth of KIRKMAN TREES. We want your account also and will do our best to hold it year after year.

## Kirkman Nursery, Inc.

Established 1888

Office: Fresno, Cal.





## Still Better Tillage Tools

Deering—McCormick—Osborne

**H**AVE you seen the New Third Lever on a Deering, McCormick, or Osborne Three-Lever Disk Harrow? It is a depth regulator. With it you raise and lower the inner ends of the disk gangs to meet *all* field conditions. You do this quickly and easily, without in any degree destroying the rigidity of the gangs, for which International Harvester disks have always been famous.

Have you seen the New and Exclusive Attachment of the Tandem? This is another feature we are proud of. The connecting braces tie to both leading gangs, extending from the tandem in such a way that the gangs *must* cut the ridges left by the leading gangs. In turning corners, the sliding connecting braces allow natural flexibility and following of the tandem without crowding sidewise.

International Harvester disk harrows have done top-notch good work for many years. They have built-in weight boxes, adjustable forecarriage, 4-wear wood bushings, tall hard oilers, etc., etc. This year they are simply unbeatable.

When you want seed beds that are right, be sure your tools — disk harrows, peg and spring-tooth harrows, cultivators, etc. — are Deering, McCormick or Osborne. Write us.

**International Harvester Company of America**

(Incorporated)  
 Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.  
 Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah  
 San Francisco, Cal. Spokane, Wash.

## This Saw Cuts 25 Cords of Wood in One Day

It is absolutely guaranteed — hundreds in daily use.

Write for our booklet "How Dan Ross Cuts 40 Cords a Day".

Delivered anywhere in the U. S. A. only

\$165



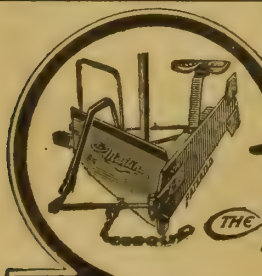
**Wade's**  
**Gasoline Wood Saw**  
 4 H. P. Engine (Portable)

This wonderful invention does TEN TIMES the work of TWO MEN in the woods.

With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a 40 inch log in five minutes. Write us today.

**REWADE & CO.**  
 SINCE 1865

339 Hawthorne Ave., Portland, Ore.  
 810 N. Howard St., Spokane, Wa.



## Solve THE LABOR PROBLEM

Here is the farm tool that has solved the labor problem as to making and cleaning ditches, grading roads, terracing and levee building.

**DITCHER & GRADER** used exclusively by thousands of farmers and ranchers in 48 states. Gives satisfaction wherever used. Does the work of 50 men. Does it quick.

**Simple—Practical—Efficient**

All steel, reversible, adjustable. Long life. No repair bills. Size for every requirement. Write for catalog and list of users near you free.

**OWENSBORO DITCHER & GRADER CO., INC.**  
 1570 Wazee Street Denver, Colo.

Every Martin is Sold On TEN DAYS' TRIAL Money-Back Guarantee

Corys

## THORNLESS

### Blackberry

Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

**Ekstein Nurseries**

Modesto

California

When writing advertisers, mention The Cultivator.

## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Winter Crops on Alfalfa

A subscriber has inquired as to growing vetch or other winter crops in alfalfa field and renewing at the same time the alfalfa. The question was referred to Mr. Bomberger of Green Gold Ranch. He writes:

"To grow a crop by disking or harrowing the seed in an old alfalfa field, the crop must be of such a nature that it will start and grow at a lower temperature than alfalfa. For instance, if barley seed is disked or harrowed in during late fall or winter it will make considerable growth during the winter while the alfalfa remains practically dormant; because barley grows at a lower temperature than alfalfa. This too shows the importance of putting in such seed sufficiently long enough before the spring growth of alfalfa starts to give the young barley plants a good start before the alfalfa starts out. Plants that cannot grow at a lower temperature than alfalfa, cannot compete with alfalfa for space, and any seed sown late in winter in an alfalfa field is apt to fail. Another fact to be kept in mind in this connection is that when the seeded-in crop does well, the alfalfa will do correspondingly poorly so long as the seeded-in crop is growing. As a rule the most practical way to renovate an old alfalfa field is to plow it up, and grow other crops for a few years."

### Rabbits Like Beans

Do rabbits bother Blackeye pea vines at any stage of growth? Many in this district would plant if they could be assured that the crop could escape the rabbits. — Subscriber, Fresno.

So far as we have been informed rabbits take pretty nearly everything when it is growing lush and tender. About the only protection from this pest is fencing or organizing a large campaign of poisoning or rabbit drives. Wipe out the pests.

### Land Settlement

The Cultivator has referred to the land settlement commission and its work in the new plot of land selected in Butte County. Nearly every mail brings inquiry as to where to secure information. Write Dr. Elwood Mead, University of California, Berkeley. We may say, however, regarding this land that there are already filed with the commission applications for more land than the commission has to distribute. We believe determining factors in accepting applicants will be general qualifications, farming experience and working capital.

### Goose Eggs

How long does it take to hatch goose eggs in an incubator? When do we have to put in the moisture? Do geese lay every day till they have laid their clutch out or how often do they lay? Should the little ones be kept in a warm brooder, and what should I feed them? — Subscriber, Los Angeles.

It takes 30 days to hatch goose eggs, whether they are under hens or in an incubator. I think that in using the incubator the moisture is put in about the nineteenth day, just as hatching begins, but your direction book will tell exactly. If you have lost your book you can get a new one from the incubator agents. No

one should use an incubator without following carefully the direction in the book.

Geese differ in their laying, just as hens do, but a good goose can generally be counted on to lay every other day. Goslings need a warm brooder the first two or three weeks, but they grow very rapidly and learn to do without heat earlier than chicks would. They are rather slow about beginning to eat. Let them be warm and quiet the first two days or even longer if they do not act hungry. A mash of equal parts corn meal and bran, moistened with water till it is crumbly but not sloppy is a good ration for goslings. Feed four times daily at first. Let them have green feeds as soon as they will eat it, which will not be for a week or so, unless the green is very tender. Goslings are very easy to raise if only they are kept warm and dry. — J. A. K.

### Rough Skinned Fruit

I have quite a number of Washington navel orange trees, the fruit of which is becoming woody and thick rough skinned. I have talked to several horticulturists about this condition and they all seem to give me a different line of treatment. Will you kindly advise me, if it is within your power, what is the proper method to pursue to eliminate this condition. — Subscriber, Sacramento.

This is more of an indication of undesirable type than it is an indication of soil or physical conditions. Of course it may be that in severe climatic conditions it would be impossible to produce a fine thin skinned orange, that is continued cold weather or other conditions which were not suitable to the orange, would prevent high quality, but in the study of sport fruits and undesirable types, which has been taken up by the department of agriculture, through A. D. Shamel, it has been found that fertilizing or giving best of soil tilth is unavailing in correcting this unsatisfactory condition. If climatic conditions are such that these trees should give a thinner skinned, smoother fruit, then rebudding to the smooth, thinner skinned type of fruit is the only procedure.

### Yellow Melilotus

Does yellow melilotus clover cut and cured, make good hay for cows? Feed is so high we feel we must save every item. — Subscriber, Yorba Linda.

Yellow melilotus is not so palatable as alfalfa but makes fairly good hay. Its digestible nutrients are shown to be crude protein, ten; carbohydrates, 35.9; fat, 0.5 and its nutritive ratio 3.7; total, 47. From strict analysis standpoint, it is almost as good as alfalfa hay.

### CACTUS

We note in the Agricultural Gazette of New South Wales, spraying experiments to destroy the prickly pear. Californians have some experience in the matter of disposing of this pest, the usual method here being to fork into winrows and after months of drying, burning the piles. Although slightly more expensive this spraying method, it gives quicker action and use of the land. In spraying, commercial arsenate of soda is used, 20 pounds to 100 pounds of water, but only about 12 gallons used per acre. After a light spraying segments of the cactus being dry and a fibrous or woody structure opens permitting the loss of nearly all of the water from the plants and makes early burning possible. The Gazette says:

"In spraying with arsenic there is great advantage in using a concentrated spray, since water-carriage is



saved and the death of the pear accelerated. Hand labor, however, cannot be avoided; and expensive as this is, there can be no question that it is the duty and interest of every landowner to eradicate the pear from lightly infested country. To neglect it is to tolerate an enemy that tolls every day and every night, increasing in might month by month."

In this connection we may say that California may possibly find use for this pest. We saw only recently, a product of dehydrated cactus leaves, ground into a product somewhat resembling coarse corn meal, containing of course the minimum of water, which it was stated would analyze high and could be sold somewhere between \$20 and \$30 per ton. If this could be made, possibly it will be far better in these times of high priced feed to use the plant this way rather than destroy by poisoning and burning.

Book Review

FARM MECHANICS

Farm Mechanics, Machinery and Its Use to Save Hand Labor on the Farm, by Herbert A. Shearer, published by Frederick J. Drake & Co., Chicago, \$1.00.

A handy little book of large pocket size, 250 pages filled with illustrations of tools, implements and labor saving devices. It is not an edition de luxe, but packed full of helpful hints for every farmer, especially if he has a bit of inclination toward "jack of all trades." There are eight chapters touching upon Shop with Tools for Working Wood and Iron; Farm Shop Work; Generating Power; Driven Machines; Working the Soil; Handling the Hay Crop; Farm Conveyances; Miscellaneous Farm Conveniences and a good index. Preface says: "More mechanical knowledge is required on the farm than in any other line of business. If a farmer is not mechanically inclined, he is under the necessity of employing someone who is. Some farms are supplied with a great many handy contrivances to save labor. Farmers differ a great deal in this respect. Some are natural mechanics, some learn how to buy and how to operate the best farm machinery, while others are still living in the past.

"Some farmers who make the least pretensions have the best machinery and implements. They may not be good mechanics, but they have an eye to the value of labor saving tools."

GRAPE CUTTING

We recently inserted a notice of the fact that the state viticultural commission is distributing cuttings of new grapes and it has been misunderstood by some of our subscribers and the Cultivator has had various requests for these cuttings. Do not write this paper for these cuttings, write E. M. Sheehan, Secretary State Board of Viticultural Commissioners, State Capitol, Sacramento. We may add, however, that we have a letter from Secretary Sheehan stating that more than 850 applications have been made for these cuttings and that the supply is now nearly exhausted. Mr. Sheehan adds "We might add also that a very great number of them referred to the Cultivator and as having seen the published notice of the distribution of cuttings in your journal."

HE STOPPED TO THINK

At the corner of Millwood and Orosi roads in Tulare county, lives Mr. W. C. Stafford, a native son who has basked in over three score and ten years of California sunshine. His chickens roosted in some oaks near the house and nearly every night one of them was carried off with maybe a squawk or two.

Did the old gentleman fuss and swear? Unfortunately a native son cannot swear, so he stopped to think. Ah ha, those who stop to think never fail to win. Some tall poles were erected above the highest limbs and on the tops of these small steel traps were set unbaited. Since then four big owls and two hawks have come down those poles never to again steal chickens which are now almost worth their weight in feed. Contented fowls. Happy old man. Foolish dead birds. He stopped to think—F. L. K.



## Proved Worthy Beyond Question

THREE distinct tendencies in modern motor car construction were visible in the new models displayed at the recent metropolitan automobile shows.

Briefly, these three tendencies were concerned with more efficient power, lighter car weight, and greater economy of operation.

Every one of these qualities has been a pronounced characteristic of Oakland Sensible Six models during the past three years.

The high-speed overhead-valve engine of the Oakland Sensible Six delivers 44 horsepower at 2600 r.p.m., or one full horsepower to every 48 pounds of car weight.

The high carburetion efficiency of the engine gives from eighteen to twenty-five miles to the gallon of gasoline. The 32 x 4 tires, extra large for the light weight of this car, are giving 8,000 to 12,000 miles per tire.

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No pains have been spared to make the car handsome in proportion and finish; it is unusually roomy and accessible, and upholstered throughout in genuine leather.

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PONTIAC, MICHIGAN

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F. O. B. Pacific Coast Terminal Points

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Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established  
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**Saturday, March 9, 1918****OUR ADVERTISERS RELIABLE**

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

The citrus fair holds place of honor on the cover this issue. San Bernardino people have occasion to be proud of their great annual event. This was the eighth show and "best of all" is the least people who attended will say of it. With California's citrus industry bringing to the state from thirty to fifty million dollars annually, it is well worth the honor of this great annual event.

**PLANT NOW**

The deciduous orchardist who has not filled in the vacancies in the orchard, or who has not yet planted the section which he contemplated planting to orchard trees this season should surely get busy. Rains are falling, sun is shining, and buds are swelling, and every deciduous tree should be making root these spring days but it is not too late for the planting which was neglected, so get busy now.

Also citrus orchardists are beginning to think of their extra planting. March is an excellent planting month. Some prefer May, but "do it now."

Recent rains have made possible planting of thousands of acres of orchards which would not have been planted had they not come and the days have been busy.

**R. P. CUNDIFF**

The state has lost one of its most efficient workers. R. P. Cundiff, for 15 years, horticultural commissioner of Riverside County, of which county he was also a pioneer having located there in 1875 and was more recently northern field deputy state horticultural commissioner, as assistant to State Commissioner Hecke, died Wednesday, February 27.

Mr. Cundiff was ill only a few days, but dread pneumonia proved more than even his rugged body could endure.

Regarding Mr. Cundiff, Commissioner Hecke writes: "There are many reasons why we feel a great loss at Mr. Cundiff's death, not the least of which is the esteem we bore for the man himself. He was a true friend, one who loved his work, and who always stood for what was right in private life and in business. The county horticultural commissioners of the state to whom he was so well known will, with us, feel a deep sorrow because of his passing."

**INCOME TAX**

The Cultivator is glad to know that in some cases it has saved trouble for some of its subscribers in the matter of making return to the Income Tax Collector and we are glad also to note that every one who has gone to the internal revenue collector's office for information has found not only courteous treatment but a desire shown on the part of the collectors to give fullest information and explain the most complicated question. Thousands have reported as to income tax this year who a year ago had no idea they would ever have occasion to make such a report. This is because of a war, which a year ago looked to us would be a most simple matter, for America is so great a nation, and American's appreciation of their own country is so great that we all felt that for America to make to make one big "boo!" would be sufficient. We have now settled down to the conviction that we have taken one great big job. We are not sorry for our bargain. There is no true American who would ask of our nation to turn back. In fact we are glorying in the task before us and in our ability to meet the situation, so we are paying and paying willingly, be it in the form of the direct income tax, or through the purchase of War Savings Stamps or of Liberty Bonds, and we would indeed be unworthy our liberties if we were not, in face of the fact that millions of our brightest and best boys are offering to go "over the top," if we will simply provide the means.

Again as to the Income Tax, just a word. Before the end of this year, the war's demand on this nation has been estimated to reach the enormous sum of \$36,000,000,000, an expression which means not so much to us as 36 cents which is within our physical and mental grasp.

We recently heard Internal Revenue Collector John P. Carter, of the sixth district of California, Los Angeles, in an address to business men touch upon the needs of the war and the amount of money required to conduct the war, give this graphic description of this immense sum of money.

"Counting paper money at 100 thicknesses to the inch, the following figures are applicable: 100 goes into a million, (dollar bills) 10,000 times, or 10,000 inches to the million, through the thickness of the bills, and not through the length or breadth thereof; divide by 12 the number of inches in a foot, gives you 833 feet to the million. A billion is just a thousand times that, or 833 thousand feet, which divided by 5280 feet—the number of feet in a mile, gives you 157 miles to the billion, through the thickness thereof, and not through the length or breadth. Thirty-six times 157 miles is 5652 miles, or a

string of One Dollar bills set on edge and measured through the thickness thereof, reaching from Honolulu, 2100 miles across the Pacific to San Francisco, and then 3250 miles to New York, and 302 miles out to sea."

Now that we have an idea of the problem confronting our government, "render unto Caesar the things that be Caesar's."

**USE POWER**

We have referred often to helping in the present strenuous labor situation by fitting the ranch with tractors, gas engines, or any form of power which will do more work with less man power.

Incidentally may we not refer to the wind mill. It is but little used in California but it has possibilities and with gas going up and with no material advance on wind, as yet, may we not give more consideration to this force of nature?

**This Week's War News**

It has been a week of quiet in northern Italy, at Salonica, Jerusalem and Bagdad.

Boy Scouts the country over have made this a week to secure funds to perfect that organization in its valuable work.

Trade relations have been arranged between America and Spain which brings Spain into much closer relation with the Allies.

Submarine activities have not been so great during the last week. It is known that the submarines have suffered some severe losses.

R. S. Lovett of the Union Pacific has been chosen to decide on betterments needed in American railways to put them on a war footing.

The Japanese forces will probably enter Siberia. Some reports are in circulation that they are already in charge of Vladivostok. Whether this is with approval of Washington is as yet unannounced.

Anarchy is rampant all over Russia. It is rumored that Articles of Peace have been signed by the Bolsheviks and that Russia has agreed to pay an indemnity of \$4,000,000,000, allow Germany to have control of all Baltic provinces, and much other territory to the south. Notwithstanding the peace agreement, the Teutons are still marching toward Petrograd and the Slavs are evacuating as rapidly as possible.

This has been an active week in the drive on American pacifists. The country generally is appealing for more vigorous action. There has been found in a center of New York a wireless plant in full operation, of sufficient power to permit direct communication with Berlin. In Los Angeles, a raid was made on "bible students" who were followers of "Pastor" Russell. Many volumes of "Pastor" Russell's alleged seditious works were confiscated.

The Sammies have been under severe test during the last week. There has been no great battle, but the Teutons have made many attacks with barrage and gasses in the evident effort to harass and break the nerve of American soldiers. So far as reports indicate it has had the reverse effect and the boys in the trenches are begging for a chance, and so far as given to them they have acquitted themselves with honor. It is now known that the American troops are filling the trenches of a sector of considerable length near Verdun.

**1918  
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# Agricultural News Notes of the Pacific Coast

Northern California

Central California

Southern California

The Coast and General

The Hayward Pigeon and Pet stock Club is increasing its membership.

Sacramento Valley has purchased more tractors than in any preceding year.

Two large lumber mills are being erected near Susanville, Lassen County.

Humboldt County has over 2000 tons of high quality potatoes to dispose of.

The olive packing plant at Oroville is planning for general run on vegetables this summer.

Lake County is surveying for new highway between Lakeport and Hopland, Mendocino County.

The Surprise Valley Irrigation project in Modoc County has been pronounced feasible by engineers.

Millions of lady bugs are being captured as the snow melts away in the canyons along the Feather River.

The Western Berkshire Congress at Davis last week brought practically all Berkshire breeders of the state together.

Farm bureau men of the state will meet at Berkeley, March 11 and plan a great campaign for the coming summer.

Dr. C. L. Roadhouse has been appointed head of the Dairy Industry Division, University of California with headquarters at Davis.

Large plantings of vetch were made in Placer County. Other comparatively new crops which have been planted recently are sudan and sweet sorghum.

The Rice Growers Association has nearly 2,000,000 bags of rice in transit to markets and the indications are that 130,000 acres will be planted this spring.

Harry Stabler of Sutter County, dean of the county horticultural commissioners of California, has retired from office and has been succeeded by Ross Knight.

The supreme court has decided that counties and others losing because of the 1916 fire on the state fair grounds may not recover from the state value of the exhibits lost.

A Porterville orchardist has sued for damages because of trees not true to name.

Tulare County farm bureau recently arranged a farmer's patriotic rally and lecture.

San Joaquin Valley users of "juice" are protesting rates made by electric companies.

Orchardists at Terra Bella, Tulare County are planting largely to olives and muscat grapes.

Grubb, the potato expert, recently delivered a lecture before Santa Cruz and Monterey Counties potato growers.

Oakdale, Stanislaus County, reports its largest crop of grain ever planted as looking exceptionally fine since the recent rains.

Prospective bean planters are urged to place orders for beans for seed early if they want to be sure of getting a supply.

A Monterey County live stock man recently purchased hay at \$35 per ton, which was stolen before he could feed it to his animals.

Tulare dairymen have endorsed the San Joaquin Valley Milk Producers Association also of affiliating with the state association.

An irrigation project which will water a tract of 10,000 acres north of Sharon, Madera County, is being planned by eastern capitalists.

Beekeepers of Monterey County met in Monterey, Saturday, March 2. Experts of the United States department of agriculture were present.

Salida, Stanislaus County, is hoping for a new cannery. Fifteen dollars per ton on tomatoes is promised if acreage sufficient may be secured.

Modesto irrigators are urging their directors to reconsider their action in rejecting the proposition of Turlock in regard to the Don Pedro reservoir dam.

Alfalfa growers of Oakdale, Stanislaus County are planning an efficiency campaign in "changing work" and securing additional help so as to satisfactorily harvest big crop the coming season.

Oranges are selling at a price seldom seen in this country.

More interest is being manifested in peanut production than for many years.

Ventura County is now completing exceptionally fine system of county highways.

A branch of the California Milk Producers' Association, is to be formed in Imperial County.

Dairymen of Imperial Valley have formed the Imperial County Milk Producers Association.

Tomato growers near Escondido, San Diego County are contracting to plant 500 acres for cannery.

Experts of department of agriculture are testing out different types of cotton in Blythe, Imperial County section.

The great wine grape vineyards between San Bernardino and Ontario are to give place to deciduous orchards.

Apricot growers of Ventura County Dried Fruit Association are still receiving returns from last season's shipments.

Chino, San Bernardino County, has the rest of the state smiling because it has "fallen for" the charms of the "rain maker."

Imperial Valley reports most of its last season's barley crop as out of the warehouses, and the stacks of milo materially reduced.

Mike Liebert is president and A. E. Madison, secretary of the farm bureau of Imperial County. The total membership is now 600.

The Victorville section of San Bernardino County will produce large crops of beans. Apple orchards, especially will be interplanted.

The Carpinteria, Santa Barbara County, Walnut Growers' Association met at Carpinteria and listened to the annual report of Secretary Young.

Victorville grain growers are disking for late sown grain instead of plowing. They have found this far more economical and fully as effective.

A new grain elevator is to be built at Bates Station, Oregon.

Great Britain's hog population has decreased over 600,000.

Twin Falls, Idaho, is vaccinating hundreds of head of cattle for black leg.

A stockman of Ephrata, Washington, has a sheep barn capable of housing 10,000.

Farm laborers near Walla Walla, Washington, are receiving \$30 to \$35 a month and board.

Oregon State Poultry Association has resolved to do its utmost in increasing food production.

The Horticultural Union of Yakima, Washington, did a business last year aggregating over \$1,000,000.

Wool stocks on hand in the United States at the beginning of the year aggregated about 562,000,000 pounds.

The Royal Dairy Products Company has been organized at Bellingham, Washington, with a capitalization of \$100,000. A milk condensary will be built at once.

The consumption of sugar during 1917 was 88.3 pounds per capita, whereas the average annual consumption for the preceding five years was 84.7 pounds.

Farm machinery week was observed in nearly every state. Farmers did repairing and ordered new parts for mowers, reapers and all implements which may be used months later.

The United States fuel administration is considering the advisability of "skip-stop" schedules for all electric railways so that there shall be not more than eight stops per mile. This will save fuel as it takes three times as much power to stop and start an electric car as to run it for one block.

Employers of labor in the East are uniting in suggesting that they will appoint representatives of their organizations providing the representatives of the labor unions will do the same, that all differences between labor and capital may be settled while labor is being continued to its fullest —this as a war measure.

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**SERVICE AUTO EQUIPMENT CO.**  
941 Traders Bldg., Kansas City, Mo.

When writing advertisers, mention the Cultivator.

## Cauliflower and Broccoli Production on the Pacific Coast

By R. G. Risser, Assistant Crop Specialist, United States Bureau of Crop Estimates



**C**AULIFLOWER is so exacting in its requirements that its commercial production is limited to few localities in the United States, and when the last census was made in 1910 California was shown to be second only to New York in acreage. The census figures showed New York to have 1720 acres; California, 790 acres; and Illinois, which ranked third, 127 acres. Since then there has been a remarkable extension of the California area of cauliflower, and the crop has come to be one of the principal vegetables grown on the Pacific Coast for Eastern shipment. It has been produced in a limited way in several different districts, but the section south of Los Angeles has been the big cauliflower area of the state, and the section immediately south of San Francisco has been the main producer of broccoli.

was apparent as early as October and has increased greatly since then. The drouth has affected the quality, color, solidity, and size of heads. It has increased the percentage of culls and reduced the yield per acre. It has accentuated damage from aphids and brought alkali to the surface from the use of large quantities of irrigation water. It also delayed the maturity of the crop. In spite of the big acreage, shipments in November of 1917 were only 20 per cent as heavy as those of November, 1916 and shipments in December, 1917 were only 60 per cent as heavy as those of December, 1916, while shipments in January, 1918 exceeded those of January, 1917. Estimates of tonnage have been reduced repeatedly. On account of extensive late plantings it was at first expected that the late shipments from the Compton district south of Los Angeles would be heavy, but serious damage



Vigorous Growth of Cauliflower

The lush growth in this cauliflower is shown by comparing to height of Mr. Yingling who is standing in the field. Mr. Yingling has 32 acres, practically every one showing as fine growth as indicated in this photo. His place is near Compton, Los Angeles County.

Broccoli has also attracted considerable attention in the Umqua Valley of Oregon and is grown in a small way near Sacramento and Stockton. Imperial Valley is trying cauliflower more extensively than in past years and Alameda County is taking up broccoli production also.

The estimated acreage of cauliflower and broccoli is as follows:

	1916-7	1917-8
Los Angeles County	3200	4800
Orange County	40	100
Imperial County	15	165
San Mateo County	1100	1600
Alameda County	90	300
Scattering California Counties	130	150
Total for California	4575	7115
State of Oregon	400	200
	4975	7315

### Shipping Season

The shipping season of each of the three principal shipping districts is shown by the following table which indicates the percentage of the total crop moved each month during the last season:

Southern California, 1916: November, 12; December, 20; January, 36; February, 15; 1917: March, 4; April, 1.5; May, 2; June, 1.

Central California, 1916: November, 1; December, 3; January, 5; February, 36; 1917: March, 47; April, 6; May, 0.5.

Oregon, 1917: March, 1; April, 99. Oregon last year was about one month late. In general the shipping season varies considerably depending upon rainfall and temperature.

### Growing Season

The growing season for cauliflower and broccoli on the Pacific Coast for the year 1917-18 has been decidedly unfavorable. Rains which are so desirable for the sensitive plants have not materialized in adequate quantity. The normal seasonal rainfall for Los Angeles to February 1 is 8.05 inches. This season it has been .93 inches or 7.12 inches short of normal. The effect of the shortage of rainfall

to the growing plants by a general infestation of aphids has reduced the prospects for heavy late shipments.

In the central portion of the state the effect of the abnormally dry season was also serious. The crop grown without irrigation was reduced to about 60 per cent of normal.

In Oregon the broccoli crop was cut short by hot dry weather at the time of transplanting in June and July and additional dry weather during the fall months. The winter has been mild, however, and the winter damage from freezing which occurred in 1916 and 1917 has not been done this year hence plants are now reported to be in good growing condition.

### The Present Situation

A half an inch of rain in January made a temporary improvement in the quality of the Los Angeles and Compton product and further benefit from a shower the first week of February resulted. The rains and light frosts have aided in the control of the aphids and with spraying and parasitic enemies the insects are now well checked. A few growers who have favorable soil and have supplied ample water for irrigation are getting some good shipping stock, but on the whole the quality is variable and the average is below normal.

The peak load of the southern district was reached with approximately 150 cars shipped out the last week of January, and a decline in shipments has followed. Chinese growers who control the bulk of the early crop are nearly through shipping and American growers are well started. Many fields show discolored leaves, and a portion of the late acreage has been abandoned.

Central California broccoli has not been affected by excessive rains as it frequently is and the mild weather with fogs has been favorable. Shipments are expected to be heavy from now on. In general, the quality is not equal to the Los Angeles product. The absence of sufficient rains has stunted

Continued on Page 319



# REO

"THE GOLD STANDARD  
OF VALUES"

## A Seven Passenger Six That You Can Afford

### THE GOLD STANDARD OF VALUES

#### Salient Features of the Reo Six

50 HORSE POWER, Six-cylinder motor cast in threes.

REO DESIGNED, Reo made—throughout.

126 INCH Wheel Base.

CANTILEVER rear springs—Semi-elliptic front springs.

FULL FLOATING rear axle.

TIMKEN BEARINGS throughout.

NOISELESS spiral-bevel driving gears.

REO ONE-ROD centre control.

HYATT QUIET bearings in transmission—at all points.

MULTIPLE Dry-disc clutch.

BOTH BRAKES operated by foot levers and provided with ratchet locks. Extra large and both operating on rear hubs. No hand brake.

CLUTCH AND SERVICE brake are interconnected.

TWO UNIVERSAL Joints in drive shaft.

TORQUE SHAFT relieves driving mechanism of road stresses.

SUB FRAME carries motor and transmission.

EXTRA LARGE—and round—spokes in wheels.

OVER-SIZE TIRES—34 in. x 4½ in.

PERFECT LUBRICATION at every moving point.

REO RADIATOR—Reo designed, Reo made.

REO-REMY Electric Starting, Lighting and Ignition system.

REO STEERING GEAR—exclusively Reo. No back-lash—self-adjusting for wear. Positive.

50 PER CENT OVERSIZE in all vital parts—crank-shaft, axles, driving shafts, gears, frame, wheels, tires.

NET RESULT—Reo upkeep equalled by no other 7-passenger car.

WE ARE NOT THINKING of the price—for that isn't the primary consideration in the selection of a car.

YOU KNOW YOUR OWN NEEDS—whether a five passenger car is sufficient, or if you really need, at times, room for more.

AND YOU KNOW better than anyone else can tell you, what your price limit is.

AND SURELY AT ITS PRICE this Reo Six is the greatest value obtainable in a car of established reputation.

AND REO REPUTATION is second to none.

WHEN WE SAY "Here is a seven-passenger Six that you can afford," we are thinking of the same item that you, an experienced motorist, are considering—

NAMELY—UPKEEP. That is the first thing to consider in the selection of an automobile.

CERTAINLY YOU CAN afford to own a seven-passenger car—and you can treat yourself to the luxury of a sweet-running, silent Six—if you can feel that not only in first cost but also in cost of upkeep it will be well within your means and accord with your ideas.

ASK ANY REO SIX OWNER to tell you of the upkeep cost of his Six—and the longer he has owned and the farther he has driven his Reo, the better will his answer sound.

HE WILL TELL YOU that, having compared notes with friends who own and drive other makes of cars—fours as well as sixes—of the same passenger capacity, he has never found one that compared with his Reo Six in low cost of upkeep.

AND HE'LL TELL YOU, too, that he has yet to find even a five-passenger car—four or six—the operation, repairs, replacements and general upkeep cost of which proved as low as his Reo Six—except one the five-passenger Reo.

NATURALLY a five passenger car ought to be cheaper to maintain than one of seven-passenger capacity—but most are not, when you look up the figures.

REO DEALERS TELL US that their records for the past three years show that Reo Six owners on the average have paid less than eight dollars per car per year for replacement parts.

JUST READ THAT AGAIN—with thousands of Reo Sixes running in all parts of the country, over all kinds of roads and handled by all kinds of skilled and unskilled drivers; most of them owner driven and owner cared for (or neglected)—

THE AVERAGE COST per car, per year, for replacement parts was less than eight dollars!

FRANKLY WE DON'T believe that record can be equalled by any other seven-passenger car on earth.

AND WE MAY ADD that the records on the five-passenger Reo show less than seven dollars per car.

THE SAME QUALITY—the same sound engineering; the same ripe experience; the same attention to little details and the same construction, inspection and testing of every car enter into the making of all Reo models.

COST OF UPKEEP is always uppermost in the minds of Reo engineers, when designing and when specifying materials. And since the same desire is uppermost in the minds of the most experienced buyers—we meet on a common ground.

WE ARE FRANK TO ADMIT that to a large extent the phenomenally low cost of upkeep of Reos is due to the fact that Reo buyers are, as a class, better informed and more careful in their selection than the average.

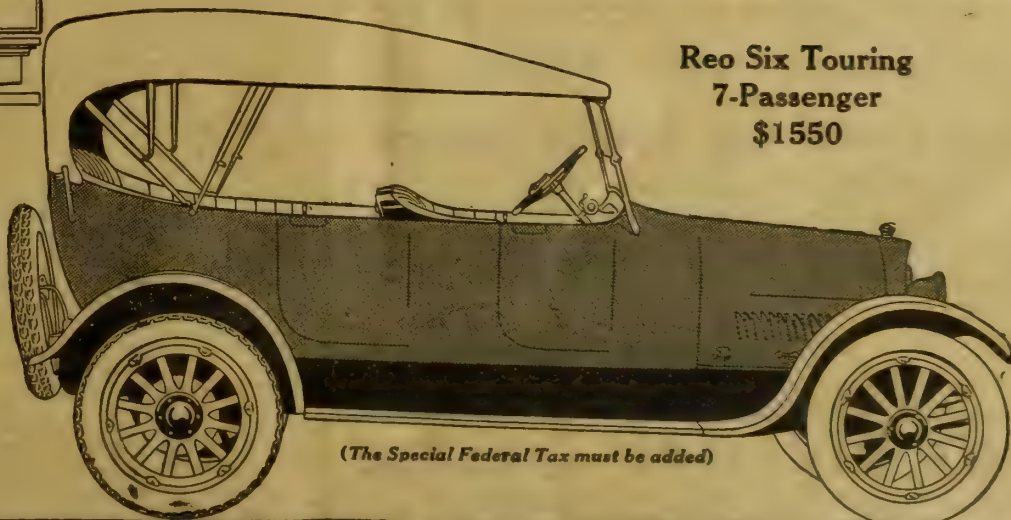
REOS DO NOT APPEAL to those who look only to superficials—Reos are built for connoisseurs and Reo owners are mostly men of ripe experience in motoring. They, therefore, combine prudence with intelligence in their choosing of an automobile.

IF YOU ARE ONE of that kind, we say to you, here is a magnificent, luxurious, seven-passenger six that, both in first cost and cost of upkeep, you can well afford to own.

REO EFFICIENCY sets the price lower—Reo quality guarantees low upkeep.

Reo Motor Car Company, Lansing, Mich.

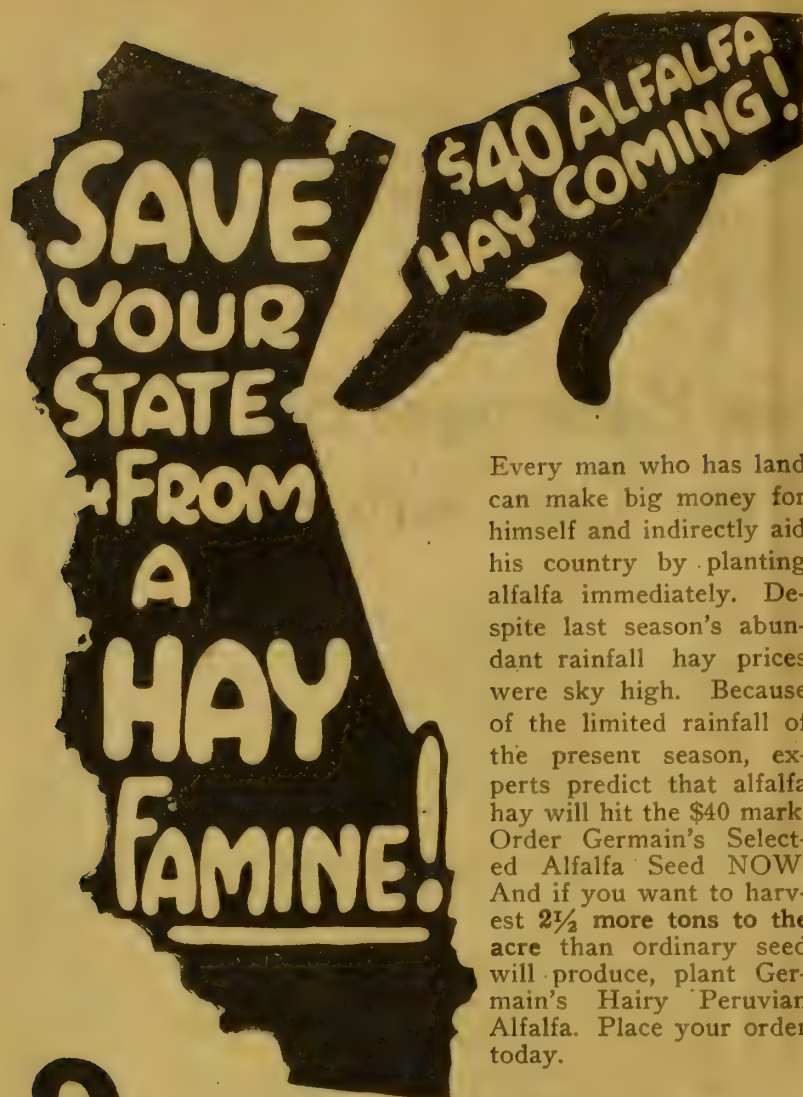
Reo Six Touring  
7-Passenger  
\$1550



(The Special Federal Tax must be added)

PRICE IS F. O. B. LANSING AND  
SUBJECT TO INCREASE  
WITHOUT NOTICE





SAVE YOUR STATE FROM A HAY FAMINE!

\$40 ALFALFA HAY COMING!

Every man who has land can make big money for himself and indirectly aid his country by planting alfalfa immediately. Despite last season's abundant rainfall hay prices were sky high. Because of the limited rainfall of the present season, experts predict that alfalfa hay will hit the \$40 mark. Order Germain's Selected Alfalfa Seed NOW. And if you want to harvest  $2\frac{1}{2}$  more tons to the acre than ordinary seed will produce, plant Germain's Hairy Peruvian Alfalfa. Place your order today.

# Plant Alfalfa and harvest a Crop of GOLD!



Note Send your order today for our big FREE 1918 Seed Catalog. It tells you all about what to plant and how to plant it.

**Germain**  
Established 1871  
**Seed & Plant Co.**  
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SOUTH MAIN STREET  
LOS ANGELES -- CAL.

## Hereford Cattle Sale

by the

### Pacific Coast Hereford Cattle Breeders Association

University Farm, Davis, Cal. Wednesday, April 10, 1918

This offering will be made up of about 45 females and 40 bulls. All Western bred. Consignors to the sale: Cazler & Sons, Wells, Nevada; H. M. Barngrover, Santa Clara; H. H. Gable, Esparto; W. J. Bemmerly, Woodland; D. O. Lively, Mayfield; Dean Duke, Likely; Simon Newman Co., Newman, California.

Fred Reppert, Auctioneer.

Write for catalog to:

D. O. LIVELY

216 Hearst Bldg., San Francisco, Cal.

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

When writing advertisers, mention The Cultivator.

## Who's Who

With the issue of August 11 the Cultivator started its series of "Who's Who" articles to bring before its readers some of the livestock producers of California who are responsible for the large development of the industry. Where did they come from and how long have they been engaged in California development, also how do they look, so pencil and camera are to be used, and some homely, everyday photographs and notes regarding them will bring us closer together. Bear in mind we say "homely photographs" and not photographs of homely people. The idea we wish to convey is that so far as possible we will secure photographs in everyday surroundings at the homes of the livestock producers.

Written for California Cultivator By C. A. Briggs

### WM. BERNSTEIN



WILL BERNSTEIN was born on a farm in Morrow, Ohio, April 9, 1873. His early years were all spent in the Middle West where he obtained his schooling, graduating from the Holbrook Normal School at Lebanon, Ohio. Mr. Bernstein taught in



Wm. Bernstein

that state for three years but finally decided that California held out great inducements for a young man. He came to Hanford, Kings County in May, 1897, where he engaged in his present business of confectioner and baker.

Among Poland-China swine breeders Mr. Bernstein has high rank. He started as a breeder about eight years ago and has had marked success both in breeding and in the show ring. That he came naturally by his ability in this line is shown by the fact that his father, George Bernstein, was a pioneer swine breeder and one of the first, if not the first breeder, of Poland-Chinas in Ohio. Many of the earliest swine breeders of that state got their first start with some of the Bernstein Poland-Chinas. His son "Will" early learned to appreciate the profit producing points of his favorite hog and has never seen any reason to change his mind. "He is strong in the faith."

Happiness and honor have been a portion of his lot in life, the first when he married Mary P. Trehwitt of Hanford on May 28, 1902, the others scattered along pretty much all the way in offices and responsibilities, all of which he has filled and carried well. He now holds the position of president of the California Poland-China Breeders' Association and is also president of the Kings County chamber of commerce. He is a Mason and a Shriner, and, best of all, a splendid friend to his friends, who are numberless. He is a hard fighter and worker to further the interests of his chosen breed, and has done much and will do more to advance the interests of California live stock.

### CATTLE DISEASE

The University of Minnesota through its veterinary division reports a new cattle disease which it is feared may prove serious. It is called Johne's disease.

The disease is scientifically known as chronic pseudo-tuberculosis enteritis, and is caused by a multiplication in the intestinal mucous membrane and mesenteric glands of a specific micro-organism known as Johne's

bacillus, which produces a diffuse thickening of the bowel and an interference with food absorption, leading to diarrhea and wasting.

Veterinarians say there is no known remedy and urge immediate reports of indications of its appearance.

## CUTTER'S Blackleg Filtrate and Blackleg Tissue Aggressin

*The New, Safe  
and Efficient Agents  
for Protecting Calves  
from Blackleg.*

Cutter's Blackleg Filtrate positively protects against Blackleg.

Cutter's Blackleg Aggressin, made directly from animal tissues, affords even greater protection.

Neither the Filtrate nor the Aggressin can possibly produce Blackleg in even the most susceptible animals.

These products will probably never supplant Blackleg Vaccine. Still, under some conditions, they have advantages that should be known to every stockraiser.

Write us for full information regarding them.

THE CUTTER LABORATORY,  
Berkeley, California.

"The Laboratory that knows how"



**Sound Legs  
Pull Big Loads**

No horse with a Spavin, Splint, Curb, Ringbone, Bony Growth or Sprain, can do himself justice. Often these ailments put a horse out of commission. Thousands of farmers and horsemen have been keeping their horses sound by using Kendall's Spavin Treatment—the old reliable, safe remedy. We have many letters like these to prove it. Wm. Lucciarone, Hubbard, Ohio, writes: "I have a horse that had a sore leg for about two weeks and could not get cured. One day one of my neighbors told me that Kendall's Spavin Treatment would be a good remedy. So I got a bottle and it saved me a horse. I will never be without Kendall's Spavin Treatment in my stable."

## KENDALL'S SPAVIN TREATMENT

Known for 40 Years as Kendall's Spavin Cure keeps the horses working—making money in the field instead of "teating their heads off." It acts quickly, leaves no scars or blemishes and costs little. Don't risk experiments with unknown, untried brands when Kendall's costs no more (often less.)

Be ready for any emergency. Keep a bottle of Kendall's in the barn. Then if anything should lame your horse you can apply it quickly and save big money as others have done and are doing. Tear this advertisement out to remind you to get Kendall's Spavin Treatment next time you go to town.

Price \$1.10 per bottle—6 bottles \$5.50. Ask druggist for free book "Treatise on the Horse" or write direct to us.

Dr. B. J. Kendall Company  
Enosburg Falls, Vt., U. S. A.



HOW TO MAKE GOOD BUTTER

The butter made on the farms of the United States may be materially improved in quality in most cases, if standard methods are employed and greater care is exercised in carrying out the necessary details, says the United States department of agriculture. The department gives the following outline of the essential steps to be taken in making good farm butter:

Produce clean milk and cream. Cool the cream immediately after it comes from the separator. Clean and sterilize all utensils.

Ripen or sour the cream at from 65 degrees to 75 degrees Fahrenheit until mildly sour. Always use a thermometer in order to know that the right temperature is reached.

Cool the cream to churning temperature or below, and hold at that temperature for at least two hours before churning.

Use a churning temperature — usually between 52 degrees and 66 degrees Fahrenheit—that will require 30 or 40 minutes to obtain butter.

Clean and scald the churn, then half fill it with cold water and revolve until churn is thoroughly cooled, after which empty the water.

Pour the cream into the churn through a strainer.

Add butter color — from 20 to 35 drops to a gallon of cream—except late in the spring and early in the summer.

Put the cover on tight; revolve the churn several times; stop with bottom up and remove stopper to permit escape of gas; repeat until no more gas forms.

Continue churning until butter granules are formed the size of grains of wheat.

Draw off the buttermilk through the hole at the bottom of the churn, using a strainer to catch particles of butter. When the buttermilk has drained out, replace the cork.

Prepare twice as much wash water as there is buttermilk, and at about the same temperature. Use the thermometer; do not guess at temperatures. Put one-half the water into the churn with the butter.

Replace the cover and revolve the churn rapidly a few times, then draw off the water. Repeat the washing with the remainder of the water.

The butter should still be in granular form when the washing is completed.

Weigh the butter.

Place the butter on the worker and add salt at the rate of three-quarters of an ounce to a pound of butter.

Work the butter until the salt is dissolved and evenly distributed. Do not overwork.

Pack in any convenient form for home use, or make into one-pound prints for market, wrapping the butter in white parchment paper and inclosing in a paraffined carton.

Clean the churn and all buttermaking utensils.

MOONEY IN HOGS

A Tulare County correspondent writes:

"Here's a hog story from Tulare County that shows there is good money in raising porkers even when pen fattened and at the present high cost of feedstuffs. Elmer Michaeli who lives in the alfalfa district west of Porterville bought a porker on which he nearly doubled his money in two months' time, and this is the story of how he did it:

"The hog weighed 102 pounds when Michaeli bought it, paying 11 cents a pound, or the sum of \$11.22. At the end of two months it had gained 128 pounds, weighing 230 pounds, which at the present price of hogs (14 cents) was worth \$32.20, making a gain of \$20.98. In the two months' time he had fed the hog 275 pounds of corn, which at three cents per pound amounted to \$8.25. Deducting the price of the corn from the value of the hog, there remains a net gain of \$12.73."

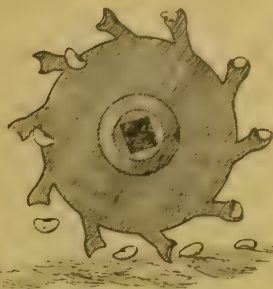
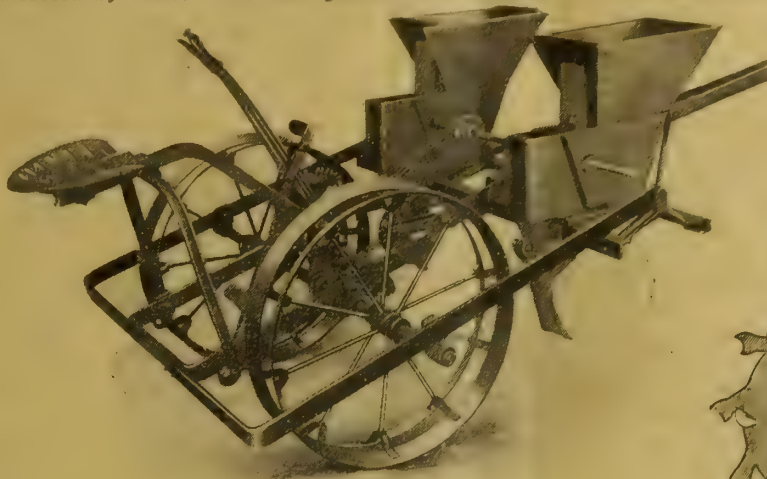
If we could all buy hogs at 11 cents and sell at present prices, or prices which have obtained for several months, and buy corn at three cents we could all get rich. Corn in Los Angeles has scarcely been below four and a half cents, and in San Francisco, in carlots, not below three and a half for many a moon. Let's grow hogs but figger right.

The "California Special" Plants Every Variety of Beans

Make sure of a good stand of beans on your valuable bean land, by using the thoroughly dependable "California Special" Bean Planter.

Each planter is equipped with a set of rotary droppers adjustable to plant any variety of beans from small white to large limas. This is the best and most dependable dropping device known for planting beans. The dropper rotates without friction through the hopper cupping the seed as delicately as though each were selected by hand. The seed passes from dropper to boot which runs at any depth set. Shoe runners will be

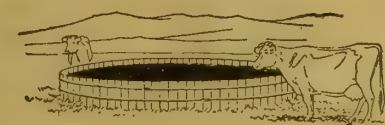
furnished where desired. Each boot is hinged with wooden peg. Open wheels run back of boot. These press inward and downward around the seed but do not pack the ground directly on top. The California Special is the last word in bean planting machinery. The frame is especially strong—is made low for orchard work if desired and is so evenly balanced and adjusted as to make it easy to handle. Made in 2, 4, 6 and 8 row sizes.



Rotary dropping device insures uniform planting. It cannot injure any of the seed.

Catalogue and circulars sent on request. We make a complete line of bean and beet tools.

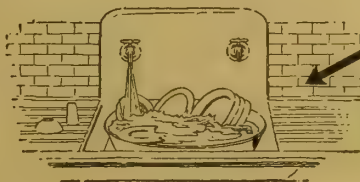
Ventura Manufacturing & Implement Co.  
Ventura, Cal.



WATER FOR STOCK



WATER FOR THE BATH



WATER FOR KITCHEN



WATER WHERE YOU NEED IT

When Pa was a boy things were different

He drove the cows to water at the creek in the "lower eighty"

On Saturday night his Ma heated teakettle and boiler full of water which had been carried from the spring

The family bathed in the wash-tub—in the kitchen

All the water used for dish washing and cooking was pumped and carried to the house

Pa's and Ma's life was mostly drudgery and carrying water helped make it so

How different is this side of the picture

We have a big redwood tank on a tower with a redwood pipe leading to the stock tank in the pasture

Another redwood pipe line leads to the house where turning a faucet is the only effort needed to produce abundant water

Our redwood tank and pipe line will last a life-time and earn more dividends on the small investment than anything we have on the farm

Pa says he wishes his Ma had had an outfit like ours

Pacific Tank and Pipe Co.  
Address nearest Office

Gentlemen:  
Please send promptly your catalogue of Water Tanks.

I need a tank to hold..... gallons.

It should be mounted on a tower.....feet high.

The water to be delivered from.....

Pipe { Length.....  
Size.....

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## Jersey Cattle Breeders of California

### Young Jersey Bull

of excellent breeding at a fair price.  
Write for particulars to

**W. G. GURNETT**  
ORLAND, CAL.

Member Orland Jersey Cattle Club.

### Jersey Bull FOR SALE

A fine straight one, bred right, priced right

**S. F. WILLIAMS**  
ORLAND, CAL.

Member Orland Jersey Cattle Club.

### ANCHORAGE FARM Jerseys

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### Fuimus Farms - Jerseys

Herd Headed by You'll  
Do Oxford's Lad  
Write Us Your Wants

**J. E. Wherrell**

1581 Sedgwick St., Riverside, Cal.

### Get One of My Jersey Bulls

to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynlyn.

Visitors Welcome Correspondence Invited

**A. A. Jenkins**  
R. R. Box 46 Tulare, Cal.

### Venadera Herd

REGISTERED JERSEYS

Young bulls from proven dams in  
Register of Merit

**GUY H. MILLER**

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ALL MY RECORDS

are made under ordinary dairy conditions. The farmers cow is

### The Jersey

YOUNG BULLS FOR SALE

**C. D. HAYWORTH**  
MODESTO, CAL.

### Young Jersey Bulls

FOR SALE

One at the head of your herd will pay  
big dividends on his cost. Write to

**W. J. HACKETT**  
MODESTO, CAL.

### A. J. C. C. Jerseys

Senior Sire: Imp. You'll Do Circus  
Junior Sire: Financial Ferns Oxford

High Producers

**Wm. Appleby & Sons**  
Mesa, Arizona

THE JERSEY

"Her product is of the very highest quality, obtained on the most economic basis, and commands the best prices in the market. The grain of her rich, golden butter is natural, and not broken down by artificial coloring matter."

## Field Notes from the Live Stock Men

Butte City Ranch reports particularly good business during the past two or three months. Berkshires have been sold to W. B. Carpenter, Red Bluff; Chas. Parker, Butte City; Ernest Eibe, Glenn; J. B. Stormer, Willows; O. L. Raper, Glenn; R. J. Bender, Glenn; W. M. Laurence, Colusa; Chas. Beretta, Willows; E. C. Gates, Butte City, and many others. Among the Shorthorn buyers are L. E. Tuttle, Willows; Chas. Beretta, Willows; Jas. Snell, Orland. Pony business has been very brisk.

Arizona University Men to become cattlemen—George W. Barnes, formerly live stock specialist of the University of Arizona, has resigned his position to engage in the cattle business in Navajo County. With him will be associated L. L. Bates, now superintendent of the dry farm experiment station of the University at Prescott. Their practical knowledge of beef cattle production in Arizona will especially fit them for their new enterprise.

Two Queens have passed. One the great pure bred Holstein, Dutchess Skylark Ormsby, but eight years old, with world record of 27,761.7 pounds milk in 365 days and 1506 pounds butter (16 per cent overrun) in 365 days; the other, a Guernsey, Clare of Poplar Grove 3rd 16343, with record of 13,170.7 pounds milk and 568.81 pounds butterfat, carrying calf 296 days.

Another high priced youngster has changed hands. The Holstein, Rag Apple Korndyke 8th, Syracuse, New York, sold for \$35,000. He is a half-brother of the \$53,000 bull, King Ormsby Jane Rag Apple, sold last June.

Prince Gelsche Walker is outdoing himself as a sire of heifers this season. Eighteen cows dropped heifer calves from him at Santa Anita Rancho, then two cows in the Morris herd dropped heifers. The twenty-first cow to calve from his service dropped a bull calf at Santa Anita Rancho.

James J. Jeffries, Burbank, is steadily shaping his farming operations toward the development of the excellent herd of registered Holsteins which he founded a couple of years ago. Additional acreage of alfalfa is being planted and provision made for other forage crops, including corn to fill the two big silos. The herd is in charge of E. J. Cameron, a capable young man well known in California livestock circles. Official testing will probably begin in the herd this fall. An outstanding feature of this herd is the exceptional quality of the calves being got by the herd sire, King Segis Pontiac Janek. Their uniformly deep bodies, straight backs and square rumps give them a rating much above the average in future promise.

Rosamaines Rancho, owned by Stalder Bros., Riverside, has a number of their best registered Holstein females approaching freshening time. The great 34 pound cow, Gerben Abbecker Maid, and the 31 pound three year old, Stanislaus Princess Cleopatra, both freshen in April, and at present are both in fit condition.

Alex Whaley, Tulare, has a very promising lot of heifers and cows to go on official test shortly. He also has coming on a very pleasing group of heifers from his former herd sire, Segis Pontiac De Kol Burke Luit, who is by Segis Pontiac De Kol Burke and out of the 32.76 pound four year old Luit Burke.

Tilly Alcartra has now probably reached her best 30 day production, and for that period has 3134.1 pounds milk and 157.30 pounds butter to her credit. She is in splendid condition and at the present time, more than 60 days after calving is milking about 100 pounds per day and averaging over 35 pounds butter per week. The state record senior three year old, Aralia De Kol Pontiac Mead, has again increased her seven day butter record to 34.44 pounds with 511.8 pounds milk, and for 30 days has 2195.4 pounds milk and 138.43 pounds butter. Hartog Creamelle De Kol, who recently completed a yearly record of 1093.03 pounds butter, has freshened again and made 566.6 pounds milk and 29.60 pounds butter in seven days. Margaret Aralia De Kol becomes the California record holder for butter in seven

en days eight months after calving, as she now has 25.86 pounds to her credit. All of these record makers are owned by A. W. Morris & Sons.

King Korndyke Pontiac 20th, the great young bull for which W. J. Higdon, Tulare, paid \$6500 in the Guaranty Sale last December, is at present in the herd of A. D. Morris & Sons Corporation, where he is being bred to a considerable number of the best cows in the herd. Quite a number of high record cows from other herds have been booked to his service, as Mr. Higdon has decided to allow owners of approved cows to avail themselves of the service of this remarkably bred young sire.

Tagus Ranch, Tulare, started off the official test season with their registered Holsteins on February 18 and have several promising candidates for good records.

McAlister & Son, Chino, have on hand a heifer herd from calves up to two year olds that measure fully up to the reputation this breeding establishment has for good heifers. The very successful methods by which the McAlisters raise and develop their heifers seems to contribute in no small way to the great records their stock has made at freshening time both in their own hands and in the hands of other breeders who have bought from them. The first calves from the herd bull "It" are just coming on in the herd at present and they are of pleasing size and vigor and well marked. The McAlisters have the honor of making the first 30 pound record on a cow purchased in the Guaranty Sale held at Sacramento in December, and they made not one but two. Miss Pontiac Nudine of Springvale, the 30 pound cow purchased from Bridgford Company, increased her record to 31 pounds butter in seven days, and Ontario Blonde Pietje, bought from Fred W. Kiesel, made 30.06 pounds butter in seven days as a junior four year old.

Santa Anita Rancho, owned by Anita Baldwin, Santa Anita, promises to be a source of official record news when the next test season opens for the registered Holsteins on the place, which will probably commence when some of the heifers begin to freshen. There is a wealth of good blood in the herd, including 18 daughters of Prince Gelsche Walker, many out of high record dams. Also a group of heifers by the senior herd sire, Mercl Lad Korndyke Burke, son of De Kol Hengerfeld Burke and Winnie Korndyke Cornucopia De Kol, 31,034.2 pounds milk and 1201.06 pounds butter in one year. The junior herd sire at Santa Anita is a son of Prince Gelsche Walker out of Alba Sadie Cornucopia Creeta, 34.14 pounds butter in seven days, 17,637.5 pounds milk and 809.46 pounds butter in 305 days, he being the highest record son of Prince Gelsche Walker yet in service.

Imp. Brittleware Mistletoe, the great senior four year old registered Guernsey heifer owned by Hollow Hill Farm, Redlands, did not stop her great production when she had completed her year's official record of 14,467.2 pounds milk and 751.38 pounds butter fat, and at the end of 15 months she had to her credit for that period 19,256.8 pounds milk and 922.96 pounds butter fat, and at that time was within 33 days of calving. She looks like a dairy worker and it is likely that she will be heard from again with a greater record.

Prince Alcartra Korndyke must be reckoned with when we consider the leading Holstein sires of California from now on, for his first daughters to complete yearly test are placing him high among the young sires of yearly record daughters. But their records are only what might be expected of the daughters of a son of Korndyke Queen De Kol's Prince and Tilly Alcartra. The J. S. Gibson Company, Williams, who own Prince Alcartra Korndyke, have a good lot of his daughters yet to freshen for the first time and he is being bred to a good lot of cows and heifers.

Clayton N. Slocum of H. P. Slocum & Sons of Willows, arrived February 28 from Nebraska, Illinois and Missouri with 30 registered Duroc-Jerseys

## MORE WORK FROM YOUR HORSES

The use of collar pads is humane. Again, your horses will do more work if properly protected by the right kind of pad. TAPATCO is the right kind.

### A NEW AND BETTER HOOK ATTACHMENT

Consisting of wire staple, reinforced with felt washer (note where arrows point). This gives the hooks a better hold and prevents pulling off. The weakest point is made strong and life of pad greatly lengthened.

Found Only on Pads Made by Us.  
Look For The Felt Washer.

SOLD BY DEALERS EVERYWHERE  
**The American Pad & Textile Company**  
GREENFIELD, OHIO  
Canadian Branch: Chatham, Ontario.



Pat. in U. S. Dec. 7, 1914.  
Pat. in Can. Apr. 6, 1915.

## DON'T MISS IT

**R. F. GUERIN'S SALE**  
80 REGISTERED HOLSTEINS  
VISALIA, CALIFORNIA  
THURSDAY, APRIL 4, 1918

Write for Catalog Now

### CALIFORNIA BREEDERS SALES AND PEDIGREE COMPANY

J. M. Henderson, Jr., Pres.

C. L. Hughes, Sales Manager

Sacramento, California

Auctioneer—Col. Ben A. Rhoades, Los Angeles.

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building  
San Francisco

CARRUTHERS FARMS  
Mayfield, Cal.



THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For — It is penetrating and healing, and for all Old Sores, Bruises, or Wounds, Felons, Bolls, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A

Perfectly Safe and

Reliable Remedy for

Sore Throat

Chest Cold

Backache

Neuralgia

Sprains

Strains

Lumbago

Sore Lungs

Rheumatism and

all Stiff Joints

REMOVES THE STIFFNESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."

OTTO A. BEYER.

Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

TAGUS

Percherons

Large stud of prize winners to choose from.

Fillies, colts, brood mares or stallions old enough for service for sale at all times.

Write for price list to,


(Horse Dept.)

Pacific States Corp.

Tulare, Cal.

H. C. MERRITT, Jr., Manager

Large Type Poland Chinas



W. H. Browning

Woodland, Yolo County, Calif.

Shorthorns

Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

Visitors welcome.—Information cheerfully given.

T. T. Miller

So. Normandie St., Los Angeles, Cal.



Pure and Cross-Bred Rambouillet Range Sheep. Also Bred Hampshires.

Mutton and Wool

J. BIDEGARAY

Fresno - - - - - California

DUROC JERSEYS

Sows, girls and a few boars of the best breeding FOR SALE

L. P. Slocum & Son

R 1 Willows, Cal.

valued at \$5000. These are for the Slocum herd and for other Glenn and Butte County breeders. They have been pronounced by competent authorities to be the best lot of Duroc-Jerseys that ever came to the coast. Included in the shipment is the famous sow, Model Lena for which he paid \$1000 at public auction. She is a wonderful sow individually and has been one of the greatest producers the breed has ever had. Every hog in the lot is a good one and they are a great addition to the live stock population of California.

MAKE PORK WITH FOOD WASTES

Even though the hog furnishes the most meat for a given amount of feed and will produce it in the quickest time, the department of agriculture points out that this meat should be produced mainly from food wastes and not from good grain that would furnish food directly to man. The great economy in pork production comes from the fact that pigs furnish a food by-product from these wastes and do not need the high-grade feeds that beef cattle must have.

Wastes on farms and in the towns make good hog feed; by-products from canneries, bakeries, fisheries, packing plants and the like can be utilized as hog feed and to better economic advantage than in any other way. Dairy wastes are particularly valuable as hog feed and promote rapid growth with a good money return for every gallon fed.

The farm orchard furnishes large quantities of wind-fallen or defective fruit, which is relished by hogs, and is beneficial if fed in small quantities frequently, and not all at one feed. Garden wastes, tops of vegetables, culls of all sorts, even weeds, are readily eaten, and such as may not be eaten will be worked over, going into the bedding and adding to the manure.

Kitchen wastes are an excellent source of food for hogs, but should be kept at a minimum, because practically all food prepared for man's use should be eaten by him.

GUERNSEYS INCREASING

The census report of Guernseys shows California's increase in this favorite breed to be very great. To be exact, the increase in Guernseys in this state from 1911 to 1917 was 310 per cent. In 1911 there were but three members of the American Guernsey Cattle Club in California. There are now 13. There were then in the state 201 registered animals; now 825. But the remarkable feature in the report is that of this comparatively small number of registered animals there are 130 animals with A. R. records completed.

The percentage of pure bred Guernseys in various sections in 1911 and 1917 may be seen from the following table:

	1911	1917
N. E. Section .....	17	15
North Atlantic Section .....	37	30
Southeast Section .....	3	2
Southwestern Section .....	1	1
Middle Section .....	40	48
Western Section .....	2	4
	100	100

NATIONAL SWINE GROWERS' ASSOCIATION

Secretary Russell of the National Swine Growers Association writes regarding this comparatively new association, organized four years ago, and the National Swine Show which it has pulled off. He refers to the campaign for greater pork production and says:

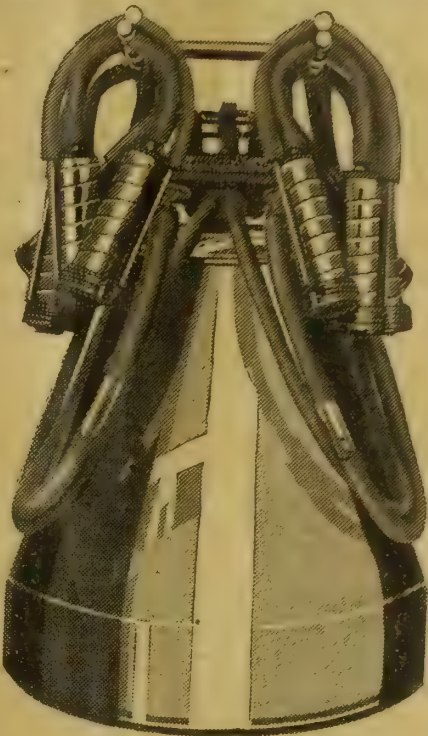
"It is the opinion of the association that there are many more ways by which the importance and value of swine growing can be brought to the American people as well as those of other countries if we but had a man acquainted with swine growing and swine men who could give his whole time to this business of the association."

Means of financing the movement and placing the permanent executive official in charge will soon be provided, and it is hoped that a contract may be made with some representative city which will afford a place of holding the next three annual shows.

Cattle fodder is being manufactured in Holland from fish meal, potato peelings, wastes from slaughter houses, etc.

PERFECTION MILKER

What Women Can Do In War Time



IN Europe the women are taking the places of men in many activities. While the war lasts many of our women folk may have to assume extra burdens. On many dairy farms today, women are milking from 15 to 30 cows with the Perfection.

The Perfection draws the milk in Nature's Way, with a gentle suction, a spiral downward squeeze followed by a period of complete release. It's gentle, uniform action is agreeable to the cow. The Perfection is simple, having no complicated parts. It's easy for a girl to handle.

Miss Rosa M. Sweatt of Dixfield, Maine, writes:

"I have used a Perfection Milking Machine on W. S. Marble's farm since last April. It works to perfection and really makes milking a pleasure and it is so much better for the cows that they plainly show they like it. It is especially good on hard milkers, or if there is any soreness on the teat or udder there is no kicking or trouble in any way.

Jay Johnson of Faribault, Minn., writes: "I have used your Perfection Milking Machine since April 1916 and milk 35 cows. I have saved one hour each milking and in the harvest time my wife did the milking, saving me an extra man. I can heartily recommend the Perfection.

I looked around and saw several others work and I feel satisfied I got the best."

Your wife or daughter may not have to help you with the milking, but if you install a Perfection Milker in your barn, either one of them could do the milking alone in an emergency. Let us send you our illustrated catalog.

Perfection Manufacturing Company

2113 E. Hennepin Ave.

Minneapolis, Minn.

Kings County Breeders' Directory

Big Type Poland Chinas

Won Grand Champion Sow at State Fair  
Won Reserve Champion Boar at State Fair  
Won Grand Champion Sow at Hanford  
Won Grand Champion Boar at Hanford

Wm. Bernstein  
HANFORD - CALIFORNIA

HOLSTEINS  
32 Females

Herd Sire Juliana De Kol King Segis  
Grand Champion Kings County Fair  
CHOICE BULLS FOR SALE  
A. B. COMFORT - Guernsey, Cal.

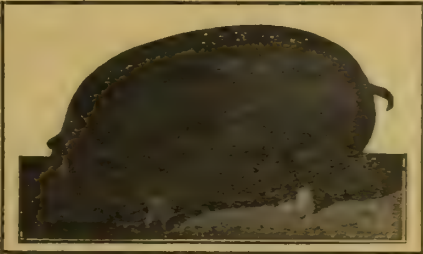
The Little Kingdom of Kings

Kings of the soil and the products thereof, till the lands of rich Kings County

Poland Chinas, Medium Type

Choice breeding stock, both sexes, from Panama-Pacific International Exposition prize winning strain. 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

M. Bassett  
Hanford, Kings County, Cal.



Hollow-Hill Farm Guernseys

Calves of service age sired by  
KING of HOLLOW-HILL 25876

are all sold. We have on hand a grandson of Imp. Galaxy's Sequel, a grandson of Langwater King of France, and a fine Glenwood yearling. All are moderately priced.

Prices, pictures and pedigrees on request.

212 R. F. D. 1 HOLLOW-HILL FARM COLTON, CAL.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.



# THERE'S WORK EVERY DAY ON ANY FARM *for the*



Threshing Beans in Wyoming



Spreading Manure in Illinois



Cultivating Corn in Iowa



Mowing in California



Loading Hay in Wisconsin



Digging Potatoes in Florida



Harvesting in Oklahoma

## MOLINE UNIVERSAL TRACTOR

*"It Solves the Farm Help Problem"*

YOU can make more money with the Moline-Universal than with any other tractor because it can be kept at work more days a year—no matter how large or small your farm or what crops you grow. The Moline-Universal is built to fit the farm and every operation on the farm. You can find work for it every day in the year.

If for no other reason than the fact that the Moline-Universal can be kept busier on any farm than any other tractor it is your "best buy."

But the greatest advantage of the Moline-Universal is that one man controls both tractor and implement in all operations. You control the entire outfit from the seat of the implement, where you must sit in order to do good work.

The wonderful versatility and one-man control of the Moline-Universal are due to its two-wheel construction. It attaches direct to the implement and forms one compact unit. All weight is placed on the two big drive wheels—all of it goes into the pull. There is no dead weight to carry around. That's why the Moline-Universal, weighing only 2850 pounds, can pull as much as tractors weighing from 1500 to 2000 pounds more; does not pack the soil; requires the least amount of fuel for operation; turns in a 16-ft. circle and backs as readily as it goes forward.

The Moline-Universal Tractor is the crowning achievement in a half century of manufacturing experience and is built by a company of unquestioned integrity and a world wide reputation as makers of quality farm implements.

Why not let the Moline-Universal help you this spring? Write for free illustrated booklet and name of your nearest Moline dealer.

Address Dept. 49

MOLINE PLOW COMPANY, MOLINE, ILL.

## "LOUDEN" BARN EQUIPMENT



The dairy rancher has long since learned that the cow is a sensitive animal and anything that adds to the comfort and the cleanliness of her surroundings invariably shows up in the profits at the end of the season.

30% to 40%

**Increase in Production**

is often the result where clean, comfortable Louden barn equipment replaces the old style uncomfortable and unsanitary kind.

**Two Valuable Books Free**

Big 112-page book of Modern Barn Plans containing scores of diagrams and illustrations—and the complete Catalog of Louden Barn Equipment.

A Postal Will Bring Them.

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SUPPLY CO.**

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## HEREFORDS

A large herd of selected stock to choose from. Everything sold is guaranteed as represented. Why send East for breeding stock when we can supply your needs. Save time and money by writing us for particulars.

**Cottrell & Packard, Tempe, Arizona**

Members Pacific Coast Hereford Breeders Association

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes—we pay registration fee. Careful attention given to mail orders.

**Whittier State School**

WHITTIER, CALIFORNIA

## BAG BALM

MADE BY THE ROW-KURE PEOPLE

### A Healthy Udder

means comfort for the cow and a generous, easy milk flow. Bag Balm, the great healing ointment, will keep the udder free from sores, chaps, cuts, bruises, cracks, bunches and inflammation. Bag Balm is especially effective at the calving period when caked bag frequently occurs. Its penetrating and softening effect is immediate. Every dairy should keep Bag Balm on hand. Sold by druggists and feed dealers, in big 50c packages. Write for free booklet, "Dairy Wrinkles." DAIRY ASSOCIATION CO., Lyndonville, Vt.

## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

### Form of Will

Further in respect to your inquiries as to form of will. One of the best and simplest wills that answers all the ordinary requirements of the average man and permits of the simplest administration of the estate at the least expense is that the form for which is hereafter given. It is entirely written, signed, and dated in the handwriting of the party making the will and needs no witnesses nor declaration of the making of the will, but may be filed among the papers of the testator. Care should be taken, however, to allow it to be known that a will has been made and the place where it has been deposited so that it may be found and produced after death.

Los Angeles, California,

March 2nd, 1918.

I, John Doe, hereby make my last will. I give all property of which I die possessed to my wife, Jane Doe. I appoint my said wife the executrix of this will to act without bonds either upon qualifying or upon sale of any of the estate. I appoint my said wife, Jane Doe, the guardian of my minor children, Peter Doe and James Doe, to act without bond. I make no bequest or devise to my said children, Peter Doe and James Doe, as I well know that their mother will well care for their interests. I give my said executrix power to sell all or any of my estate, real or personal, without prior order to court, and I revoke all wills by me heretofore made. I declare that this will is entirely written, signed, and dated in my own handwriting.

JOHN DOE.

### Oil or Minerals on Patented Land

Does the owner of a patented homestead have the same right to oil discovered on his land that he would if he had bought the land?—Subscriber, Lancaster.

He has the same right as he would have had if he had bought the land; if there is a reservation of minerals in the land it goes with the original title from the government.

### Passing Deed After Death of Grantor

Is a deed which contains a clause that it is to be recorded only upon the death of the grantor and which is, in fact, not recorded until after the death of the grantor, valid?—Subscriber, San Gabriel.

The recording of the deed does not effect the validity thereof one way or the other. If the deed was delivered during the lifetime of the grantor by the grantor to the grantee or to a third person to hold during the lifetime of the grantor and deliver to the grantee upon the death of the grantor, then it is valid. The clause contained in the deed as to its being recorded only after death would probably be of no effect whatsoever. The vital point is, was the deed so delivered that the grantor lost all control over it? If so, the deed is valid; if not, it is invalid.

### A MILCH GOAT RECORD

The university farm has among its prize-winning and record-breaking stock a milch goat which has just completed a milking test and broke the world's record.

The doe is a Toggenburg goat, and in the 365 days of the test she gave 2,957 pounds of milk. The old record was about 2,650 pounds. During her best week she gave 76 pounds.

The little animal weighs about 120 pounds, and the amount of milk given during the year is equal to over 20 times her body weight. These statistics give her the record of producing more milk in proportion to her body weight than any cow or goat on record.—W. J.

Officers of the National Livestock Association are Ike G. Pryor, San Antonio, Texas, president; T. W. Tomlinson, Denver, Colorado, secretary.

## It Is a Patriotic Duty to Prevent Loss of Cattle.



PROTECT THEM FROM BLACKLEG

by using

## Blacklegoids

Double and Single Vaccinations in pill form.

ACCURATE. EASY TO USE. EFFICIENT.

## GERM-FREE BLACKLEG VACCINE

A Blackleg Filtrate for the Prevention of Blackleg.

## Anti-Blackleg Serum

For the Preventive and Curative Treatment of Blackleg.

WRITE FOR FREE BOOKLETS ON BLACKLEG

Animal Industry Department of

**PARKE, DAVIS & CO.**

DETROIT, MICH.



Anoakia Breeding Farm

### Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

### Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

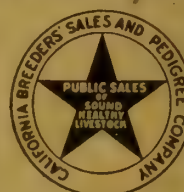
### Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita Calif.  
W. H. Taylor, Supt.



## Dependable Sales Service

We offer an unexcelled service for the conduct of dispersal and consignment sales of registered livestock. Sales conducted anywhere. Write for terms and dates.

**California Breeders' Sales and  
Pedigree Co.**

C. L. HUGHES, Sales Mgr., SACRAMENTO, CAL.  
Col. Ben A. Rhoades, Auctioneer, Los Angeles

## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

**H. L. & E. H. Murphy**  
Perkins, Cal.



## Northern California Cultural Notes

Written for California Cultivator By W. S. Guilford

### DISK THE ALFALFA THOROUGHLY

**W**E HAVE found that it pays well to disk alfalfa thoroughly in the spring. We have one field at Butte City Ranch that we went over eight times with the disk last season, and it will get as much or more now as soon as there is moisture enough. Leo. Mitchell has a field of alfalfa near Willows. The soil is a rather heavy type, and by disking, manuring and careful watering he has made phenomenal yields. He believes in disking or harrowing between cuttings in addition to the thorough winter disking.

### ABOUT PICKING BOXES AND DRYING TRAYS

We will require a large number of picking boxes and drying trays at the Monroeville orchard this season, and we have been discussing prices with various dealers for some time. A few days ago one bidder on the lot called up and said that the entire output of the mill or factory from which he received supplies was about to be sold—and that if we expected to get anything from him he would have to know very soon. When called up another dealer who had wanted to make a bid—a very good friend of ours—and he said: "I have not been able to get a price for you at all yet. I am afraid it is going to be hard for anyone to fill that order."

Told that we had one bid, he said "My advice to you is to give your order at once. I would like to get the business and I don't know what price has been made to you, but my advice is to buy them."

This incident is related for what it may be worth to any who have to buy such material this year.

### TREE SURGERY

Driving through Vaca and Santa Clara Valleys it is interesting to note that the practice of tree surgery is on the increase. In one old prune orchard a great many trees had been treated and saved for many years of usefulness.

State Forester G. M. Homans is an enthusiastic advocate of tree surgery and is doing a good work in "spreading the gospel." He is always ready to give demonstrations and explain the fine points of the operation, which is not at all complicated.

The principal thing is to remove all of the rotten and decayed wood, cutting everything back to the live cambium or growing layer of the tree. If in the removal of the decay a hole is excavated this may be filled with concrete, mixed four parts of sand to one of cement, leaving a smooth rounded surface similar to the part removed. Then the new bark will grow all over this in time if there is sufficient life and vigor in the tree. If there is sound wood beneath a little decay this can be painted to prevent further decay. The job is very much like dentistry.

### KEEP BIG NOXIOUS WEEDS DOWN

It is neither a good thing nor a patriotic thing to let big noxious weeds grow and use moisture and other plant food that should go to make better things. The best time to control these weeds is when they are just starting, and the best implement to use for cleaning is a small flock of sheep.

### LABOR ECONOMY IN THE DRY YARD

We have been visiting a number of dry yards in the Sacramento and Santa Clara Valleys recently. That there must be a big difference in the cost of handling prunes and other dried fruit is very apparent. Some plants are extremely crude and require a maximum of hand labor. Others, not only because of up-to-date equipment and labor saving devices, but because of the way the work is planned, make it possible to handle large tonnages rapidly and cheaply. C. B. Harter at Yuba City has one of the best plants we saw.

Right now is a good time to do some planning for next summer's work.

Head work now should lighten back-aches next August and September.

### UNDEVELOPED LIVESTOCK POSSIBILITIES

The possibilities for the extension of the pure bred live stock industry in this state are so great as to be almost staggering.

Take the matter of location for live stock breeding plants, for instance. Along every concrete highway—everywhere—there are dozens, hundreds, of locations that would be ideal. In fact there are not many good farms in the state but that are capable of support-

ing good registered animals profitably. Of course the time when every farm in the state will have pure bred stock will probably never come, but a good many hundred new ones should be started every year.

### SPRAYING EVERYWHERE

Spraying outfits are at work in all orchard sections. A great deal of oil emulsion has been used during the winter, and lots of lime and sulphur has been and is being applied.

A well equipped spraying outfit kept in good repair is well placed orchard insurance.

### CLOSED CARS

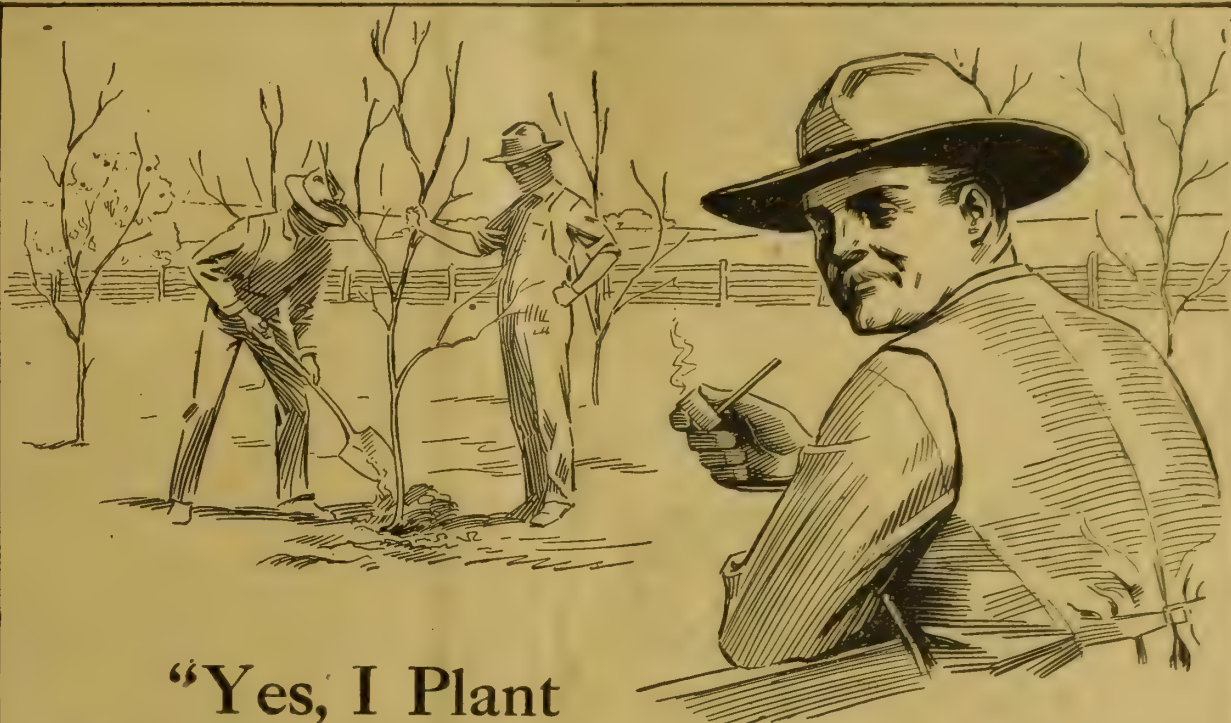
In an agency of a popular medium priced car in Willows I saw a well-to-do farmer looking at a closed car. He

was figuring on trading in his old car for a new one and had decided that for all season work the closed car would be best for his use and that of his wife.

"Why should we freeze when we come to town or go to church or to the farm center meeting?" he said.

And when you come to think of it, who has greater need for—or better deserves—a closed car than the farmer? When one such appears in a neighborhood it is sure to be soon followed by many more.

As soon as the war is over the director of the National Park Service hopes to add to the lands of the Sequoia National Park and other national parks and through a system of nationally constructed highways, make them available to all the people.



## "Yes, I Plant With Dynamite Now"

"The orchard that used to occupy this ground was planted in spade-dug holes. It never amounted to a hill of beans.

"But last winter I got hold of a book on the use of dynamite in planting. Then I asked some of the neighbors about it. I found that a lot of them, the very fellows who raise the best fruit and the most of it, use dynamite.

"Now I'm making a good beginning by planting this new orchard with

## HERCULES DYNAMITE

"I'm saving time and money on the job right now. With dynamite you get about twice as many holes in half the time you do with a spade. But the big point is this—according to what I've learned this orchard will bear a year earlier than any of my others have, the trees will live longer, they will give better fruit and more of it.

"It's reasonable that they should too. When you dynamite a hole the ground is well broken up. There are no hard

sides for the roots to fight with. They just spend their time growing and thriving—making a strong, healthy tree. And the tree enjoys life and does its best, like a boy that's well fed and well clothed.

"If you aren't using Hercules Dynamite for planting write for the book, 'Progressive Cultivation'. It will be worth a lot of money to you. At that it's sent free on request. Just use the coupon below."

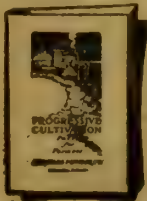


### HERCULES POWDER CO.

1013 Chronicle Building

San Francisco

California



Hercules Powder Company,  
1013 Chronicle Building, San Francisco, Cal.

Gentlemen:—Please send me a copy of "Progressive Cultivation." I am interested in dynamite for

Name \_\_\_\_\_

Address \_\_\_\_\_







Sub-soiling is a necessary present-day farming operation. Citrus growers of California and all modern farmers are not only *Plowing Deep* but they are getting under that hard crust with a sub-soiler.

Modern farm methods and up-to-date farm equipment are known to be most efficient and produce largest yields; yet these modern farm tools require POWER.

## SAMSON SIEVE-GRIP TRACTORS

Reg. & Pat. U. S. & Foreign Countries

- Supply Reliable Power for all farm work
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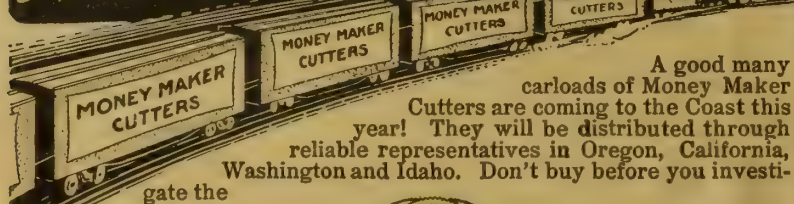
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## Treatment of Seed Potatoes

By D. C. George, Plant Pathologist, Arizona Horticultural Commission



POTATOES are subject to a number of diseases the most important of which in Arizona are rhizoctonia and scab. Of these two the former is by far the more serious. In connection with the treatment and control measures recommended the appearance of the disease upon the tubers and some other general characteristics are briefly considered.

### Rhizoctonia

This disease appears upon the tubers as small, warty, dark-brown elevations, resembling dirt particles that will not rub off. These structures are known as the sclerotia and are much more conspicuous when the tuber is wet. Frequently the disease causes a slight corrosion or roughening of the skin to which the term "russet scab" has been applied. This stage is usually associated with a deep, wide crack or split very much roughened and reveals beneath it a deep pocket or pit resembling the work of some insect. The object of seed treatment is to kill all the sclerotia or any other part of the fungus that might be present upon the seed tubers.

### Scab

Potato scab appears upon the tubers in crust spots, deeply cracked and furrowed. In serious cases these spots may join together, causing a general roughened appearance over the surface of the tuber. Scab develops no sclerotia or other structure upon the surface of the tuber and causes no pits or pockets as in the case of the rhizoctonia.

### Similarities and Differences

The rhizoctonia disease is caused by a soil fungus common in many soils and supposed to be a native in some. Scab is caused by a soil bacterium common in nearly all soils and especially prevalent in soils with a high humus content. Rhizoctonia is espe-

cially favored by an acid soil and scab by an alkaline soil. Rhizoctonia is lessened by the use of barnyard manure while scab is increased by its use, especially if the manure is fresh. It has recently been determined that the organism causing scab is very prevalent in humus material in the process of decomposition. Both diseases develop best under high moisture conditions and when once established in the soil will remain there for indefinite periods. Both attack such crops as beets, turnips, mangels, rutabagas, etc. but have never been found causing injury to such crops as wheat, oats, or barley. Rhizoctonia and scab are both subject to the same seed treatment. Formaldehyde is effective against scab but is very unsatisfactory against rhizoctonia, while the corrosive sublimate solution is effective against both diseases.

### Control

In the control of these diseases the following system should be followed:

Use clean seed. Rotate crops. Select soil known to be uninfected. Treat the seed.

The treatment recommended for both the rhizoctonia disease and scab is as follows:

Corrosive sublimate, four ounces; water, 30 gallons. This strength makes a one to 1000 solution. The seed potatoes should be covered by the solution from 1½ to two hours.

The following should be strictly observed:

Treat all seed in wooden vessels such as candy pails or barrels, as the solution will corrode metal.

Corrosive sublimate is a deadly internal poison but is non-injurious to the skin and may be handled without danger.

Use a new solution to every five bushels of seed.

Never feed treated potatoes to livestock.

Treat all tubers before cutting.

## Insects in Stored Grains

Written for California Cultivator By E. R. de Ong



STORED grain is commonly infested by three different beetles: (1) The grain weevil, a dark mahogany colored weevil about one-eighth of an inch long, easily distinguished from the other two beetles by a long snout or proboscis. (2) The confused flour beetle, similar in size to the weevil, but more of a reddish brown, flat, elliptical, and without a long snout on the head. (3) The saw-toothed grain beetle, slightly smaller than the above, dull brown colored body, somewhat elongated and narrow; under a hand lens the edge of the thorax is seen to be notched like saw teeth.

The first two insects are very common on wheat and barley in granaries and storehouses, the infestation almost always occurring after the grain has been stored, particularly attacks by the grain weevil proper, since they do not fly. (The rice weevil sometimes found in grain is a winged insect and spreads more rapidly than the grain weevil). The adults and larvae of both insects feed on the whole grain and to a less extent on the by-products. The eggs are deposited on the grain. These hatch into small grubs or larvae which burrow into the solid grain, hollowing it out to a mere shell. When mature the larvae pupate inside the grain and emerge as full grown beetles, there being a possibility of several broods a year in California. The adults are found in the granary throughout the winter, but usually do not cause severe injury at this time. With the higher spring temperature and the moisture absorbed during the winter rain favorable conditions for breeding are, however, reached, and the damage increases very rapidly and continues as long as the moisture and temperature conditions are favorable. Grain well dried in the field usually contains from eight to ten per cent of moisture, which is hardly enough for the development of the young larvae or grubs. Hence, well cured new grain is practically free from attack except by the adult in-

sects found in the granary. Serious weevil injury seldom occurs until after the moisture content is raised to 12 or 13 per cent, which happens during the late fall and winter months.

The saw-toothed grain beetle also attacks whole grain but will eat almost any food substance, including sugar, bacon, and preserved fruits; their life and development is similar to that of the first two insects described. A few moths and other beetles occasionally attack grain and meal but the same treatment recommended for the above insects will usually suffice for the occasional visitant.

### Control

Infested granaries should be cleaned thoroughly after the removal of the grain, taking out all trash in which the insects might be breeding or harboring and allowing the floor to dry thoroughly. The floors and walls should be sprayed with gasoline, or engine distillate, providing there is no danger of fire. Preventive measures taken while the granary is being built will do much towards reducing the number of hiding places for grain insects and making the building easier to clean. If a wooden floor is used it should be built of matched lumber, avoiding all the cracks possible, and be raised from the ground 15 to 20 inches. The space between the floor and ground should always be kept free from chaff and waste grain. If the floor is laid close to the ground there is usually an accumulation of trash in this space which offers a good hiding place for grain insects as well as rats and mice. Concrete for the floor and two feet of the side walls is superior to wooden construction as it offers fewer hiding places and is a great advantage if it ever becomes necessary to fumigate, besides makes the granary almost rat proof.

The grain should not be stored until well cured, and if held over for one year the building should be opened and allowed to dry out or, if possible, shift the grain early in the spring so



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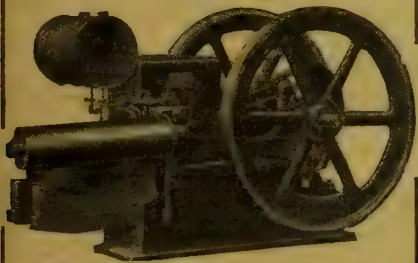
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## POTATO PLANTERS



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**California Implement Co.**

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that the sun and wind have access to it for two or three days. It is only when grain is almost damp enough to mold that weevils can breed in it freely, and this point is seldom reached unless the crop is carried over one year or more, or the roof or walls leak.

### Fumigation

When the grain becomes thoroughly infested with any of these beetles or moths, it should be fumigated, if possible, either with carbon disulphide or hydrocyanic acid gas. The exact amount of chemicals for fumigating work cannot be given as it varies with the tightness of the room. Carbon disulphide should be used at the rate of one to 20 or 30 pounds per 1000 cubic feet, and unless a room is very tight the larger amounts should be used. The gas from this chemical is as explosive as gasoline and should never be used around fires or where there is danger from sparks.

Cyanide is commonly used at the rate of one ounce per 100 cubic feet, doubling the amount if necessary when the room is of a loose construction. The gas from cyanide is so poisonous that if possible only experienced operators should use it.

All fumigation work should be done at a temperature of 70 degrees Fahrenheit or above on account of the increased efficiency at high temperatures. Keep the fumigated room closed for 12 to 24 hours, allowing no one to enter until it has been well ventilated.

\* \* \*

We may add that in addition to the fumigants recommended by Mr. de Ong many prefer Kilmol, which is a private trade marked fumigant, which has been used extensively. Some also use low grade distillate which perhaps is hardly as effective as the others mentioned. Still others run the the auto into the field where the squirrel colony is and direct the exhaust from the running engine into the holes. The economy of this last, however, is questioned by many.—Edit.

### Book Review

#### PRINCIPLES AND PRACTICE OF PRUNING

"Principles and Practice of Pruning," by M. G. Kains, lecturer on horticulture, Columbia University, published by Orange Judd Co., New York at \$2.00 net. The title page has a sentiment; "The less a tree is cut, the sounder it will be and the better its fruit," which, standing by itself and taken literally, we do not believe. Further, we do not believe the author of the book construes it literally.

The author says in his preface: "Few practices in the handling of plants, especially of fruit trees and bushes, attract so much interest as those of pruning. The methods are so varied, the results so diverse, and the apparently contradictory opinions of growers so tenaciously held, that this subject is always one of the surest to arouse discussion whenever demonstrations are given by agricultural schools and farm bureaus."

"I have had too long experience in editing books and articles to suppose that this volume is physically perfect. I therefore request that readers kindly note any least error and notify either the publisher or me, so that correction may be made in future editions. In the hope, however, that these errors will be few and that the book will meet the need of those for whom it has been written, I commend it to all who may have occasion to use pruning tools."

There are 420 pages on nearly all of which are illustrations. There are 19 chapters, touching upon Plant Physiology as Related to Pruning; The Philosophy of Pruning; Buds; Pruning Principles; How Wounds Heal; Prevention and Repair of Mechanical Injuries; Dressings for Wounds; Pruning Nursery Stock; Pruning Young Trees; Pruning Mature Trees; Care of Top-Worked Trees; Brush Fruit Pruning; Grape Pruning and Training; Pruning Ornamental Trees and Shrubs; Dwarf Tree Pruning and Training; Old Methods of Pruning and Training; Practical Tree Surgery.

The book has nothing to do with California conditions, but it has such a fund of general information touching upon principles of pruning and care of trees that its service in California will be great.

## Get the Big Price for Your Hay



**D**ON'T be satisfied with the low or in-between price for your hay. Get the big price. The quality of your hay determines the price. There is often a difference of from \$6.00 to \$10.00 per ton between choice hay and hay that grades No. 3. Make better hay—increase your hay land profits by adopting the

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Hay made by the Dain system cures better and holds its color. The leaves do not become brittle. There is little loss in handling. Hay made the Dain way keeps better in the mow, stack or bale, and is more palatable, more digestible and has greater feeding value. Whether you sell your hay or feed it, your profits are increased when you adopt the Dain system of making hay.

## Rake Your Hay With a Dain System Rake

By following the mower closely with the Dain System Rake you turn the hay while the leaves are still active, delivering it in medium size windrows on clean, dried-out stubble. Raking against the heads places the bulk of the leaves on the inside (where they cannot sun-scorch) and the stems on

the outside, insuring thorough evaporation of moisture. By adjusting the angle of the teeth, the density of the windrow is controlled, allowing for free circulation of air. Hay cured by the Dain system is air-cured, not sun-cured. The highest quality of hay is made in this manner.

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You put the machine in and out of gear, change the angle of the teeth, raise and lower the raking head with levers that are accessible from the seat of the machine. The Dain System Rake has unusual capacity. This is made possible by the high steel arch, to-

gether with the inclined frame, which grows in height as the windrow grows (an exclusive feature).

The Dain System Rake is making bigger hay profits for thousands of hay growers. It will do the same for you. Learn more about this valuable tool.

## Write for Free Package DS-24.

and you will get "Better Hay—How to Make and Market It," which tells all about the varieties of hay, their value, how to grow them. Tells how to cure hay, also illustrates and describes a full line of labor-saving, money-making haying tools. Beautifully illustrated.

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**For Sale**—D. W. C. Strain, Single Comb White Minorcas, large, pure white, perfect type, bred to lay. Choice birds, also eggs for hatching. D. W. Clark, Star Route, Box 41, El Centro, Cal.

**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks** with the Stevenson Hatchery, Watsonville, Cal.

**Am Booking Orders for chicks from Barred Rocks, R. I. Red and White Leghorn stock** for spring delivery. Send for circular. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain), Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Baby Chicks (White Leghorns)** shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

**Baby Chicks from Forney's famous heavy laying strain of Single Comb White Leghorns.** \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**"Eastman's Bred-to-Lay" Hoganized, Trapnested Barred Plymouth Rocks, April chicks, eggs.** Fairmead Poultry Farm, Fairmead, Cal.

**White Wyandotte eggs** for hatching from fine breeding pens. Can't be excelled for winter layers. J. W. Nicholson, Wasco.

**Famous Ferris White Leghorns**—Standard of quality. Guaranteed eggs and chicks at let-live prices. Hanscom, Escondido, Cal.

**Baby Chicks**—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Royner, Lathrop.

### POULTRY

**White Leghorn. Baby Chicks**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. \$11.00 per 100. Lyon Hatchery, Gardena.

**Your Opportunity**—Half price eggs sale. Big profit now raising our 200-290 egg Leghorns, Wyandottes, Anconas, Red Rocks, Minorcas, Orpingtons, Brannas, ducks, geese, turkeys. Thousands chicks, eggs weekly, reasonable. Laying pullets hens. Males half price. Many repeat orders. Hundreds customers making money. One cleared \$617 on 110 hens last year. James Beeson, Pasadena, Cal.

**Baby Chicks & Eggs For Hatching**—from pure bred McFarland strain White Leghorns, carefully culled and Hoganized for heavy egg production, shipped on approval, \$10.00 per 100, special price in lots of 500 or more. Sonoma Valley Hatchery & Poultry Yards, R. 2, Box 48, Sonoma, Cal. Write for booklet.

**Baby Chicks and Eggs**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Model Poultry Farm, White Leghorn Specialists**, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Baby Chicks**—All good strong youngsters. Hatches every week. White, Brown and Buff Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Spring Chicks**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

**White Leghorns—White Rocks**—Highest class of thoroughbred stock. Chicks, Leghorns, \$15.00 per 100. Rocks \$20.00 per 100. Eggs \$2.50 per 15, \$10.00 per 100. Eggs from special pens of high class exhibition type \$5.00 per 15. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

**Baby Chicks**—Leading varieties. We guarantee safe arrival and full count; strong vigorous chicks from the finest flocks of free range stock in this country. 1918 price list and instructions on care of baby chicks, if you mention this paper. Lasher's Hatchery, Petaluma, Cal.

**For Sale**—Baby chicks from fine thoroughbred heavy laying stock. White Leghorns, 100, \$12.50. Rocks and Reds 100, \$15.00. Hatching eggs 15, \$1.25, 100, \$6.00. McConnells Black Minorcas eggs, 15, \$1.50, 30, \$2.50. Bronze Turkey eggs, 12, \$4.00. W. H. Rails, Orange, Cal.

**Baby Chicks** from my vigorous heavy-laying strain of First Prize winning Anconas, \$18 per 100, \$80 per 500. Hatching eggs \$1.50 a setting, \$7.00 per 100. Kaj Paulsen, Route F, Fresno, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

**Hatching Eggs**—S. C. White Leghorns. Bred-to-lay hoganized birds from Pine Tree Strain. Fertility guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns, "Quack-less" White Muscovy dux, White Embden goslings, stock eggs and babies.** Stamp for prices. White Star Hatchery, Kerman, Cal.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**For Sale**—Rhode Island Red baby chicks from our carefully selected matings, \$14 per hundred. Williams Poultry Place, 236 No. Gage, Los Angeles.

**White Leghorn chicks and eggs**, best strains, low prices, large plant. Free catalogue and price list. Newton Poultry Farm, Los Gatos, Cal.

**Hatching Eggs** from high class S. C. Anconas, \$1.50 per 15; \$7.00 per 100. Eggs from specially selected pens, \$2.00 per 15. H. A. Loud, Winters.

**White Leghorn Baby Chicks**—Strong and healthy for particular people, from Hoganized heavy laying mature fowls. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

**Baby Chicks**—C. A. Gray Hatchery, Le-moore, Cal. S. C. Brown Leghorns \$12.50 per 100, S. C. Rhode Islands \$15.00 per 100, one-fifth down with order.

**Buff Orpingtons, Buff Ducks, Bourbon Red Turkeys.** Hatching eggs; baby stock; mating list. The Ferris Ranch, S. Reservoir, Pomona, Cal.

**Trapnested White Leghorns**—Official 200 egg records, also eggs from above \$2 per 15, \$8 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

**Pit Games, Reds, Blues, Grays—Cocks, stags, hens, eggs.** R. H. Crane, Route 3, Santa Rosa.

**Buff Leghorn Eggs** \$1.50 per 15; \$9 per 100. Mrs. H. W. McClure, Glendale, Ariz.



## HOGS

**The Billiken Brand of Chester Whites**—There is right now a big shortage of swine in California. The output of 1918 will show even a greater shortage unless the farmers of this state get busy and raise more hogs. Good breeding stock is scarce and hard to get. THE BILLIKEN BRAND represents the best obtainable; they are of that mellow type that mature early and are such satisfactory easy feeders. Get started with this strain and help out the Food Administration and your own pocket as well. Write me your wants—do it today. I can still furnish first class animals at reasonable prices. C. B. Cunningham, Mills, Cal.

**Grave Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more boars left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 27th, and a few bred gilts. Our herd won the Premier Breeders' Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massive Orange. Watch for the sensational offering of sows bred to this great trio which sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal. W. Bernsteins, Proprietor.

**Hogs—Duroc-Jersey—Bargains**—Two year old, registered boar, \$35.00. One year old, subject to register, \$30.00. Send for pedigree. We shipped pigs recently from San Diego County to Yolo County. THE SAN DIEGO LAND CORPORATION, 401 Southern Title Building, San Diego, California.

**Improved Jerusalem Artichokes** produce twenty tons to the acre. The great hog feed for the winter months—the hog does the harvesting—18 pounds for \$1.50 postpaid to and including third zone, 98 pounds for \$5.00 f. o. b. Niles, 1000 pounds and over at 4 cents per pound. California Nursery Co., Niles, Cal.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington, Sta., Riverside, Cal.

**Duroc-Jerseys**—Sold out of bred gilts. Two service boars. One of them an outstanding individual for sale. Also Fall Pigs, both sexes. Twenty-three ribbons on 11 entries, including 6 championships, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen sows and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 732 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Copro (Made from coconuts)**—Best hog-feed. Your dealer, or Lee Chamberlain & Co., Los Angeles, Cal.

**Duroc-Jerseys**—15, 8 females, 6 barrows, 1 boar. Registered, life immunized from cholera. 3 months old. Price \$20 each for the bunch. Garden City Sanitarium, San Jose, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Callstoga, Cal.

**Recorded Poland-China** boar, 18 months old, sired by Superba. Bargain at \$50.00. Immuned, and tried breeder. C. R. Hanna, Riverside.

**PLW Durocs**—Golden Models and Great Wonders are the most consistent winners at every show. Peters, Lamson & Walker, Devore, San Bernardino County, Cal.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Cal.

**Durocs—P. & L's Defender** by Defender heads herd. Joseph Prendergast, Route 2 Box 87A, San Bernardino, Cal.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

## RABBITS

**Go into Business For Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, Cal.

## LUMBER

**Lumber—Sash—Doors—Plumbing**—Supplies—Building materials of all kinds. New and second hand. A. R. W. shingles 55 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

## DOGS

**For Sale**—Alredale pups, both sexes, registered stock, none better. Two months old. Protection from coyotes and wild cats. John Bidwell, San Marcos, Cal.

## SEEDS AND PLANTS

**Alfalfa Seed**—Others come and go. We have been in the alfalfa seed business, growing and selling, for forty years. We handle vast quantities of it. We make it a specialty. Our customers dot the entire globe, practically. If you want reliable stock, seed that can be depended upon, either alfalfa or other seeds, write or wire us for quotations, samples and advice. V. A. Peterson Alfalfa Seed Co., Arbuckle, Cal.

## SEED POTATOES

**Fancy stock Early Rose, American Wonder, Oregon and California Burbank, and British Queen Seed**, Specially grown. Prices are right. Send for quotations. Wm. A. Curtis Co., 400 Front St., San Francisco.

**Plant Alfalfa Now** and get full benefit of spring rains. Hay prices promise to be high and early plantings should pay, better this year than ever before. There are many kinds of alfalfa, one is best suited to your conditions. Write us of your soil and water supply and let us send you samples of seed we consider best suited to your needs. Desk B, Bomberger Seed Co., Modesto, Cal.

**HEADQUARTERS for ALFALFA and SUDAN Grass Seed**. Our Field Seeds are cleaned to the highest standard of purity. When buying from us you are not paying for chaff or weed seed. Write for prices and samples.

**VALLEY SEED COMPANY**, 502-504 J St., Sacramento, Cal.

**Seed Oats**—Pure strain White spring oats, heavy, one the largest yielders in the West, as high as 115 bushels to acre being produced, thoroughly tested. Plant good seed, order now, good seed is scarce, prices right. Carlton Nursery Co., Carlton, Ore.

**Alfalfa Seed**—Common variety. Hairy and Smooth Peruvian. Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

**Plant a Few Acres of Dwarf Milo Maize** for seed. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sweet Potato Plants**—New varieties sweet potato plants: Nancy Hall, Porto Rico, Early Triumph, \$7.50 per 1000, \$1.00 per 100. April and May delivery. J. Branswell, Lindsay, Cal.

**Rhubarb Plants**—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00, Wagner's Giant Crimson Winter \$3.00, 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Dwarf Milo and Feteria Seed**. Selected under direction of Riverside County farm adviser, from heavy yielding strains. L. S. Cushman, San Jacinto, Cal.

**For Sale**—1700 bushels pure, well matured Sudan grass seed. Peruvian alfalfa and cane seed. Address Box 501, Fowler, Cal.

**Seed Potatoes**—Very fine. Selected from patch yielding 200 sacks per acre. 3 cents per pound. H. D. Carden, Victorville, Cal.

**Mitchells Everbearing strawberry** our specialty. \$1.00 per 100 plants, \$5.00 per 1000 plants. Frimma Vista Gardens, Arlington.

**Strawberry Plants**—Everbearing northern grown, strongly rooted. Price list free. F. I. Moffett, Ellensburg, Wash.

**R\*O\*S\*E\*S** 50 cents per dozen. Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

**New Hybrid Alfalfa**—Great underground stooler, growing thicker (not thinner) with age. J. L. Lawson, San Jose.

## MACHINERY

**FOR SALE—WHY BUY NEW?**

**SAVE YOU HALF. MATERIAL GUARANTEED.** Ranch tools, plows, cultivators, drills, harrows, 50 windmills, 150 redwood, iron tanks; pumps, sundries. Office DEMMITT CO., 120 N. Main, upstairs. Yards 816 Yale, Los Angeles.

**For Sale**—One 18 h. p. "Olds" distillate engine, mounted on wagon. One 50 h. p. "Olds" distillate engine; one 20 h. p. "Muncie" oil engine; one water well drilling rig; one spraying outfit, one wooden wagon running gear. The above used machinery may be priced at our shop. Will be sold at a very low figure. Dunn Manufacturing Co., Oxnard, Cal.

**For Sale**—Samson Sieve-Grip Tractor, Model 25, block motor. Bosch magnet. New John Deere light tractor, 4-10 disc plow. Ranch, Louise avenue, near Atlanta. F. H. Bush, Ripon. Phone Manteca 144.

**How's This?**—10,000 gal. corrugated galvanized tank, \$195; 8000 gal., \$135; 900 gal. steel riveted 3-16 wagon tank, \$80, with wagon, \$95. DEMMITT CO., office 120 N. Main, upstairs. Yards 816 YALE, Los Angeles.

**REMANUFACTURED PIPE** All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

**WEISSBAUM PIPE WORKS**, 169 Eleventh St., San Francisco.

**Six Used Grain and Beet Drills**—Ready to ship; 10 ft. Hoosier, \$95; beet drills, \$45 up. Plows, harrows, DEMMITT CO., 120 N. Main, upstairs, yards 816 YALE, Los Angeles.

**Gasoline Engines**—the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale**—Holt caterpillar tractor, John Deere disc plow and harrow. W. O. Tingle, 456 North Lake Ave., Col. 6177, Pasadena.

## CATTLE

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., Cal.

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs** and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit. Tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

**Veramont Stock Farm**—Pure Bred Herefords. Only 2 pure bred and 2 grade bulls left. One 11 month Hampshire ram. Prices right. H. M. Barngrover, San Jose.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, Cal.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires (registered)**—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMillan, Phoenix, Ariz.

**Young Holstein Bulls**, bred right, grown right, priced right. Creamcup Herd. M. Holdridge, Modesto, Cal.

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. T. E. Greenough, Merced.

**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys**—1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

## FARM LANDS FOR SALE

**Buy Land Where They Raise the Prize Crops**, in Snohomish County. 40 acre farms, \$25 per acre. Ten yearly payments, 6 per cent interest. Visit our offices and see the great exhibit of PRIZE WINNING Vegetables, Fruits, Grains, Alfalfa and other Grasses raised on adjoining farms. They prove our claims that this is the best land in Western Washington. Paved roads. Four passenger trams a day. Graded School, Cannery, Creamery Cheese Factory. Plenty of work for the laboring man in the mills and camps, where 75 settlers are all boosters. DON'T LOSE A DAY in asking for our illustrated literature.

**BROWNELL LAND CO.**, 904 Third Ave., Seattle, Washington.

**NO PAYMENT FOR TWO YEARS** RICH, LEVEL, TEHAMA SILT LOAM, IRRIGATED LAND AT \$150 PER ACRE, INCLUDING WATER RIGHT. NO BETTER ALFALFA, FRUIT OR NUT LAND, ONLY 3 MILES FROM RED BLUFF, CITY OF 5500 PEOPLE, ON STATE HIGHWAY. NO PAYMENT FOR TWO YEARS, 3 YEARS TO PAY. WRITE FOR BOOKLET AND SOIL MAP.

**F. D. BURR CO.**, 219 MONTGOMERY, SAN FRANCISCO.

**For Sale or Trade 240 A.**—Relinquishment, situated 20 miles east of Barstow on Main line Santa Fe, on Ocean to Ocean Highway, adjoining townsite, 80 A. cleared, 40 A. plowed. Vicinity of flowing wells. Will sacrifice for \$10 per acre. Good reason for selling. Wm. Stokes, Hemet.

**For Sale**—160 acre improved ranch, 11 miles from Long Beach, 1 mile from Westminster. Good alfalfa, beet and bean land. Plenty water and good buildings, \$225 per acre. Possession next September. W. F. Marks, 226 S. Main St., Los Angeles.

**Coachella Valley**—40 acres, 4 apricots, 6 dates, 6 grapes, 11 onions, 55 inches water, motor 15 cents hour, house, stock, implements, alfalfa. Net income \$3500. Price \$17,500. Ten Thousand Cash, balance time. C. W. King, Indio, Cal.

**Information Free** about state and government land bargains especially stockraising, homesteads. Joseph Clark, Sacramento.

**For Sale**—10 acres, 3 1/2 acres grapes, fig border. House, barn, pumping plant. \$1000 cash, \$2000 mortgage. Edith Hyatt, Clovis, Cal.

## AGRICULTURAL IMPLEMENTS

**The U. S. Cream Separator** like John Brown's soul, goes marching on. If you want to know about the new United States or need repairs for old one, write H. E. Walker, Sales Mgr., Box 364, Portland, Ore.

**IMPLEMENTS AND RANCH SUPPLIES**. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC.

**The Yellow Front**. Established 1892 112-118 S. Los Angeles St., Los Angeles.

**For Sale**—Bean Sprayer with four hoses, complete. Almost new. Reasonable. Address C. P. Stone, 1393 W. 8th street, Riverside, Cal.

## GEESE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. FEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alpaugh, Cal.

## AUTOMOBILE ACCESSORIES

**Titian Batteries** for Service. Get our prices before buying or having an old battery repaired. Call or write. Olive Street Electrical Co., 910 South Olive St., Los Angeles, Cal.

## TURKEYS

**Mammoth Bronze Eggs** our specialty. "Gold Nugget" and other strains of Mammoth type, also Collie Pups. John G. Mee, St. Helena, Cal.

**Mammoth Bronze turkey leaders** of Imperial Valley town, 8 months weight 26 to 30 lbs., price \$15.00 to \$25.00 each. E. V. Blaschko, Shiloh, Cal.

**Eggs—Bourbon Red and White Holland turkeys**. Toulouse geese, Guinea, Buff Orpington chickens. E. A. McKinley, R. D., Ukiah, Cal.

**Giant Bronze Turkey Eggs** from America's leading strains. M. M. Reiman, Planada, Cal.

**For sale**—Turkey Eggs, Mammoth Bronze Pedigree stock. Robinson, San Dimas. Phone Covina 902.

## LIVE STOCK

**Registered Shires**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

## AUTOMOBILE TRAILERS

**All Sizes**. See our stock. Immediate deliveries. Lowest prices. Arnott & Company, Inc., 112-118 So. Los Angeles St., Los Angeles.

## GOATS

**Toggenburg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, Cal.

## The Papec Pneumatic

## Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.

For particulars write

## Santa Fe Lumber Co.

16 California St. San Francisco

## Soil, Water and Fertilizer Analyses

## Mark Walker, B. S.

211 W. First St. Los Angeles, Cal.

## MONTHLY WEATHER AND CROP REPORT

United States Department of Agriculture, Weather Bureau, San Francisco, California, March 4, 1918.

February rainfall in California was decidedly above normal, except in the extreme north and extreme south portion of the state and in the Owens Valley, where it was slightly less than usual. The rains during the last half of the month were very beneficial and although the amount was large, they fell gently and consequently soaked well into the soil without causing any washouts or damaging floods. Those sections of California needing rain the most received the greatest amounts. Slightly over 50 per cent of the seasonal rainfall has so far occurred, and not only is the ground water at a lower level than last year, but there is a shortage of well packed snow in the mountains upon which the late supply of water for irrigation and power purposes is obtained, therefore it will be necessary to conserve the supply on hand by every means possible. Temperature during the month were nearly normal. There were frequent frosts, but none was severe enough to cause serious damage.

Farmers are now exceedingly busy in plowing and seeding their land. Most of the wheat, barley and oats have been planted, but a few are still seeding grain, which if it does not mature will be cut for feed for stock. The early sown wheat, barley and oats are coming up and stooling nicely. Corn planting has begun in the southern counties. No rice has yet been planted. Potato planting and gardening have become general, and the planting of sugar beets has begun in a few places. A large acreage is being prepared in the San Joaquin Valley for Egyptian long staple cotton, a new crop which promises to be of commercial importance in that locality. In the Imperial Valley much land is also being prepared for cotton, but none has yet been planted.

Alfalfa is now growing rapidly and can be used for feed for stock if necessary. Pastures and ranges are improving and new grass in the hitherto dry sections is getting high enough to furnish some feed to the starving cattle. In the northern counties pastures were never better and stock is in fine condition. The weather during the month was favorable for lambing and no losses of consequence have occurred in the sheep folds.

Almonds are in full bloom and apricots are beginning to blossom. The buds are swelling rapidly on fruit trees and the orchardists are busy cultivating orchards and vineyards and spraying fruit trees. Lemons and oranges in the south are maturing nicely and they were also benefited by the recent rains.—E. A. Beals, District Forecaster.

## HEREFORD SALE

The biggest event in Hereford cattle history in California will be the public sale at the University Farm at Davis. About 75 head of the best Hereford cattle in the West will be offered for sale, and there will be more females than bulls.

The lead taken by big cattle firms in bringing out registered bulls in carload lots to be turned out with the range cows, has made it certain that the business of raising pure bred cattle will continue to be profitable.

## FLUID GRAFTING WAX

Paul Kruger, Watsonville, is placing on the market a most handy preparation which might well be in the hands of every orchardist. It is a fluid grafting wax of value in grafting, tree wounds, etc.



# Straight Answers to Timely Questions

## What is Pratt's Poultry Regulator?

A positive tonic and conditioner for poultry of all kinds and ages. A health-builder and health-preserver. Not a food.

## What does it contain?

Roots, herbs, spices, mineral substances, etc. Each ingredient performs a certain duty. The combination spells "health insurance."

## What does it do?

Pratt's Poultry Regulator makes and keeps poultry healthy, vigorous and productive. It sharpens the appetite, improves digestion and circulation, hastens growth and increases egg-production. It saves feed by preventing waste due to poor digestion. It prevents disease by keeping the birds in condition to resist the common ailments.

## Has it been fully tested?

Yes! In general use for nearly fifty years. The original poultry conditioner. Imitated, but unequalled.

## Does it give general satisfaction?

Positively! Satisfaction guaranteed or money refunded. Test it at our risk. Increased egg-production will prove that "Pratt's makes hens lay."

## How is it best used?

Daily, in small quantities. For adults, a tablespoonful daily for 10 birds. Younger stock in proportion. Mix with dry or moist mash.

## What does it cost?

Nothing, because it pays big profits. One cent a month per hen is the investment required.

## Where can I get it?

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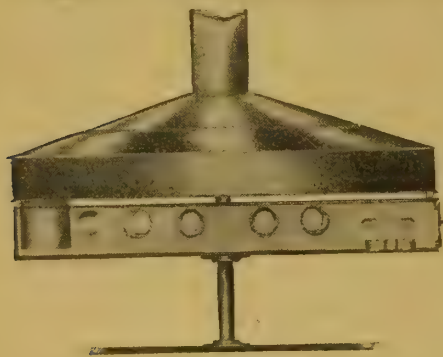
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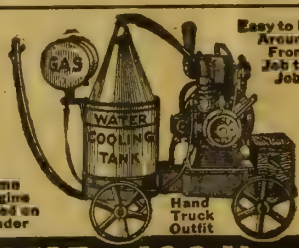
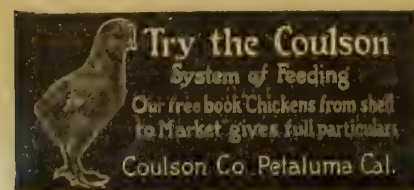
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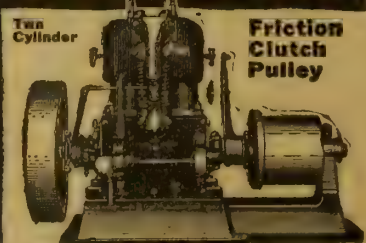
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## "The Early Bird-----"

Written for California Cultivator By Jean A. Koethan



IT IS almost too late to say, "Hatch early," for the early chick is already out of the shell, or at least ready to pip it. Incubators have been running for two months, and the brooder houses on all the commercial poultry plants are full. Only the backlotter and the farmer are waiting for broody hens or better weather, and it is not too late to remind them of the old proverb and its modern application. If we want fall eggs and plenty of them; if we want fryers that will pay for their feeding; if we want to get our chicks up and out of the way before the heat and drouth of summer wither the volunteer green growth that is such a potent factor in chick life; if we want vigorous chicks that will grow "for all that's in them," we must be up and doing and get those chicks out of the shell before the first of April. Never mind if the hens don't go broody. There are other ways of hatching. Never mind if the breeding stock doesn't lay as many eggs or as fertile as you think they should. There are other breeders beside your own. Never mind if you cannot decide, like a friend who called up yesterday, whether you want White Leghorns or Barred Rocks or Black Minorcas, hatch something or buy something ready hatched. If you cannot decide what breed you prefer, toss up a penny, and let that decide. Only get some kind of chicks started in your back yard, and do it quick.

We have been told a good many times that pullets of the Mediterranean breeds need not be hatched before April. This is partly true and partly error. White Leghorns hatched in April ought to lay in October. Probably most of them will, but there are some that will want a little more time for maturing, and others that will not be quite up to their best production by October. Some pullets loiter a little the first month of laying, and most lay a smaller egg at the start than they do after a couple of months. If seven months instead of six are allowed them for coming to full maturity a more reliable egg output is assured. As for pullets of the heavy breeds, seven months must be allowed all of them, and eight months is better. Some will lay at six months. My experience is that Orpingtons may usually be counted on to lay at from six to seven months, but they are an exception to the general run of heavy hens. Something depends on care and feeding, something on strain, but it is a good plan to give the American breeds and Orpingtons eight months in which to attain complete laying maturity, and the Asiatics more time than that. Light Brahmas require from nine to ten months, which is a good deal of a handicap to them in comparison with other breeds. With these figures clearly in mind it is evident that if anything like full production is to be expected by November, hatching must be done before April.

But what about the fall molt which has been in former years such a bugaboo to those who wished to hatch early? While it is true that most Leghorns and many heavy hens hatched in February will molt in the fall, it is also true that the molt is an eccentric thing in California at the best, and seems to depend on weather and feed and a variety of other things. One of my two-year-old Orpington hens is going through her fall molt now, in February. Whether it was because she could not take time to molt before, or that the hot weather confused her, I do not know. The fact remains that she is molting. Some Leghorn hens molt twice in a year. Some February pullets begin to lay in July and then molt with the yearling hens in October. Some begin laying in September or October and lay right on through the winter. One never knows what will happen, so why worry about it? The fact is, that even among commercial poultrymen, who keep White Leghorns exclusively, February is coming to be preferred as a hatching month. One man hatches in February because he has found the early pullets are less liable to have chicken-pox in the fall. Another says they probably won't molt in the fall and he is perfectly willing to take the chances on it, for he will get a good many summer eggs

in any case. Another hatches early because he thinks he gets stronger chicks in cool, damp weather, another because he is naturally forehanded, and doesn't want to be bothered with young stock in the summer. Whatever the reason, they are all doing it.

The most common reason, I suppose, for delay in hatching among farmers is lack of broody hens. Few hens go broody in cold weather, and how can one hatch without a hen? How indeed? Well, why not try buying 50 chicks or so already hatched? One can get Leghorns in numbers to suit in any goodsized town in Southern California and in most of the smaller places. Most of these Leghorns are from bred-to-lay stock that is vastly more productive than the average farm hen. Buying day-old chicks is so much cheaper than keeping breeding stock that many large egg ranches now depend entirely on buying their chicks. If one does not care for Leghorns a little study of the advertising columns of poultry and farm journals and daily papers will bring to light many persons who have for sale chicks of other breeds. Most fanciers sell a few chicks if they are ordered in time. Not infrequently some one close by may be found who will sell not only chicks but the hen that hatches them.

Sometimes a broody hen can be bought. Sometimes she can be borrowed. If a single hen can be set, she may be given, when she comes off, a few artificially hatched chicks to mother with her own brood. A good hen can easily mother 20 chicks, and it is a great pity to waste her time with less than ten unless you are hatching your own eggs and care more for pedigree than for number.

If you have your own hatching eggs and no broody to hatch them with, you may possibly find some hatchery that will do custom hatching, that is, take your eggs and hatch them for you at so much per. When the hatching is well done, this is the best way I know of getting early chicks. You keep your own stock, have all the benefit of line breeding and careful mating, and yet can have your eggs hatched and delivered to your own brooder for from two to three cents per egg. I visited a hatchery recently that was doing custom hatching for two and one-half cents per egg, and doubtless there are many others. One needs a good brooder for mothering either the custom hatched or regular day-old chicks, but is saved the greater expense of running an incubator. Some fanciers do use the small incubator, but almost any of them would prefer custom hatching if he were sure it would be done by an expert.

I have said nothing about the farmer who postpones hatching or buying chicks because he thinks it would be cheaper to wait until his own hens are broody and set his own eggs. Such a policy is so penny wise and pound foolish that there is nothing to be said about it. Any one who will waste the golden hours of early spring and the chance of having a nice bunch of pullets ready for fall laying for the sake of keeping a few cents in his pockets has no conception of the purpose or possibilities of poultry culture. To him chickens are just chickens, and it is all one when they are hatched. The man who wants to help Uncle Sam in this time when our best is demanded of every one of us, will hatch early and buy what he cannot hatch, if by so doing he can make two hens grow where only one grew before and so increase the production of eggs.

## MORE EGGS, MORE POULTRY

Arthur A. Peters, district representative of the government poultry campaign, has arrived in Los Angeles from Washington and is located at room 504, Federal Building, Los Angeles. Mr. Peters' district covers all Rocky Mountain and Coast states. He will have the assistance of several local representatives and in addition will work through farm bureaus, state universities, poultry organizations, or other means of reaching poultry and egg producers. He will also work to induce greater production in orchard and in backyard where no poultry is now produced. Mr.



Peters has a number of bulletins and leaflets which will be helpful in this campaign. These will be sent for the asking from Los Angeles or from Washington. "First Care of Baby Chicks" has a fund of valuable information packed in two pages. The gist of the two pages is summed up in: "Keep the baby chicks warm. Have the brooder ready. Have an emergency brooder. Feed little and often. Give plenty of green feed, always pure water."

Another is an eight pager, Bulletin 656, "The Community Egg Circle." This has to do with marketing, with especial reference to cooperative marketing. Form of organization and by-laws are given.

Farmers Bulletin 624, "Natural and Artificial Brooding of Chickens."

Bulletin 682, "Simple Trap Nest for Poultry."

Farmers Bulletin 585, "Natural and Artificial Incubation of Hens Eggs." This is a valuable bulletin for everyone handling the incubator and touches the question from the study of an egg and all phases of incubation

through to disinfecting and storing of incubators.

Farmers Bulletin 801, "Mites and Lice on Poultry" gives 28 pages to discussing these exasperating pests.

Farmers Bulletin 858, "The Guinea Fowl." Guinea fowl are growing in favor as a substitute for game birds, with the result that Guineas are proving profitable.

There are also bulletins issued on Standard Varieties of Chickens, and one of this series, Farmers Bulletin, 898, has to do with the Mediterranean and Continental classes.

Farmers Bulletin 684, "Squab Raising," is a 16 pager, all about squabs.

Farmers Bulletin 791, "Turkey Raising," touches all phases of turkey raising from selection of stock to control of pests and marketing.

Farmers Bulletin 496 is by David E. Lantz and is on "Raising Belgian Hares and other Rabbits."

In ordering from the department, write Division of Publications, U. S. D. A., Washington, D. C. Do not write the Cultivator office for them.

## Little Things

Floyd Markham, Domestic Beekeeper

**M**OST of the work connected with beekeeping consists of doing little things. Those that can accomplish these little things quickly and eliminate the non-essential details are the ones that get most out of the business in cash. We often hear or read how much honey some beekeepers can extract in a day or how another can run several hundred colonies, produce a fair crop of honey and give them only comparatively slight attention, but these things are but the result of experience and systems where the details are thoroughly mastered, first class equipment used and the operator being able physically to do a great amount of work.

By reading text books and back numbers of bee-journals during spare time, one will pick up many little things that will help in making plans for the coming season. I say plans for one plan will not do. To me the production of honey is like a game of checkers or chess in which you must not only figure on playing your own men, but also the plays your opponent may make in order to play your own to win. In the game of producing honey your opponent is weather conditions.

I will mention a few little things that I have found to be time savers, most of them are not original, perhaps none are.

Most of us can and often do work when we do not feel just "fit" but we accomplish the most when we feel well. A few ounces extra clothing or shoe leather may at the end of a day make the difference between ones being tired out or still able to do some more.

A light colored shirt, a pair of paper hanger overalls made of white cotton drill, a pair of white socks and a pair of white canvas rubber soled tennis shoes make an ideal outfit for bee work; the shoes especially are light and easy and give a sure foothold when lifting and moving quickly. The overalls get dirty or rather show dirt easily but as they are

cheap several pairs can be kept on hand and they are easily washed.

When a swarm issues it should be cared for at once for another may come out and unite with them. Even when queens are clipped they sometimes cluster for some time before returning. With us the cluster is shaken into a light bushel basket and carried where we want them; in case they cluster out of reach a U-shaped piece of three-eighths iron rod is hooked on one handle of the basket and shoved into one end of a 10-foot length of conductor spout. This makes a swarm catcher that will secure a cluster if not over 16 feet off in the basket and some return and start clustering again, but one end of the conductor pipe is placed where they are clustering and the smoker applied to the lower end, this soon will smudge them off and they will "follow the crowd." Who originated outdoor feeding I do not know, but it is a good thing sometimes. Last spring we had no fruit bloom, colonies must be examined and queens clipped. Under the conditions robbers were delighted to help themselves. Tubs of sweetened water were placed just outside the yard with floats in them to keep the bees from drowning. The floats did not always descend as the feed lowered, but stuck to the sides of the tubs so some bees drowned and all the tubs at hand did not furnish enough surface so but what the bees were crowded. To remedy this, I turned up the sides of a piece of roofing steel about three inches making a shallow pan about 20 inches wide by ten feet long. In it I placed a rack made from thin strips of wood. To replenish the feed when covered with bees, I punched a hole with a 6d nail in an old ten gallon milk can and set it in the middle of the feeder. The feed was poured into the milk can and it ran slowly through the hole into the feeder thus rising so slowly in the feeder that no bees were drowned. For feeding, one gallon of honey was diluted with eight gallons of water. When feeding this way, work in the yard was as pleasant as during a honey flow. I also think it saved some colonies from starvation. Why do supply manufacturers groove the top bars of frames, make wedges, invent wedge drivers, or rabbit out one corner of the top bar to be nailed in again when a sheet of foundation can be fastened to a plain smooth bar quicker and better with melted wax? A pail of wax, kept hot over a small lamp stove and an old spoon with the point turned up to form a sort of spout is all that's needed. The sheet of foundation is pushed close against the top bar while the wires are imbedded, the frame is then held in an oblique position while melted wax is poured at the higher end and allowed to run down the bar along the foundation; just as it reaches the lower end the frame is reversed and the other side treated the same. It takes no more wax than you would put in a groove and you gain a row of cells in each frame.

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## The Home Garden

Written for California Cultivator By Ernest Braunton

**T**OO often the garden builder seeks for stunning effects. He wishes for something unusual in that it must be curious or wonderful. But the trend of the times is so strong toward such productions in all lines that one may gain "unusual effects" now only by seeing how simple yet beautiful he may have everything. And incidentally he will thereby attain the highest success when judged by the rules of art and will also accomplish the most soul-satisfying results.

So-called "stunning effects" usually succeed in stunning all of good taste who view the work. Striking effects are in the same class; they generally strike at the very roots of art. Do not get the "look-at-me" type of gardening in your mind. Build that you think should be and care not a whit about what the other fellow will say in commenting thereon. I often wish that a few at least would build gardens where none could see them ex-

cept friends of the family. This is often the case in England, where cottage gardens are hidden behind wall or hedge, and there only do you find the real home life. I do not like, nor do I approve of the open front yard style so prevalent in Los Angeles and elsewhere in California. If one also has a side or rear garden of merit I can love him well, but if all his effort is lavished on what he may show to the vulgar passing herd, he is not of mine.

Think of calling a place home where you step from the house only into the full gaze of the passerby, without any seclusion, privacy or snugness! Every person of taste craves a den, library, or some other room that is not open to all who call. If he does not crave the same effect in the garden he has not caught the spirit aright, or indeed at all. He is a mere copyist who is a trailer or follower, who will never lead in anything. It is far better to have a little lawn surrounded with shrubbery and shaded by a tree than to have no garden or even to have broad acres of blue grass for the vulgar gaze. Robert Burns chose for his crest a song-bird on a shrub and for a motto "Better a wee bush than no field" (shel-

ter). I like to step forth into that which is mine own, not in a feeling of selfishness, but with a feeling of reverence; a place where nature shines forth on every side, yet where the handiwork of man is not painfully apparent. I always love the virgin forest, which the Irishman characteristically described as "one where the hand of man has never set foot."

### Rural Gardens

The farmer is the only one in moderate circumstances who may have a real garden, one that satisfies. Occasionally I am asked what to plant on 25 foot city lot. I have but one answer: "There hain't no sech animal." Such a piece of ground is but one-half the frontage of the minimum-sized city lot. I simply do not care to discuss the smaller piece for it is impossible of plan, having no scope for landscaping. The answer comes back: "There is space for flowers." I admit and retort: "Plant them then, there can be no question as to where they are to grow."

But out in the country one may have a stretch of lawn, not necessarily level, or too smooth, yet enough so to appear natural and easy to care for. Nothing less than a hundred feet of lawn frontage should be permitted in the country. It need not be deeper than that, but put the house as far back as is convenient. For anyone may live practically on the street,

even in the country. The rural home should smack more of generosity, comfort, convenience, intricacy, quiet and seclusion—a rural retreat. One for whom I recently planned such a place had lived a busy life in a large city and wished quietness first, a characteristic California garden and a Spanish name that was not meaningless. I suggested as a name "El Retiro" and the owner was delighted. Do not seek to make a city home in the country but have a comfortable, modest retreat, where ease and natural beauty are the chief ends sought in the garden building.

### More Vines Needed

As a rule California home gardens lack in complexity or intricacy, not in plan, but in use of plants. We need more thickets, jungles and tangles. Much of this is not permissible in the city, except in the backyard of large places, but in the country, where such effects are more or less in harmony with the immediate surroundings let us have a little of this "camouflage." Do not use roses for such work except in a limited way and in limited numbers. They are not sufficiently soft and graceful in habit. One can hardly image "festoons" in rose bushes, however much they ramble, for roses are never true climbers except a few like the Banksias. Use bignonias, jasmines, honeysuckles and the better species of common vines. In jasmines do not fail to get the primrose jasmine, *J. primulinum*, for it is the best of all and one of the best vines ever introduced to California.

### LONG STAPLE COTTON

Continued from Page 291

plant five by three feet apart this season. There is plenty of room for experimenting on the different soils of the valley.

If the land is properly prepared and planted, a good stand will be assured, using 20 pounds of seed to the acre. As soon as the cotton is up cultivation should begin and continue for three or four months before the next irrigation should be given.

It is advisable not to thin to a perfect stand as the limbs near the base of the plant will grow very large and break down, causing difficulty in cultivating and picking. It is thought best to complete the thinning in two operations, which should begin when the plants are about eight inches high.

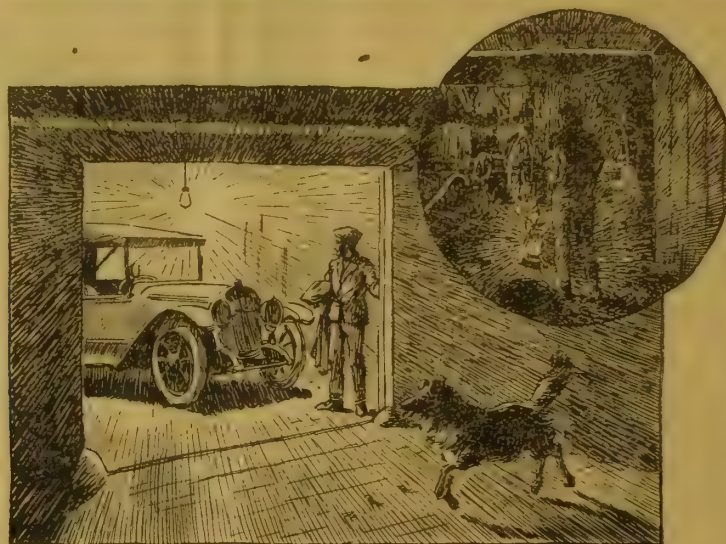
The time to irrigate will depend on the character of the soil. Soft soil retains moisture much longer than hard soil. A good plan is to wait until the plants wilt during the day, and when the tip does not revive, then the plant should be irrigated, but not given a heavy soaking. The proper handling of the water is necessary to obtain anything like a maximum yield. The main object is to develop a large root system early and discourage vegetative branches; otherwise the plant will develop wood, and not the bolls. Experience is necessary to know the best methods to use on each type of soil. Irrigations should be sparingly used until the plants are blooming in earnest, then irrigate regularly, not omitting cultivation as long as it is possible to go between the rows.

In regard to the bed planting I wish to state that there is an experiment being carried on at the United States experiment station at Bard under the direction of R. E. Blair, the superintendent. The lands are laid off eight feet apart by using a lister, irrigating in the furrow and if necessary listing the second time, smoothing off the bed and planting on either side of the furrow so the rows are about 13 inches either side of the center of the ditch or rows 26 inches apart, which makes the rows about six feet apart in the bed. This system makes each row an outside row, and it is possible to pick at the time of irrigation. This method is in an experimental state, but Mr. Blair stated it looked very promising. There were two plots planted in the bed method, one of Pima and one of Yuma variety. There is much difference between the two varieties, as much as there is between short staple and Durango, the Pima having much less vegetative branches, the Yuma growing very large tall plants with the same culture. The Pima produces more side fruiting branches. With these few suggestions let us all do our best, keeping a record of each operation, which will be of great benefit to the industry.

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Few, if any, other plants afford this optional use of generator and battery. Lalley-Light brings to your farm, electricity in its simplest, safest, surest form. Its reliability is established by nearly eight years of successful, everyday farm use.

It is so simple that even your boy or girl can run it and give it all the care it needs.

The engine, direct-connected to the generator, starts when a button is pressed. If run to replenish the bat-

tery, it automatically stops when the battery is fully charged. If the battery needs charging, a bell rings to warn you.

These are distinct Lalley-Light advantages, over and above the great comfort and convenience—the perfect safety and the proved economy—of electric light and power.

On thousands of farms Lalley-Light keeps the young folks contented; it is a boon of comfort to the old folks.

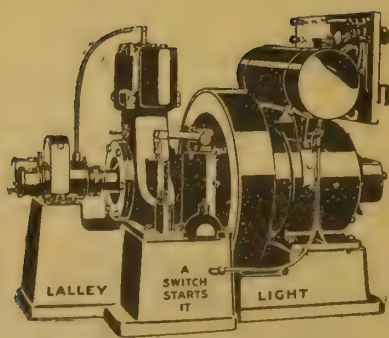
Its light is always ready—waiting, in a flood, for the turn of a switch—in house, barn and outbuildings.

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Generating Plant is 27 inches long, 14 inches wide, 21 inches high. Storage battery is included in complete outfit.



## Household Department

### GOD'S GIFT

By Ida M. Blake

God sent to us a gift today,  
A gift far richer than gold.  
He sent us rain, the key from heav'n  
To health and wealth untold.

To us it is a golden key  
That opens His treasure here,  
For earth will bud and blossom soon,  
Then full corn in the ear.

And when the harvest time is come,  
We gather the golden grain.  
"Oh God we thank Thee, God of love,  
Oh Thou that sendest rain."

### A STORY OF THE PLAINS

Continued from Page 284 last week

The mind of the ranchman being thus set at ease, the husband's heart began to assert itself, and John looked anxiously at his watch before vaulting into the saddle, realizing that it would mean hard riding to reach home by sunset. He set out at a gallop, his mind filled with thoughts of Alice waiting for him off in the east, and wondering how the day had passed with her. It was probably this that led him to take less notice than usual of the road he was taking, trusting to Bonny to pick her way safely. It was not until the little animal gave a sudden snort and swerved as if to wheel, that he looked up, keenly alive then to the present and its demands upon him. Bonny had stopped short and was trembling all over her body.

## BETTER RURAL HOMES

Barker Bros. are building a service—for the comfort and beauty of the rural home. Just as you are extending every effort toward greater crops and finer produce, to build a greater Democracy, so we are building a service that will give you a more comfortable home—a more cheerful home and a more substantially equipped home. Barker Bros. have the finest stocks of each branch of home furnishings on the Pacific Coast. We can serve you, in point of quality, in tasteful selection, and for the better things for your home in a better way than you can be served any where in the world.

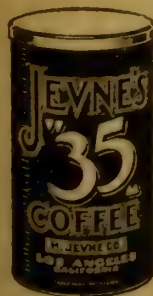
This service we offer you through the medium of Uncle Sam's mail service—photographs, catalogues or special information on any household article—just for the asking, send us a postal—test our service. Address Mail Order Division No. 25.

**Barker Bros.**  
ESTABLISHED 1880

The House of COMPLETE and  
COMPETENT Home Furnish-  
ing Service

724-738 South Broadway  
Los Angeles Cal.

Don't Purchase Coffee from Peddlers!  
Every time you buy coffee from a Peddler you share your coffee-value with him—you pay his salary.



Buy Dependable  
Coffee from a  
Dependable  
Company.

Say to your Grocer

"Send Me  
Jevne's '35',  
Coffee"

No Premiums—No Gifts—No  
Coupons.

An established, high-grade Coffee of superior appetizing flavor—the product of an old established, reputable company.

Your grocer can always supply you

Our monthly publication "Table Tips" is full of vital interest to the housewife. Send for your copy today! It's Free.

**H. JEVNE CO.**

LOS ANGELES

A terrible shout rang out on the silent air, and four, five, then a dozen figures came riding madly toward him in a cloud of dust.

It was too late to think of escape, and resistance was worse than useless. His only hope, he realized, even while the sweat stood on his brow, lay in strategy, so he reined in the panic-stricken horse and let them surround him, uttering demoniacal yells as they came. They were there, they had stopped in a panting circle and one of them was taking his six-shooter. Then at a signal the party wheeled and keeping John in their midst galloped away toward the north, far, far from any white man's habitation. Oh, Alice! Alice!

It was nearly evening when they finally halted to make their encampment for the night. John saw that they were nearly all young braves, headstrong and fierce, and gloating over their capture. His experience sneered at the thought of pacifying them with anything less than blood. They had tied his wrists and taken him off his horse, and were now gathered together, evidently debating as to the best use to make of him, for they cast frequent glances in his direction as they talked. Finally, the one gray headed man in the party approached him, and in almost unintelligible English, asked him where he came from. Boynton replied with a ready lie that his home was in Ore Creek, for with the calmness of a strong man who sees inevitable death before him, he was looking ahead to the morrow, when the sun would rise upon a slender young widow and her child, in a lonely prairie cabin. The interpreter appeared satisfied with the answer and repeated it to the rest, who received it with a variety of grunts. They had built a fire, and producing a piece of raw meat from somewhere, cooked it in the blaze, and ate it loudly, as animals do when they feed. John watched it all as one in a dream. The great black prairie around them, the bright fire in their midst, the circle of savage men tearing at their food. Must he believe that this was the last night of his life? The senseless cruelty of his fate smote upon his consciousness like a whip, stinging him to action, forcing his faculties to rouse themselves from the apathy stealing over them. Like a flash the inspiration came to him, and the savages turned in amazement at his sudden loud shout.

"Listen," he cried in his most masterful tone, depending on the interpreter to explain his meaning. "Me heap big medicine man, heap big medicine man!" and putting his bound hands to his mouth, he pulled out the four front teeth, flourishing them a moment before the eyes of the astounded Indians, and returned them again to their proper place. The suspense of the next few moments was beyond the power of description. Everything depended on the credulity of these savages. Would blood-thirstiness be swallowed up in subterfuge?

The Indians had dropped their meat and sat staring fixedly at him. Then with one voice they spoke to their interpreter, who advanced respectfully toward John, and begged him to repeat his miracle. Boynton complied with growing confidence, and the effect upon his audience was this time strikingly apparent. They talked together in low tones, glancing furtively at the "medicine man" from time to time, with mighty awe not unmixed with fear in their expression. Finally the interpreter again approached him, and with many protestations announced that they had decided to make him their chief if he would consent to rule them. At the same time he unbound his hands, and made a place for him by the fire. John sat in apparent deliberation for some moments, and then replied that he would think about their plan and give them his answer in the morning. In the meantime he must have a shelter for the night, and be left alone to talk with his spirits, to all of which the Indians granted respectful acquiescence.

A rude wigwam was contrived of poles and blankets at some distance from the fire, and now Boynton made his last demand, and the one which cost him the most inward trepidation. Bonny must be tied to a stake near the shelter, he declared with a stern

brow, and immediately one of the braves rose and searched out the feeding pony. It was more like a dream than before, this bewildering change from horrible death to a position of authority, and it took all his strength to continue master of himself.

It was over at last. He was in the wigwam, and the sound of heavy breathing from the forms around the fire told him that his captors were all asleep. A stealthy step in the darkness, a whispered word in the ear of the shrewd little pony, a muffled sound of galloping hoofs growing ever fainter in the still July night. Then freedom, and a long, hard ride through the blessed darkness.

A white faced woman walking up and down a narrow cabin room with a light in the window, and wringing her helpless hands, stopped and listened, and would have fallen if strong arms had not caught her.

"Alice, look up dear, it's all right." But it was some minutes before she could answer him.—Maxwell's Talisman.

### YEAST BREAD FROM CORN MEAL AND OAT MEAL

By Margarette Walker, Anaheim

#### Oat Meal Bread

Scald two cups rolled oats with two cups scalded milk or water. Add one tablespoon shortening, one tablespoon

sugar, one teaspoon salt, allow to cool until lukewarm. Then add one cup jug yeast or one yeast cake dissolved in one-half cup warm water. Add one cup wheat flour and let stand in a warm place for one-half hour, or until light. Add wheat flour to make a stiff dough, knead well and form into loaves. Cover and set in a warm place until doubled in size. Bake in a moderate oven.

The bread can be made in much less time by using the jug yeast.

#### Corn Meal Bread

Scald one and one-half cups white corn meal with two cups scalding milk or water, add one tablespoon shortening, one tablespoon sugar, one teaspoon salt. Let stand until lukewarm, then add one cup jug yeast or one yeast cake dissolved in one-half cup warm water and one-half cup white flour. Let stand in a warm place until light. Then add wheat flour to make a stiff dough, knead well, form in loaves. Put in warm place and let double in size. Bake in a moderate oven.

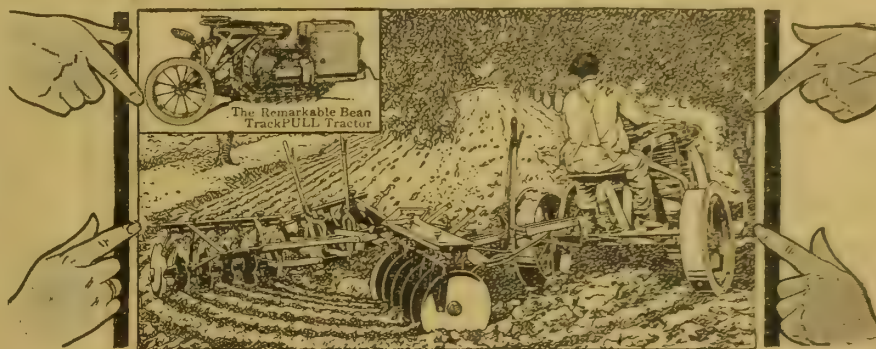
Much time is saved by using the jug yeast which is made as follows:

#### Jug Yeast

Boil 12 large potatoes, mash fine, scald one cup flour with which you have sifted one-half cup sugar and two tablespoons of salt, with the water in which the potatoes were boiled.

## Right Back—Down Same Row

—Remarkable Tractor Performance!



Make Tractor You Buy PULL TOOLS Around  
Short Turns. Get FREE TRACTOR BOOK NOW.

STRAIGHT-AWAY plowing is not a complete tractor test. "Acrobatic" turning stunts without tools is no test. Watch the Bean TrackPULL Tractor PULL TOOLS around short turns, doubling back in the same row, cultivating around a tree right under the lowest branches with the tools down deep, and no strain on the tractor anywhere. Our wonderful PATENTED FRONT DRIVE FEATURE permits the TrackPULL Tractor to use full power and pull full load just as easily on right-angle turns as on straight-away with no pivoting and no overload on one wheel or track. If you want a tractor for an orchard or a vineyard or for efficient field work you'll want the Bean, because the Bean is the only tractor built to perform these necessary feats. The patents are built right into the tractor and cannot be imitated.

The Bean exerts all its power through a single track and you "gee" or "haw" this track to steer. Ten-year-old boys turn this tractor all the way around inside a ten-foot circle (5-foot radius) with perfect ease. When you hit soft spots you simply throw the track over and pull out just the same as

with a team. No digging in deeper. "Almost animal intelligence," some users say.

Don't make mistake of buying a tractor until you've seen these features demonstrated and proved. You'll save money by buying a tractor like this and you'll save time and trouble which is just as good as a cash saving.

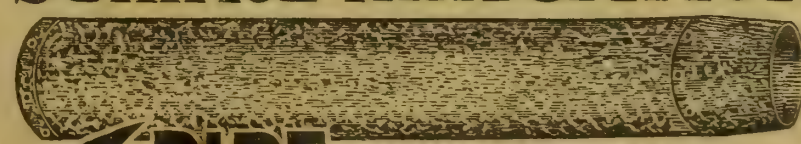
Don't wait. Get the Bean catalog now, note the price; and learn the name of the nearest demonstrating agent, who will give you a true demonstration (no tricks or "acrobatic" stunts) to show you what a tractor ought to do on your place.

Send in this coupon now before you forget it.

Bean Spray Pump Co., Dept. D-3  
231 W. Julian St., San Jose, Cal.  
131 N. Los Angeles St., Los Angeles, Cal.  
Please send Tractor Book with full information about the Bean TrackPULL Tractor.  
Name .....  
Street .....  
City .....  
County ..... State .....  
No. of acres ..... Kind of crops grown .....

## Bean TrackPULL Tractor (Patented Front-Drive)

## SURFACE IRRIGATION



### PIPE "BUILT TO LAST"

BODY MADE FROM SINGLE SHEET OF GALVANIZED OPEN HEARTH STEEL 10 feet long, with extra heavy taper collar on one end and band of heavy steel on the other—making each section 10 1/2 feet. Made with lock seam (four thicknesses of steel) which gives unusual strength and durability, besides—ABSOLUTE PROOF AGAINST LEAKAGE.

Write for illustrated price list. Orders given PROMPT DELIVERY.

Manufactured by

**Wolwine Metal Products Company**

Eighth St. and Santa Fe Ave.

LOS ANGELES, CAL.

Phones: Home F1088, Sunset Main 3141





## The Miracle of the Marne

The battle of the Marne halted the rush of the Germans towards Paris. It aroused the French to super-human bravery. They fought as if led by the spirit of the Maid of Orleans herself.

The Marne was a demonstration of the power of patriotism with its back against the wall. The same sacrifice of self, the same love of country and unity of purpose that inspired the French people must inspire us, and we must win the war.

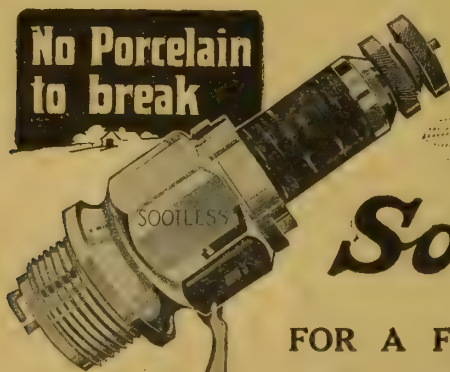
We are sending our best manhood to fight for us. They must be armed, fed and clothed, cared for through sickness and wounds. This is the work of every individual as well as the Government.

It is the proud duty of the Bell System to coordinate its purpose and equipment to the other factors in our national industrial fabric, so that the manufacture and movement of supplies to our boys abroad be given right of way.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES  
**One Policy      One System      Universal Service**

**No Porcelain  
to break**



## Sootless

### FOR A FULL DAY'S WORK

Half a day's work on your Tractor or Gas Engine can very easily be lost through a broken spark plug.

And it may come just when you can least afford to lose it. Don't take chances. Get the spark plug that has no porcelain to break—that's SOOTLESS—the brass plug with the heat proof, oil proof, leak proof, mica insulation—preferred for farm or car use.

Ask for SOOTLESS, the brass plug—no rusting into cylinder heads.

All Dealers, \$1.25

**OAKES & DOW COMPANY**  
25 CHARDON STREET, BOSTON, MASS.

Add two quarts of cold water and when lukewarm one yeast cake, soaked in warm water until soft. Cover and set in a warm place until foam covers the top, then put in jug and cork tightly. Or put in two quart cans.

### USES FOR BARLEY FLOUR

Written for California Cultivator  
By M. E. D. H., San Jacinto

#### Corn Meal Muffins

One egg, teaspoon of salt, two cups of sweet milk, one cup corn meal, one cup barley flour, grease muffin pans well, then beat into batter a tablespoon of melted fat, two teaspoons of baking powder, cook in a hot over.

This recipe may be varied by the addition of any cold rice, oats, mashed potatoes or bread crumbs. In that case decrease the amount of barley flour. Or you may decrease the amount of corn meal and increase the amount of barley flour. It makes a nice breakfast bread.

#### Biscuits

One cup barley flour, one cup white flour, one cup whole wheat. Three rounding teaspoons of baking powder, one teaspoon of salt, one rounding tablespoon of fat, enough sweet milk or water to make a dough stiff enough to handle, roll out, cut into biscuits, bake in a hot oven to a nice brown.

#### 50-50 Biscuits

Equal amounts of barley and wheat flour, a tablespoon of lard, teaspoon of salt, three teaspoons of baking powder, enough water to make a stiff dough. Roll out, cut, bake in hot oven.

### HOUSEHOLD QUERIES

#### Eucalyptus Portierres

Will some of the readers please tell me how to proceed to make a portiere of eucalyptus buds? What kind of twine to string them on, what kind of beads are most effective, and be sure to tell me how to finish the lower end of strings, also how to make the part that goes over the pole. Shall greatly appreciate someone's giving me this information. — Subscriber, Porterville.

### CORN MEAL RECIPES

The Sperry Flour Company is sending out these good ones. You will notice they are also economical.

#### Corn Meal Griddle Cakes

Three-fourths cup corn meal, one-fourth cup corn starch, one-half teaspoon salt.

All materials for use in cooking should be measured by level spoon or cup. All dry materials should be sifted before being measured.

Sift together. Pour over it three-fourths cup boiling water. Stir quickly. Add gradually one-half cup milk, one egg well beaten, two tablespoons flour and three teaspoons baking powder which have been sifted together. Beat well. Bake on a hot well greased griddle until brown.

#### Southern Corn Bread

Two cups corn meal, two cups boiling water, one-half cup sour milk, two tablespoons sugar (if desired), one teaspoon salt, one-third teaspoon soda, three teaspoons baking powder, two eggs (well beaten), two or three tablespoons melted shortening.

All materials for use in cooking should be measured by level spoon or cup. All dry materials should be sifted before being measured.

Measure and set aside all material. Pour the boiling water over the corn meal and stir quickly. Then add the milk, the soda, the salt, sugar, eggs which have been beaten, baking powder and lastly the shortening. Stir quickly, then pour in well greased muffin tins. Bake 15 minutes at 450 degrees.

#### Eggless Muffins

One cup corn meal, one-half cup flour, one teaspoon salt, two teaspoons baking powder, one-fourth cup sugar, one cup milk, two tablespoons melted shortening.

All materials for use in cooking should be measured by level spoon or cup. All dry materials should be sifted before being measured.

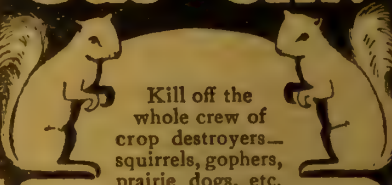
Mix dry ingredients. Add milk, melted shortening. Pour in well

greased muffin tins. Bake 30 minutes at 350 degrees.

### Sour Milk Corn Bread

Two cups corn meal, three-fourths teaspoon soda, one teaspoon baking

## Gas 'em!



Kill off the whole crew of crop destroyers—squirrels, gophers, prairie dogs, etc.

Gas 'em with Carbon Bisulphide quickly, easily and economically.

One burrow of squirrels will destroy more grain than your family can save in fifty wheatless days. Remember—these ground pests cost the farmers of the Pacific Coast more than \$6,000,000 last summer. So be forehanded—be truly patriotic—conserve the seed in your fields.

The University of California says: "From November until the end of February (the rainy season in California) the best way to attack the ground squirrels is to fill their burrows with gas from Carbon Bisulphide."

So too in other states! If the ground is full of moisture, whatever the month may be, Carbon Bisulphide is the best killer of squirrels, prairie dogs, gophers, etc.

A squirrel killed before March is worth a dozen killed later. Because—most young squirrels are born late in March or early in April. So gas the old squirrels now. Write today for prices and interesting folder telling how Carbon Bisulphide—the profit-saver—works.

**WHEELER, REYNOLDS & STAUFFER**

626 California Street  
San Francisco, California

## Use CARBON BISULPHIDE

### THE SELF-OILING WINDMILL

has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year.

Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws. Write AERMOTOR CO., 2500 Twelfth St., Chicago

**SMITH-BOOTH-USHER CO.**

Southern California Distributors for  
**AUTO-OILED AERMOTOR**  
Los Angeles

## PIPE-PIPE

100,000 feet New and Second-hand Pipe and Casing.  
Pipe—1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 3 1/2, 4, 4 1/2, 5, 6, 7, 8, 9, 10, 11, 12, 15 inch.  
Casing—3, 3 1/4, 3 1/2, 4, 4 1/4, 4 1/2, 5, 5 1/2, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6 1/2-inch 20-lb. ten thread.

Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 inch.  
All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

**ADAMS PIPE WORKS**

Bay and Mateo Sts., Los Angeles, Cal.  
Phones: F1917; Bdwy. 1264

## THE ORIGINAL CHEMICAL Indoor Closet

30,000 SOLD—FIFTH YEAR  
**More Comfortable, Healthful, Convenient**  
Eliminates the out-house, open vault and cess-pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

### ABSOLUTELY ODORLESS

Put It Anywhere In The House  
The germs are killed by a chemical process in water in the container. Empty once a month. No more trouble to empty than ashes. Closet absolutely guaranteed. Guaranteed on file in the office of this publication. Ask for catalog and price ROWE SANITARY MFG. CO., 1703 8th St., DETROIT, Mich.  
Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

## RHUBARB

PLANT YOUR LAND NOW TO WINTER RHUBARB  
You should get big crop by next fall. Others making \$1000 per acre, so can you with WAGNER'S GIANT—plant no other. Get your plants from originator and avoid disappointment. J. B. WAGNER, Rhubarb and Berry Specialist, PASADENA, CAL.



## The Cultivator Patterns



8727—Children's Set. Cut in sizes 2, 4, 6, 8 and 10 years. This pattern consists of a one-piece dress, gertrude petticoat which may be used for an underwaist, and a pair of one-piece drawers.

8068—Ladies' Shirtwaist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The ends of the notched collar extend into tabs which cross and form the front closing.

8113—Ladies' Waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The fulness of the back and fronts are gathered to the shoulder yokes; the waist buttons at the center back.

8691—Misses' or Small Women's Dress. Cut in sizes 16, 18 and 20 years. The waist is slightly long-waisted; the skirt has two gores and is gathered all around.

8696—Ladies' Coat. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The jacket has one button closing, and is cut away from this point to show the skirt.

8174—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. This one-piece dress has the panel and yoke in one piece at front and back.

8708—Ladies' Two Gored Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The skirt is two-gored; the front gore is fitted and the back gore is gathered to the slightly raised waistline.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

### HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

Pattern Department  
California Cultivator  
Los Angeles

powder, one teaspoon salt, one egg (well beaten), one and one-half tablespoon melted shortening, two cups sour milk.

All materials for use in cooking should be measured by level spoon or cup. All dry materials should be sifted before being measured.

Mix dry ingredients. Add milk, egg, melted shortening. Bake in a shallow pan 30 minutes at 350 degrees.

### SCHOOL CHILDREN PAINT POSTERS

When the advertising department of the Indiana office of the United States food administration sent out a hurry call to 500 Indiana art teachers not long ago, school children throughout the state of Indiana began to paint posters and coin slogans. Some slogans that would do credit to a trained copywriter have been the result. Among them are these:

"Be canny with food."  
"Peel thin and win."  
"Not that we love food less, but that we love Liberty more."  
"Spread butter thin—help the Sam-mies get Berlin."  
"Be a Conservation Bee."  
"Bread and Buns Will Beat the Huns."  
"Fill All Cans but Garbage Cans."  
"Can Until You Can't."  
"Every Spud Is a Bullet."  
"Save Bacon Until Berlin Is Taken."  
"Save Navy Beans. 'Twill Sink the Submarines."  
"Wise Wives Won't Waste."  
"Kill Kaiserism in the Kitchen."  
"Every Hoosier Help Hoover."  
"Join the Diet Squad."  
"Eat Fish—a Good War Dish."  
"The Nation Beats That Saves the Eats."  
"Pickle and Can for Uncle Sam."  
"Save Pieces for Peace."  
"Throw Away Your Frying Pan. Bake, Broil and Boil All You Can."  
"Save! The Kitchen Is Your Fort."

### NO DENYING IT

It was the rush hour in one of those quick-lunch places where you help yourself and use the arm of your chair as a table. A man called for a piece of pie and chose a chair; then, remembering that he wanted coffee, he dashed over to the service counter. When he returned with his coffee the chair was occupied by another hurry-up diner.

"Excuse me," said the first man, "but that is my chair."

"How do you know it is your chair?" demanded the occupant in a surly tone.

"Because I can prove it," stated the first man.

"How can you prove it?" asked the occupant.

"By your trousers," was the reply. "You are sitting on my pie."

### SYSTEM IS A GOOD THING

How many housewives have a well laid plan for the tasks of each day? There are certain duties that must be accomplished daily, one day laid aside for "general cleaning up," and then the planning generally ends, all other varied tasks being thrown in as time permits. This necessitates a great waste of time in making fresh decisions constantly and many are the worries consequent upon leaving things which mean family comfort undone.

### IMPOSSIBLE

Short: "I say, old man, can you lend me ten dollars?"

Longley: "Impossible. I've tried to lend you money several times, but you always seem to look upon it as a gift."

### THERE ARE MANY SUCH

"I don't see why you call Perkins stupid. He says a clever thing quite often."

"Exactly. He doesn't seem to realize that it should be said only once."

### EQUAL TO THE OCCASION

"John," demanded the wife of her intoxicated spouse, "how did you get that gash on your forehead?"

"Guess I must 'a' bit myself."

"Bit yourself!"—scornfully. "How could you bite yourself 'way up there?"

"Guess I must 'a' stood on a chair."

—Exchange.

## A Piano House of High Ideals

In the last quarter of a century Sherman, Clay & Co. have occupied a position on the Pacific Coast, second to none, building carefully from day to day a reputation for selling only goods of merit, of true musical worth and asking only fair and consistent prices.

Our customers and friends are legion. We are most careful what we recommend and when we do recommend, it is with the desire to serve the customer and serve him well. We study his needs with the desire to place in his home the instrument that best suits his purpose without it being an undue strain upon his pocket book.

We have only one price—the price tag on every instrument is in plain figures—there is positively no deviation from that price.

We offer no "special" inducements, no insurance, no "club" prices, no free music or scarf (bench or stool of course are considered part of the piano). We do not have "sales" on one pretext or another. Our prices are fair. We aim to be consistent—to sell good reliable instruments at a reasonable price.

We pay the freight anywhere in our territory. We gladly arrange convenient payment terms on any instrument.

If you are in the market for a Piano or a Player Piano, it is to your interest to call upon us or write us for information—to see what we have to offer.

We invite you to call at any of our stores—or write us asking for illustrated catalogues and prices.

We are dealers in Steinway and other Pianos, Pianola Pianos, Aeolian Player Pianos, etc.

## Sherman, Clay & Co.

Kearny and Sutter Streets, San Francisco.  
Fourteenth and Clay Streets, Oakland.  
Ninth and J Streets, Sacramento. Merced and J Streets, Fresno.  
325 E. Main Street, Stockton. 190-192 S. First Street, San Jose.  
Stores also at Reno, Santa Rosa, Vallejo, Portland, Seattle, Tacoma, Spokane.

## "The store where I do my trading"

THROUGHOUT the West—go where you may—big town, small town, cross-roads store—there you will find Ghirardelli's.

This West-wide distribution has been made necessary by demand—a demand for a delicious, sustaining food-beverage; a demand that is met by Ghirardelli's, and by this alone.

Result? Today Ghirardelli's Ground Chocolate is in daily use in more homes in the West than all other brands combined.

As a beverage it is beneficial; as an aid in baking and cooking it is invaluable.

Be sure to ask for it—at "the store where you do your trading."

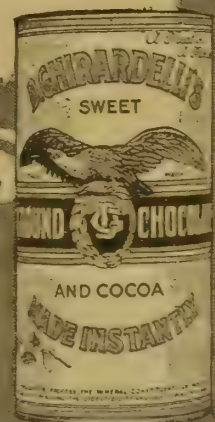
In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

D. GHIRARDELLI CO.

Since 1852

San Francisco

# Ghirardelli's Ground Chocolate



When writing advertisers, mention The Cultivator.



Since  
1902

## Pomona Duplex-Plunger Pumps

One Pump Will  
Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right"  
Irrigation Gates and Valves

PRICES RIGHT—QUALITY RIGHT  
SEND FOR BOOK C.

**Pomona Mfg. Co.**  
POMONA, CAL.

## Fertilizer

Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

**Rogers Brown & Co.**

1307 Baker-Detwiler Building  
Los Angeles, Cal.

## WHERE COVER-CROPS HAVE FAILED

and straw, manure, etc. have not been applied.

BALED SHAVINGS will supply the ORGANIC MATTER

essential in the maintenance of Soil Fertility, at LESS COST than any other material and SHOULD BE APPLIED NOW.

Phone or write for information and prices.

**MILLER BOX MFG. Co.**

201 No. Ave. 18 Los Angeles, Cal.  
Phones: East 118—Home 10489

## Morris & Snow Seed Co.

Gives Reliable Information as to

Flower and Tree Seed

Vegetable and Field Seed

Garden Tools

Nursery Supplies

Insecticides and Fungicides

Poultry Feeds and Remedies

439 S. Main St., Los Angeles, Cal.  
P5300—Broadway 1495

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OF EVERY DESCRIPTION  
BOUGHT and SOLD  
BUTTRISS & McCLELLAN  
205-7 N. Los Angeles St. A-5473 Bdy. 8098

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

## Los Angeles Market

Los Angeles, March 6, 1918.

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Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery.....50  
Dairy Exchange price past week on extras.  
Feb. 28Mar. 1 2 4 5  
'18 ..... 50 50 50 50 50

### CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....30  
Domestic Swiss .....34

### EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extra .....38  
Pullet .....35  
Case Count .....36  
Dairy Exchange prices past week on fresh extras.  
Feb. 28Mar. 1 2 4 5  
'18 ..... 35 35 35 35 38

### POULTRY

We quote to producers:  
Food administration orders hens sold for producing purposes only.  
Broilers .....36@38  
Fryers .....32  
Roasters, 3 lbs. and up .....30  
Ducks, lb .....25@27  
Roosters, old .....18  
Turkeys .....27@38  
Geese, lb. ....20

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, March 6, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. ....10.50@11.00  
Helfers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....4.00@5.00

Hogs—  
Av. 125 lbs. ....14.50  
Av. 150 lbs. ....15.00  
Av. 175-299 lbs. ....16.25  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers .....10.50@11.00  
Ewes .....10.00@10.50  
Lambs .....13.50@14.00  
Yearlings .....10.50@11.00

### POTATOES

Wholesale selling price:  
Oregon Early Rose .....2.75  
Northern Burbank, cwt. ....1.60@1.90  
Sweet, sk. ....4.50@4.75

### ONIONS

Wholesale selling price:  
Brown .....2.25  
White .....3.00  
Garlic .....6

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....90@1.15  
Beets, sk. ....2.25  
Brussel Sprouts, lb .....12  
Cabbage, lb., 3¼; sk. ....2.20  
Red, lb. ....5  
Carrots, doz. ....30  
Cauliflower, doz. ....75  
Celery, doz. ....80  
Cucumbers—Hothouse, doz. ....75@1.75  
Egg Plant, lb. ....20  
Horseradish, lb. ....15  
Lettuce, doz. ....30  
Leeks .....30  
Mint, doz. ....40  
Mustard, doz. ....20  
Onions, green, doz. ....25  
Oyster Plant, doz. ....40  
Peas, Tel., lb. ....12  
Peppers, Chili, lb. ....20  
Parsnip, doz. ....40  
Parsley, doz. ....35  
Radish, doz. ....25  
White .....35  
Rhubarb—Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Crookneck .....70@75  
Hubbard, lb. ....3¼  
Tomatoes, lug. ....2.25  
Turnips, doz. ....30  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.75  
King David .....1.75@2.00  
W. W. Pearmain .....1.60@2.25  
Spitzenberg .....2.40@3.00  
Y. Newton .....1.60@1.85  
Avocados, doz. ....5.00@7.00  
Bananas, lb .....5  
Pears, Winter Nellis, lug .....2.25

### CITRUS

Lemons, 5.00@5.50 packed; juice.....2.50  
Loose .....4.00  
Oranges—Navels, bx. ....3.00@6.25  
Grapefruit .....3.00  
Limes, basket .....75  
Tangerines, lug. ....1.75

### DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
(20-lb. bx., faced, 50s, ½c less). Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 18; extra ch., 18½; fy., 19; pears, 12½; peaches, ch., 12; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 14; 40-50s, 13½; 50-60s, 18; 60-70s, 10½; 70-80s, 10; 90-100s, 9.  
Figs—Calmyrnas, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....24  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size

as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

### HONEY

Prices of wholesaler to retailer:  
Extr. W. W., lb. ....20  
Comb, W. W. case .....5.00  
Light Amber, case .....4.75

### RICE

Wholesale quotations:  
Cal. ....7.00@7.75  
Broken .....6.25@6.25

### BEANS

These are prices made by wholesaler to retailer.  
Lady Washington .....13.50  
Limas .....14.00  
Pinks .....9.00  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....13.50  
Blackeyes .....9.50  
Tepary .....10.00@11.00  
Lentils .....25.00

### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oat .....30.00@32.00  
Volunteer Oat .....18.00@20.00  
Wheat .....26.00@29.00  
Barley .....28.00@31.00  
Alfalfa .....28.00@30.00

The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

### GRAIN AND FEEDSTUFFS

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal .....2.20  
Alfalfa Molasses .....2.30  
Barley, Rolled .....3.90  
Barley, Re-cleaned Whole .....3.95  
Barley Hulled .....4.55  
Beet Pulp .....2.25  
Bran, (Light) 65 lb. sk. ....1.95  
Cocoanut Meal .....2.75  
Cottonseed Meal .....3.27½  
Corn, Yellow .....4.15  
Corn, White .....4.75  
Corn, Cracked .....4.20  
Corn, Egyptian .....4.15  
Corn Feed Meal .....4.25  
Mixed Feed (80 lb. sacks) .....2.12½  
Milo, Maize, Field Run .....3.90  
Oat Chop .....1.90  
Oats, White .....3.90  
Oats, Rolled White .....4.05  
Oats Hulled .....5.20  
Oats Rolled Chicken Groats .....5.40  
Oats Eastern Red .....3.90  
Oilcake Meal .....3.85  
Red Dog .....2.65  
Rye .....4.40  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Buckwheat .....5.00@5.10  
Canada Peas .....6.40@6.50  
Charcoal, 50 lb. sk. ....3.40@3.50  
Clam Shell .....70@95  
Grit Granite .....75@85  
Hemp .....5.50@5.60  
Oyster Shell .....1.35@1.45  
Red Millet .....4.65@4.75  
Sunflower Seed .....5.15@5.25

Soya Bean Meal .....3.50@3.60  
Scratch Feed .....4.20@4.30  
Scratch Gritless .....4.40@4.50  
Vetch .....5.10@5.20  
Rice Bran, ton .....40.00  
Middlings, ton .....45.00  
Rice Polish, ton .....56.00

## San Francisco Markets

San Francisco, March 5, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price, per pound, as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Fresh extras .....50½  
Prices on butter are practically 18 cents above year ago this date.  
Feb. 27 28Mar. 1 2 4  
'18 ..... 50½ 50½ 50½ 50 50½

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25½; Y. Am. ....28  
Jack cheese, full cream .....26@27  
Half skim .....14@17

### EGGS

Extras .....36  
Firsts .....34  
Selected Pullets .....34½  
Feb. 27 28Mar. 1 2 4  
'18 ..... 38 36½ 34½ 35½ 36

### POULTRY

We quote from producers, lb.:  
The food administration forbids sale of hens for meat until after April 30.  
Broilers—1 to 1¼ lbs., 50; 1¼ to 1½ lbs., 45; 1½ to 2 lbs., 39@40; 2 to 3 lbs., 35@40.  
Roosters .....25@40  
Squabs, doz. ....25@40  
Ducks .....25@30  
Geese .....27@30  
Belgian Hares, live, lb. ....22@23  
Turkeys, dr., 35; live .....28@30

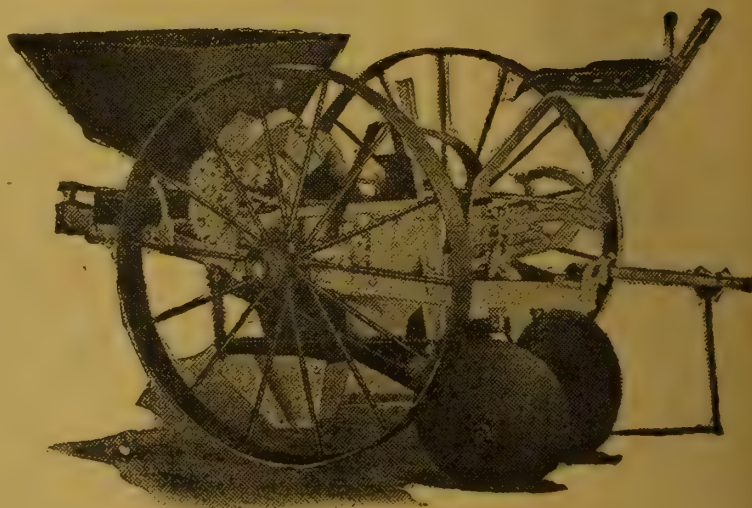
### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.  
Steers, lb., 9½@11½; undesirable, 6½@8½; cows and heifers, 7½@8½; undesirable, 4½@6½; calves, 10.  
Sheep—Lb. gross weight: Fat, unshorn wethers, 14@14½; ewes, 11@11½; lambs, yearlings, 15@16; shorn sheep, 1½@2 less.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 14½; 140 to 300 lbs., 16; 300 to 400 lbs., 15½.

### POTATOES

Wholesale selling prices at wharf, cwt.  
Oregon Burbanks .....1.50@1.75  
Nevada .....1.40@1.50  
River .....1.00@1.50  
Yakima Gems .....1.40@1.75  
Sweets .....4.00@4.25  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.50@1.75.

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See our new Hoover Potato Planter, most accurate one-man planter on the market. No large castings to break. Can see planter dropping from seat. Don't fail to see it. Made in single and double row, with or without fertilizer attachment.

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## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

**BRENTWOOD IRRIGATED FARMS,** In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address

**BALFOUR, GUTHRIE & CO., LAND DEPT.,** 350 California St., San Francisco



high top, 1.50@1.75; Garnet Chile, 2.75@3.00; White Rose, 2.00@2.25; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

**ONIONS**  
Wholesale selling price on wharf, cwt.:  
Australian Brown .....1.50@1.60  
Bermudas .....2.75@3.00  
Garlic, lb. ....3½@4½

**VEGETABLES**  
Wholesale selling price.  
Artichokes, doz. ....1.50  
Asparagus, lb. ....10@18  
Beets, sk. ....1.25@1.50  
Brussel Sprouts, lb. ....5@7  
Carrots, sk. ....1.00@1.25  
Cauliflower, cr. ....1.00  
Celery, Delta, cr. ....1.25@2.50  
Cucumbers, doz. ....1.25@1.75  
Egg Plant, lb. ....10@12½  
Endive, lb. ....25@30  
Lettuce, cr., Southern, iced.....1.00@1.25  
Uniced, 50@75; Imperial.....1.40@1.50  
Onions, green, bx .....1.00@1.25  
Parsnips, sk. ....1.25@1.60  
Peas, lb. ....7@13  
Peppers, Bell, lb., 25@30; Chili.....15@17½  
Pumpkins, sk. ....85@1.00  
Rhubarb, bbl. ....5@5½  
Strawberry, lb. ....9@10  
Squash—Marrowfat, sk .....1.00@1.25  
Cream, lug .....75@1.00  
Hubbard, sk. ....1.00@1.25  
Tomatoes, Mex. ....2.00@2.50  
Turnips, sk. ....85@1.00

**FRESH FRUITS**  
Apples — Spitzenburg, 2.00@2.50; Red 1.25@1.50; Newton Pippins, 1.35@1.75; 1.25@1.50; Newton Pippins, 1.15@1.75; Pears — Winter Nellis bx., 2.00@2.75; winter pears, lug, 1.50@1.75.  
Bananas, Hawaiian, lb. ....5½  
Loquats, cr. ....2.25@2.50  
Pineapple, doz. ....4.00@5.00  
Citrus Fruits — Lemons, bx. according to size, fy., 3.00@6.00; ch., 2.50@3.00; lemonettes, 1.50@2.25; grapefruit, 3.00; Imperial, 2.75@3.25. Oranges—Bx. Navels, fy., 3.00@6.00; ch., 2.75@4.50; do eulls, 2.25@2.75; Mandarins and Tangerines, ½ bx., 2.50@3.00.

**DRIED FRUITS**  
Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, lb. standard, 9½; choice, 9½; extra choice, 10; fancy, 11.  
Figs—in 50-pound boxes, per pound: White Adriatic, standard, 8½; choice, 9½; extra choice, 10½; fancy, 11½; Callmyrna, fancy, 15½; extra fancy, 16½.  
Apricots—Bulk basis: Standard, 13½; ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8; 40s, 8½; 30s, 9½.  
Apples—in 50-pound boxes, lb.: Fancy 15½; ex. ch., 14½; ch., 14½.  
Pears — Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; do, 12-oz. 45 to cs, 5.25; ch., 16-oz. cartons, 3.00 for 36s; do, 12-oz. cartons, 45s to cs, 3.10. In bulk: Sun Maid, 1.75; fy., 1.90; ch., 1.75.  
Sulphur-bleached Thompson, extra fy., 5.37½; fy, 5.12½; ch., 4.87½; soda-bleached, 4.75.  
Loose: One-crown, 4.15; 2-crown, 3.40; 3-crown, 3.65; 4-crown, 3.20.

**NUTS**  
Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. K. L., 19½; No Plus, 18½; Drakes, 18; hard shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts, Va. ....15  
Pecans, lb. ....19@20  
Pine Nuts .....20@22

**HONEY**  
To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

**BEANS**  
Jobbers' prices, cwt., recleaned:  
Limas .....13.50  
Bayous .....9.25@9.50  
Small Whites .....13.00  
Large Whites .....12.40@12.50  
Mexican Reds .....9.00@9.25  
Blackeyes .....8.50  
Pinks .....8.40  
Red Kidney .....13.00  
Cranberry .....12.50  
Teparies .....10.50

**RICE**  
By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

**HAY**  
Under date of March 2, Scott, Magner & Miller says:  
Receipts of hay for past six days have amounted to 1250 tons. The demand for hay in San Francisco and Oakland has continued along very moderate with no particular features to draw one's attention.  
The demand at country points has fallen off considerably since the rains and for the reason that many have bought hay to feed their stock temporarily and have now ceased buying, figuring that they would have grass very shortly and would not require further.  
The interest of the entire grain, feed and hay trade has been centered this week around the United States food administration declaration to regulate the entire industry.  
Fancy Wheat Hay, (light 5 wire bales) .....29.00@30.00  
No. 1 Wheat or Wheat and Oat Hay .....27.00@29.00  
No. 2 Wheat or Wheat and Oat Hay .....25.00@27.00  
Choice Tame Oat Hay .....28.00@29.00  
Other Tame Oat Hay .....25.00@27.00  
Wild Oat Hay .....24.00@27.00  
Barley Hay .....25.00@27.00  
Alfalfa .....25.00@27.00  
Stock Hay .....20.00@22.00

**No. 1 Barley Straw .....60@90**  
**GRAIN**  
Grain Exchange prices, ctl.  
Corn, Cal. Yellow, cwt. ....3.45@3.65  
W. Egyptian .....3.75@3.80  
Brown Egyptian .....3.55@3.60  
Barley, Feed and Brewing, cwt. ....3.62½@3.65  
Milo .....3.55@3.60  
Oats, Feed .....3.25@3.50  
New Black .....3.25@3.35  
Rye, Utah .....4.00@4.25  
Wheat — Government prices: Common white hard, base price is \$3.50 per cental, or \$2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft wheat, base price 2 cents per bushel less, or \$2.08 per bushel; white club (including Sonora), \$2.06 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, 3-cents per bushel reduction; if 56 to 58 pounds, 6 cents per bushel less; if less than 56 pounds, grain becomes sample grade and sells on its merits up to within 1 cent per bushel of 56-lb. wheat. Sacked wheat 4 cents per bushel more, less tare for weight of sacks.

**FEEDSTUFFS**  
These prices applicable to San Francisco, with \$1.00 less at Sacramento and Stockton, are for cash at the mill in carload lots, and include sackage, with an additional rate of 50 cents per ton in less than carload lots.  
Wholesale prices per ton. Prices fixed by food administration as San Francisco price; Sacramento and Stockton \$1.00 less on carlots at mill door:  
Bran .....34.00@35.00  
Middlings .....41.50@42.50  
Mixed Feed .....37.00@38.00  
Shorts .....35.00@36.00  
Rolled Barley .....72.00@74.00

**SEEDS**  
Prices in round lots, lb.:  
Millet, recleaned .....4½@5½  
Alfalfa .....20@21  
Flax .....6@6½  
Hemp .....4½@5½  
Rape .....2½@3

### Citrus Fruit Market

Los Angeles, March 6, 1918.  
The only comment possible on the market this week is that prices are higher and every offering is picked up. Lemons are especially strong.  
**Shipments**  
Shipments of citrus fruits from California to date, since November 1, 1917: Southern California, oranges, 4371; lemons, 1164; total, 5535. To same date last season: Oranges, 9677; lemons, 2003; total, 11,680. Central California, this year: Oranges, 1896; lemons, 107; total, 2003. To same date last season: Oranges, 4030; lemons, 159; total, 4189. Northern California, this season: Oranges, 202; last year, 842.

**AT THE AUCTIONS**  
February 28  
New York: 3 Nav. 1 Val. Nav. \$3.60-\$6.20; Val. \$4.60-\$5.25.  
March 1  
New York: 7 cars. Nav. 2.90-\$6.55. Philadelphia: 2 cars. Nav. \$3.40-\$4.70; Val. \$3.70.  
St. Louis: 4 cars. Nav. \$2.10-\$5.10. Seed, \$3.75-\$4.40; St. Mike, \$4.50-\$4.90.  
March 4  
New York: 12 cars. Market higher. Nav. \$4.00-\$5.65; Tang. ½s \$2.90-\$3.25. Boston: 8 cars. Nav. \$2.95-\$5.95; lem. \$6.35-\$7.70.  
Cincinnati: 3 cars. Nav. \$4.55-\$5.20; lem. \$4.50-\$6.60.  
Philadelphia: 1 car. Nav. \$5.30.  
St. Louis: 3 cars. Nav. \$3.30-\$6.40; Val. \$6.60; lem. \$6.05-\$6.80.  
March 5  
New York: 10 cars. Nav. \$3.70-\$5.25; lem. \$7.20-\$8.85; Tang. ½s \$2.90.

**CAULIFLOWER AND BROCCOLI**  
Continued from Page 300  
the growth of foliage, and the short leaves are not an adequate protection from the sun. Many heads are consequently discolored, much of the flower being creamy to yellow. Many of the heads are not solid.  
Alameda County, which has a more restricted acreage, has had more general irrigation than San Mateo County, and will begin shipping the middle of February.  
Reports from Oregon indicate that broccoli shipments will start somewhat sooner than expected and much earlier than last year. The open winter has been favorable and it is believed that the shipments will be active before March 1.  
The first shipment from the Imperial Valley occurred on February 12. The control of aphids in the valley has been such a difficult task that it is highly improbable that this section will ever become a cauliflower district. The need of Coast fogs and rains is keenly felt and a light crop is expected.

WEATHER CONDITIONS					
San Francisco, Cal., March 2, 1918.					
—Rainfall—					
Stations	Wk.	Season.	Norm.	Max.	Min.
Eureka	.39	16.00	32.02	58	32
Red Bluff	.00	6.95	17.86	70	40
Sacramento	.00	5.01	14.13	68	40
San Francisco	.23	8.15	16.58	68	46
San Jose	.26	4.42	11.87	72	36
Fresno	.74	5.50	6.58	72	40
San Luis Obispo	1.81	11.44	14.35	72	38
Los Angeles	1.90	7.02	11.16	78	46
San Diego	.19	3.36	7.37	74	46



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**No End Thrust Possible**  
**No Set Collars Used**  
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We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

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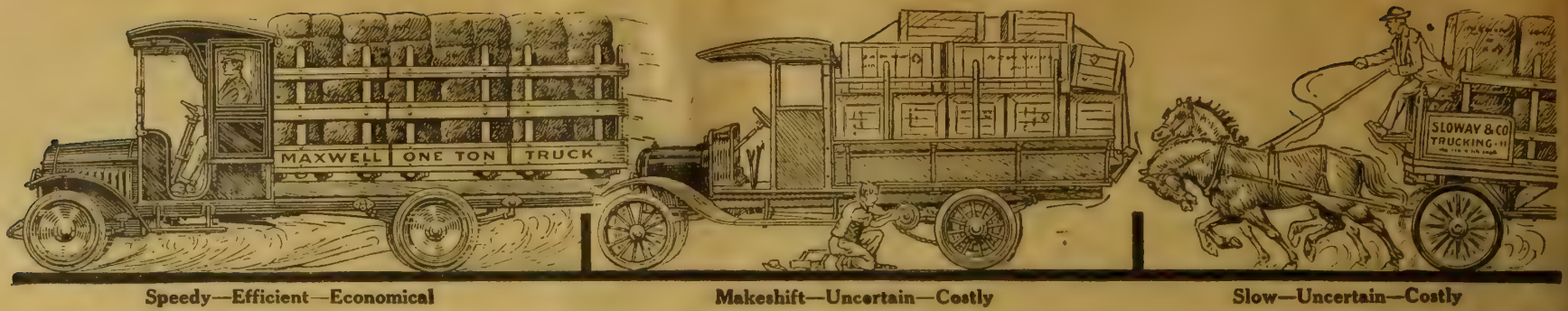
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STANDARD OIL COMPANY (California)





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As a business farmer, you must have a truck. Don't postpone decision longer. Buy now while you still can get one. Don't wait until only the money-wasting makeshifts are left.

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This is the way the traffic expert would look on your trucking problem:

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3. **Passenger Car**—Adapted into a truck by a makeshift attachment made by a firm that did not make the car. Sure to breed trouble. Hard to keep in condition. Hard to find and cure trouble. Divided responsibility.
4. **3-Ton Truck**—Over-heavy for everyday work. Wasteful unless always used at full load.
5. **Unproved 1-Ton Trucks**—Partly experimental. Not made of highest grade steel. Over-heavy. Uncertain as to service. Costly to operate.

6. **Standardized, Time-Tested Maxwell One-Ton Worm-Drive Truck.** Low first cost. Low operating cost. Complete truck designed wholly as a truck. Made of high-grade automobile steels. An engine which has proved its reliability in years of use on hundreds of thousands of cars under all possible conditions. Worm drive of the same type as on trucks costing \$5,000. Completely enclosed drive, safe against derangement by the worst roads or worst weather.

Get the facts. Write us a letter. The more coldblooded your judgment in choosing your truck, the better we will be pleased.

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# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

March 16, 1918

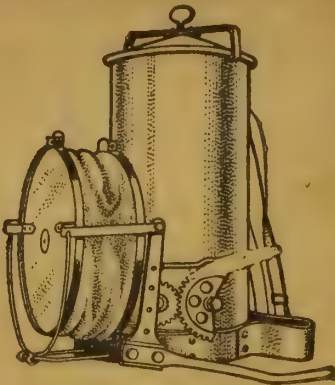
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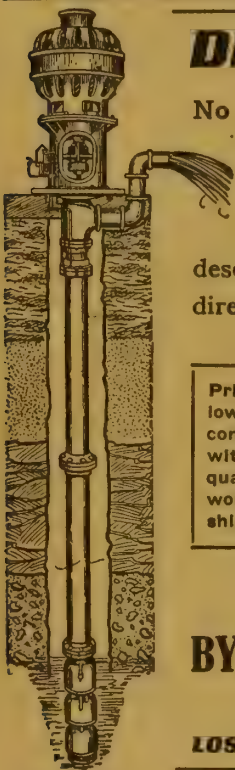
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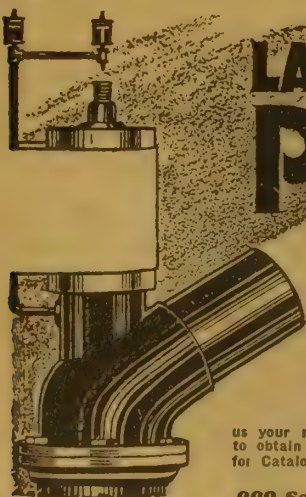
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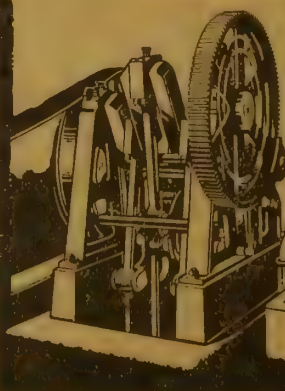
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# California Cultivator

Vol. L, No. 11

LOS ANGELES: MARCH 16, 1918

One Dollar Yearly

## The Fitting of Bean Land

A Description of Three Systems of Bean Culture Practiced in California, with a Chart Giving the Best Varieties to Plant. Written for California Cultivator.

**T**HERE were about 558,000 acres of field beans in California in 1917 from which was harvested about 4,821,000 centals of beans, worth about \$50,000,000. This crop, the largest ever produced in the state, constituted 44 per cent of the entire dry bean crop of the United States and exceeded by five per cent the combined output of the five next important states, Michigan, New York, Colorado, New Mexico and Arizona. About 65 per cent of the California crop is produced without irrigation of any kind; about 25 per cent is produced on subirrigated land and about ten per cent on surface irrigated land. Each of these types of land requires a different system of bean culture and to some extent determines the variety to plant and the time to plant it.

### Dry Farming System

The majority of the Lima bean acreage of Southern California, nearly all of the Small White and Blue Pod acreage of the central Coast counties, and a considerable part of the Blackeye and Tepary acreage of the interior districts is dry farmed. That is to say the land receives no water other than that which falls as rain during the winter and is stored in the soil for the use of the crop during the summer.

**Fall Plowing:** In order to secure the greatest absorption of rain and reduce to minimum the loss of rain through surface run off, the land should be plowed dry to a depth of 12 or 14 inches as soon as possible after harvest in the fall. In dry districts especially on heavy soils, or on soils not previously worked deeply or on soils underlain by hardpan or impervious subsoils, this deep fall plowing may advantageously be supplemented by subsoiling to a depth of 15 to 18 inches in order to increase the absorptive and storage capacity of the soil.

**Winter Working:** Heavy soils plowed dry will turn up rough and lumpy and should be pulverized and firmed as soon as sufficient rain has fallen to put them in workable condition. The reduction of heavy soils may best be accomplished by the use of a heavy spike tooth roller or "cross kill" but the lighter soils respond as well to a disk or corrugated roller. Throughout the rainy season, the surface of the land, to a depth of about four inches, should be maintained in a loose mellow condition, this for the two-fold purpose of increasing absorption of rain and of reducing losses through surface evaporation. Each rain that is followed by drying weather will result in a running together and crusting of the soil. The crust thus formed should be broken frequently and should never be left until it has become too hard and thick to pulverize smoothly and finely. The most effective implements for this work are the chisel and spring tooth harrow. Either of these may be used on a fairly moist soil

without deleterious effect and either may be adjusted for the shallow working required. The cyclone, or in fact any knife cultivator should not be used for this purpose because by their shearing action in moist soils



Bean Fields with Almost the Expanse of the Ocean  
Pink beans as grown in the Sacramento Valley.

they develop a tempered layer of soil at the depth they run, which prevents the preparation of a fine mellow seed bed later in the season.

**Spring Working:** The last chiseling or spring tooting should be done as soon as possible, without puddling the soil, after the last rain of the season, and should be as shallow as possible, not exceeding three inches in depth. From then until planting time there are but two objects to attain, first the destruction of weeds of every description, and second, the continuous maintenance of the soil moisture near the surface without loss. Two implements are indispensable for this work, the "cyclone" (Ventura weed cutter), and the corrugated roller, the first to destroy weeds and maintain a fine shallow mulch, and the latter to pulverize and hold the moisture up. One or both of these implements should be used, under ordinary circumstances, at about ten day intervals, from the time of the last chiseling until the planters are sent into the field.

**Spring Plowing:** Under the above system spring plowing is unnecessary, and even undesirable, and should not be done unless a neglect of the winter and spring work makes it necessary as a means of turning under weeds and preparing the soil for planting. If done it should precede planting by at least six weeks, should not exceed six inches in depth, and should be followed immediately by disking, cross-disking, harrowing, and rolling, in order to obliterate air spaces to the bottom of the furrow and prevent rapid drying of the freshly plowed land.

### Sub-irrigation System

A large part of the reclamation districts of the Sacramento River and the Stockton delta, together with the high water table lands of the San Joaquin Valley are classed as sub-irrigated lands and receive their moisture supply in part from underground sources. The culture of beans in lands of this character is simpler and involves less labor than on lands of the preceding (dry farmed) class. Deep fall plowing soon after harvest should be practiced, because it gives the benefit of a deep seed bed and deep feeding area for the bean roots and yet allows sufficient time for the soil to settle before planting. After this, most of the winter and spring working previously described may be dispensed with, but sufficient cultivation should be done to keep the land clean, make spring plowing unnecessary and leave the land fine, firm and mellow at planting time. The selection of implements and the sequence of operations is far less exacting than in the previous (dry farming) system, and the details of management should be varied to meet the individual requirements of each piece of land.

### Surface Irrigation System

Surface irrigated bean land is the least extensive of the three classes but Continued on Page 326

### THE KIND OF BEANS TO PLANT

Dry, warm, unirrigated districts, early planting.

Blackeye	Tepary
Garbanzo	

Dry, warm, irrigated districts, late planting.

Red Mexican	Lady Washington
Pink	Henderson Bush

Coast districts north of San Francisco.

Lady Washington	Pink
Red Kidney	Blue Pod
Red Mexican	Garbanzo

Coast districts, San Francisco to Santa Barbara.

Blue Pod	Pink
Small White	Garbanzo
Lady Washington	Red Kidney
Red Mexican	Horse Bean

Coast district, Santa Barbara to San Diego.

Lima (fog belt)	Pink
Lady Washington	Bayo
Henderson Bush	Red Mexican
(high land)	Blackeye
French White	(high land)
Garbanzo	

Lower Sacramento River.

Pink	Lady Washington
Bayo	Garbanzo
Cranberry	Red Mexican
Red Kidney	Horse Bean
Blackeye	

Stockton Delta

Pink	Bayo
Lady Washington	Red Mexican
Blackeye	

San Joaquin Valley

Tepary	Red Mexican
Blackeye	Pink
Lady Washington	

Imperial Valley.

Tepary	Blackeye
Garbanzo	

Slightly alkaline soil.

Most resistant	Slightly resistant
Horse Bean	Tepary
Garbanzo	Lima
Blackeye	

Fall, winter or early spring planting.

Horse Bean	Garbanzo
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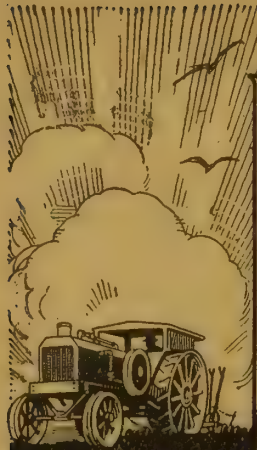
Late planting overflow land.

Red Kidney	Tepary
------------	--------

High elevations in mountains.

Red Kidney	Horse Bean
Bayo	Garbanzo





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## Citrus Culture in China



**P. CLAUSEN**, now in charge of the Southern California insectary at Alhambra, and later to be in the trenches, has made report of his investigations in the Orient, and from the report we quote as to citrus culture in China:

The writer's observations upon citrus culture in China cover only the section from Foochow southwards to Canton, though citrus is grown quite extensively in several provinces farther north. It was not possible to secure any accurate data bearing upon the acreage or production in these provinces because such information is not collected by the government or by any other agency. The methods employed in growing this fruit are practically identical with those used several hundred years ago, as no scientific study of the various problems confronting the industry has as yet been undertaken.

### Climate

The climate of the citrus producing sections of China is in general somewhat colder during the winter than that of Southern California and covers a longer period of time. More or less injury to the trees occasionally results from unusually cold weather but is no more frequent than in this state. The summers are extremely hot and the humidity high during the entire season.

### Varieties

There are three varieties of oranges grown throughout China, these being the Ponkwan, or Mandarin, the Suikwan, and the Tankwan. The first named variety is by far the most extensively grown and is an excellent fruit for local consumption. It is very loose skinned, sweet and in general somewhat similar to the Satsuma orange of Japan. The Suikwan is not as sweet as the Ponkwan, but has a much tighter skin, which gives it better shipping qualities. The third variety, the Tankwan, is probably a hybrid of the two first named varieties. It is rather small and with a medium thick skin, and has much the flavour of the tangerine, which it somewhat resembles.

Two varieties of pomelo are grown in the south China section, particularly in the vicinity of Amoy and Swatow. The Matabuntan, or white pomelo, is the best, and is more extensively grown than the Toyu, or red variety. The fruits in both cases have a very heavy skin, often one-half inch in thickness, and are very large. A number of fruits in the local market were weighed, and averaged nearly six pounds. The flavor is excellent and quite distinct from that of the California or Japanese varieties. In serving, the skin is first removed and then the tough membrane surrounding each section is taken off, after which portions of the sections may be easily removed without breaking the cells.

A considerable proportion of the fruit produced is sold in the local

market, the value ordinarily being from six to eight cents each. The fruits are divided and sold in sections rather than as a whole. Large quantities are also exported to various ports on the China coast, usually being transported in bulk by sailing vessels. Often it is necessary to carry the fruit long distances overland, and this is done by native carriers, or coolies, each of whom carries two large baskets on the ends of a pole slung over the shoulder. A single coolie will often carry a load of 200 pounds in this way 20 or 30 miles per day.

### Cultural Methods

The cultural methods employed in China depend largely upon the section in which the trees are grown. In the Foochow district oranges are produced almost exclusively upon the level areas among, or adjacent to, the rice paddies. Inasmuch as these are constantly flooded it is necessary to adopt some means of drawing off the surplus water from the surface soil. As a grove usually comprises only about 75 to 100 trees, this is accomplished by making a large excavation in the center of the grove, this usually measuring nearly 100 feet in width and about ten feet in depth. The water which accumulates in this reservoir is pumped out from time to time into the adjoining rice paddies. In addition to the above means of eliminating surplus water, the trees when first set out are planted upon mounds about two feet in height. As the trees become older these mounds are increased in size, so that when mature the trees are upon mounds five or six feet high. It can not be said, however, that this practice is satisfactory, as the groves observed were invariably in very poor physical condition and of low producing power. Naturally the quality of the fruit was very poor.

The pomelo is largely grown in the river section above Amoy and Swatow, and the methods of culture employed are quite different from those used in the orange producing sections farther north. The level lands adjacent to the rivers are devoted almost exclusively to the production of this and other fruits. In these groves clean culture is invariably practiced. The trees were found to be large, heavy bearing and in excellent physical condition, and many of these groves would compare favorably with any found in California.

### Pest Control

The insect pests of citrus are not nearly so numerous or destructive as in Japan and it is very seldom that an infestation becomes bad enough to cause injury. One exception to this, however, is a large Cerambycid borer, which does very extensive injury in all sections. The larvae bore into the trunk and larger branches and often girdle the tree, eventually killing it. Control, when undertaken, is by cutting out the larvae with a knife or chisel.

## The Fig and Its Culture

Chas. F. Collins, Horticultural Commissioner of Tulare County, Gives Method of Growing and Cultivation.



**D**O YOU know a child that does not like figs? Did you ever notice that the appetite for this delicious fruit usually remains and often grows stronger with the age of the individual. Why should this not be the case when we consider that this is one of

the most nutritious, palatable and healthful foods known?

While it enjoys the distinction of being the first fruit mentioned in sacred history, it seems reasonable to suppose that the fig tree at that time must have possessed different characteristics from those of the present



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SAN DIMAS, CALIFORNIA

The first general farm center meeting at Pomona, Los Angeles County, will be held March 22. Adviser Coit will attend.

date or the leaves would have made decidedly uncomfortable underclothing for our ancestors.

While there are over 200 varieties of cultivated figs, but four are of commercial importance in this state, namely; the Smyrna, Adriatic, Kadota and Mission.

Many people wonder how the fig produces fruit without flowers, as there is no outward appearance of bloom. The fact is, there are hundreds of flowers inside of each fig. The Smyrna fig, if not fertilized by pollen from the wild fig, will not mature, but dry up and drop before half grown. This can be accomplished only through the agency of a minute fly, known as the fig wasp or blastophaga grossorum, which lives over winter in the larval form in the Capri or wild fig, which, by a wise provision of nature hangs on the tree all winter in a partly developed state. With the advent of spring the figs and tiny wasps mature and in early June begin emerging from their winter home covered with pollen with which to fertilize the Smyrna figs. A single wild fig sometimes contains several hundred of these wasps.

The Smyrna figs are receptive at the time the blastophaga matures and are fertilized as follows; the Capri figs when mature are picked and hung in the Smyrna trees from ten to 50 in each tree, according to size of trees, when the wasps emerge and enter the Smyrna figs, carrying the fertilizing pollen. About one Capri tree is required for every 25 Smyrna trees. Certain figs of the Adriatic type mature their fruit in an imperfect manner, the seeds being barren.

At the present time, the Adriatic is far the most extensively grown in this state, but since its introduction the Smyrna is fast gaining ground and promises in time to outrival all other varieties as a dried product while the Kadota seems to possess many admirable qualities for green shipment, among which are a tough skin, a self-sealing aperture preventing the entrance of insects and freedom from souring or splitting so common with most figs during the latter part of the season.

Although the character of the soil and moisture conditions are factors to be considered in fig growing in the San Joaquin Valley the real secret of success in this as in any other business lies in the individual himself.

Owing to the fact that the United States imports twice as many figs as she produces and the area of production is limited by climatic conditions to certain portions of the interior valleys of California and small areas in Arizona and New Mexico and considering the value of this fruit as a food, its popularity as a confection and its remarkable keeping qualities when dried, it would seem natural to predict that the bugbear of over-production which so frequently prowls in the vicinity of many other branches of the fruit industry, will never molest the grower of figs.

As to the most profitable variety to plant, each has its advocates and at present all are profitable. The Adriatic will no doubt stand most neglect while the Smyrna is preeminent in flavor and sugar content. The Mission, though still a favorite with many for home use is gradually losing favor as a commercial variety because of its lack of saccharin matter and low market value, the trade seeming to prefer a white fig.

The fig tree will endure about the same degree of cold as the olive or a minimum of about 14 degrees for ma-

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ture trees, if not long continued. It is less exacting in its soil requirements than in climatic and will thrive upon a wider range of soils



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than any other fruit tree though the size and quality of the fruit is considerably affected by the character of the land upon which it is grown. It is generally conceded that the best Smyrnas are grown on the heavier types of soil. Less water is required by the fig than other fruit trees and an over supply or irregular irrigation will cause splitting and souring in most varieties.

The fig is propagated very readily from cuttings which should be made from stocky, short-jointed shoots of well matured wood of the previous season's growth and about eight to ten inches in length and should be

planted with but one bud above ground. With good care they will be ready to transplant the following year though many prefer two years in the nursery. In transplanting, great care should be taken in protecting the roots from exposure to the sun, as they dry out more quickly than most fruit trees and the young trees should be protected from sunburn during the first summer in the orchard.

The distance for planting should be gauged by the nature of the tree. Probably a distance of 35 feet each way is sufficient for the Smyrna while the Adriatic should not be closer than 40 feet and the Mission needs still more room.

Interplanting with some trees of smaller growth to be uprooted when large enough to crowd may be practiced, or still better, intercropping with annual crops, which, if water supply is ample and followed by good cultivation will not result in any injury to the growing trees.

The most interesting fig tree it has ever been my good fortune to see is on the General Bidwell ranch adjoining the city of Chico. It is a black fig planted in 1856 and measures 11 feet in circumference, one foot above the ground. The ends of the drooping branches have taken root in a circle around it, forming an enclosure 150 feet in diameter. It bears regularly and produces a crop in proportion to the size of the tree.

Generally speaking up to the present time the fig tree has not suffered from insect pests or diseases. Some trouble has been experienced with nematodes in sandy soil and gophers are known to be born with, or acquire very early in life, an abnormal appetite for its roots. It is highly resistant to crown gall and oak fungus, which cause such serious losses in many of our deciduous orchards.

But little pruning is required and this should consist almost entirely in removing whole branches where they are too thick.

Young trees must not be kept growing too late in the season but moisture should be withheld and the wood allowed to mature, otherwise the early winter frosts will injure them severely. This is a very important

consideration in the growing of figs.

Only the future itself will reveal what the future will bring forth and those in the best position to judge may be wrong as to what the future generation will require in the horticultural line, but it has been the opinion of the writer for several years past, that all things considered, there is no brighter future for any fruit in this state than the fig. It is a most delicious and valuable food, fresh, dried, canned, preserved, pickled, converted into innumerable sorts of confections and the demand for good fig products is growing rapidly in all parts of the world. The demand for any fruit will fix a fair price for it to the grower. If it does not, it is up to the grower to see that it does and experience has taught him how to bring this about.

No fruit grown is so easy to harvest and prepare for market. There is a very limited territory suitable for its production and the supply does not equal one-third of the present demand. With organization of the growers, standardization of the product, proper advertising and plenty of figs, the demand could be enormously increased, greatly to the advantage of both the producer and consumer.

### THE FITTING OF BEAN LAND

Continued from Page 323

is generally distributed in all of the bean districts and is of ever increasing importance to the industry. Since the moisture supply of these lands is controlled at will the management is very simple and, other things being equal, the probability of failure is least. Such land should be plowed as far in advance as possible of planting, six to eight weeks being none too long an interval. If flood water is available, winter irrigation is desirable, but where pumping is practiced a more economical use of the water may be made by irrigating later in the spring. When necessary to irrigate, before plowing the land may either be checked or furrowed for the reception of the water. Checking is preferred on irregular contours and heavy soils, while furrowing is more satisfactory on lighter, level lands. Irrigation after planting must be done between the rows, and the land must be level enough to control the water in furrows. Flooding, as as practiced in beet culture, would result in scalding and prove fatal to most bean varieties. There is no particular stage of plant development at which water should be applied, but it should be the aim rather to keep the soil continuously moist about the roots of the plants until a good set of pods has been secured. On soils of medium texture, one three-inch irrigation before and two after planting will suffice. After each application the land should be cultivated and hand hoed to prevent the crusting of the soil about the crowns and roots of the plants.

### CIVIL SERVICE EXAMINATIONS

California State Civil Service Commission announces examination for positions in state employ to take place at Sacramento, San Francisco and Los Angeles, during 1918. Three positions of agricultural interest may be open and applications for privilege of taking the examination should be filed prior to April 1 and October 1. The examinations will be for dairyman, monthly rate of pay being \$40 to \$125; landscape gardener, head and assistant, \$60 to \$90; poultryman, head and assistant, \$40 to \$75. Application blanks may be secured from Room 331, Forum Building, Sacramento; Room 10, Ferry Building, San Francisco; Room 1007, Hall of Records, Los Angeles.

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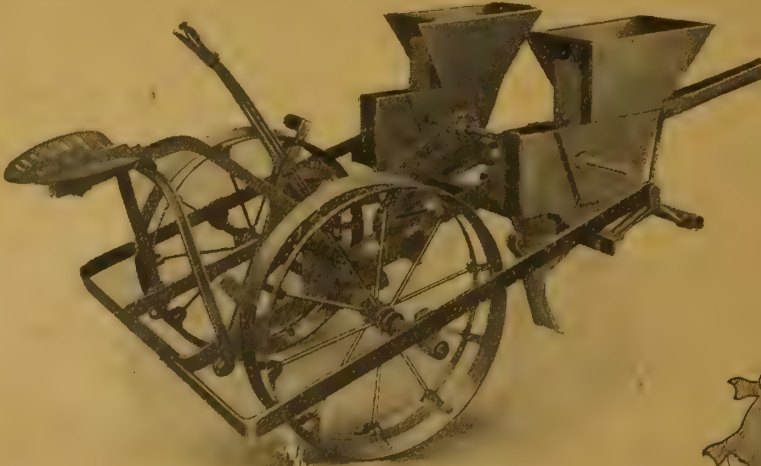
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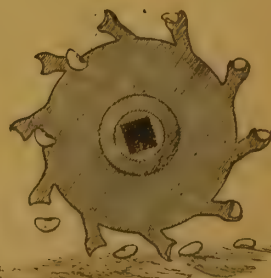
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## AVOCADOS IN GUATEMALA

Fruit growers of Southern California gathered at Riverside on Friday, March 8, and listened to address by Wilson Popenoe, explorer for the United States department of agriculture, who has spent nearly a year and a half in Guatemala investigating as to methods of growing and handling this fruit. The lecture followed a banquet tendered Mr. Popenoe. A. D. Shamel acted as toastmaster and introduced the speaker as a man who had eaten 5000 avocados in 16 months time. Regarding this announcement the Riverside Press says:

"The announcement was a startling one to the audience, accustomed to think of avocados in terms of \$1.00 per." All this happened in Guatemala, however, and there the price is from 25 to 35 cents per hundred. Mr. Popenoe did not deny the avocado story, but modified it to the extent of saying that in many cases he simply sampled the fruit. He showed some pictures of avocados as big as melons, and the thought of a man getting away with ten of these in a day was pretty startling."

Members of the Avocado Association held a business session at Riverside, and it was decided to hold the annual convention in Los Angeles, May 15 and 16.

## ETERNAL VIGILANCE

Commissioner Hecke is appealing to the various county commissioners to use the utmost diligence in intercepting any contraband shipments of plants or fruits into California from sections infested with citrus canker or any similar deadly disease. He reports that Commissioner Lamiman of Shasta County has learned of an unintentional violation of the law which might have meant much to California fruit growing interests. Mr. Lamiman writes:

"Today I took a parcel post package which had been delivered at the Redding post office, containing six Florida grapefruit. An accident was all that made the development as the lady who had received them was proudly showing them to us in the office. On making inquiry I found they had been sent through the mail from Florida, and there was no marking on the package to designate what was in the package. It seems to me there is a loophole there whereby the citrus canker might be introduced into California. This might have happened in a citrus section as well as with us here. The fruits were readily given up when a few minutes' explanation of the dread disease was given."

## THE MANUAL OF CULTIVATED PLANTS

Liberty H. Bailey is always producing some book which gives to farmers quick information. He is editor of "The Cyclopaedia of American Agriculture," "The Standard Cyclopaedia of Horticulture," and almost numberless other helpful books. It is not yet officially announced, but we are told that a book now under contemplation is "The Manual of Cultivated Plants." This manual will be a list of useful plants now contained in "The Standard Cyclopaedia of Horticulture," but it will not contain reference to some 17,000 or 18,000 other plants which are of interest to botanists.

For example, of the hickories, only the pecan should go in. Others may be transferred to grounds or possibly grown as a timber tree, but are not classed as cultivated plants. By this means the 20,000 species described in the cyclopaedia will be reduced to less than 3000. No announcement is yet made as to when this manual will be published.

## NATIONAL QUARANTINE

The country has finally waked up, and Senate Bill 3344 to prohibit the importation of nursery stock into the United States in order to prevent the introduction of insect pests and plant diseases is a step in the right direction. The bill provides that it shall be unlawful for any person to import or offer for entry into the United States any nursery stock: provided, however, that the secretary of agriculture may import, grow, and propa-

gate such nursery stock for experimental and scientific purposes, which, after holding in quarantine a length of time sufficient to establish its freedom from insect pests and plant diseases, he may distribute upon such conditions and under such regulations as he may devise. Also that the secretary of agriculture shall provide for the inspection, fumigation, detention and propagation of all plant materials imported by him and shall devise such rules and regulations as may be necessary for carrying out the purposes of this act.

## DEFOLIATE CITRUS TREES

Commissioner Collins of Tulare is requiring this year as usual the defoliation and dipping in rosin wash of all citrus stock before entering Tulare County. He states that he believes this to be the most practical method of protecting the citrus growers, for past experience has shown that it is not practical to inspect citrus stock in foliage.

A large acreage of rice will be planted in the Oakdale section.



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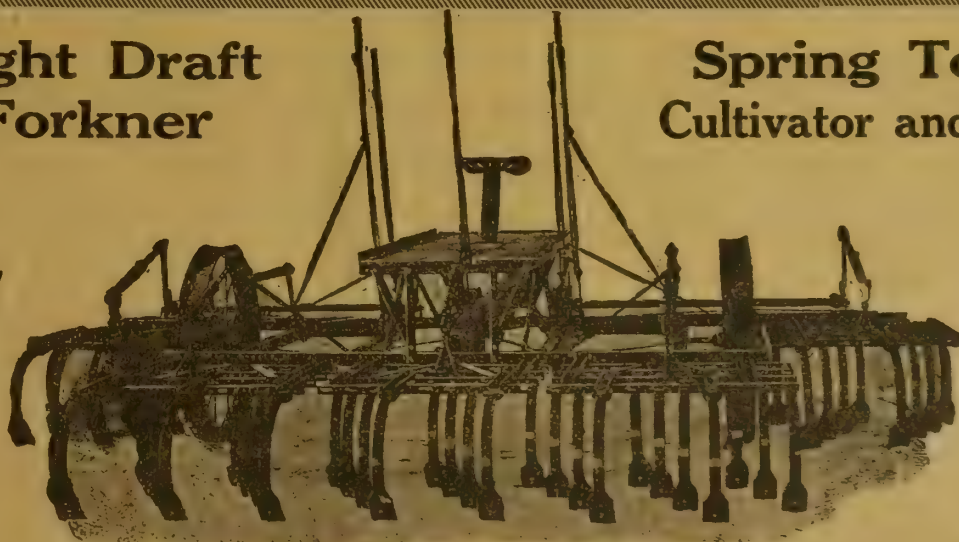
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This system consists of following the mower closely with a Dain System Rake, handling the hay while the leaves are still active and placing it on clean, dried-out stubble. The hay is delivered in medium sized windrows with the bulk of the leaves on the inside and the majority of stems on the outside.

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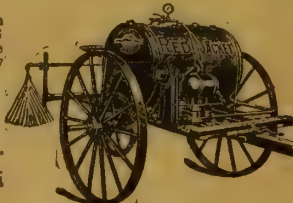
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## Tractors on Small Farms

Written for California Cultivator By W. H. Helleman, Farm Adviser  
Glenn County



IN MEETING the general war situation as it concerns production, perhaps the Glenn County farmer is getting as good results and has worked out as practical lines of effort as may be found generally. Especially in matters relating to land preparation and the cultivation of maximum acreage per farmer there have been practical plans worked out which are worthy of mention.

The farm adviser of the county, as a member of the county committee on resources of food supply, has endeavored to make general labor and production surveys, and has given attention to the tractor equipment, the distribution of tractor power in the county, and the encouragement of custom work by men with tractors not kept fully busy on their own holdings. Naturally much of the investigation made has received the cooperation of the farm bureau organization of the county, and it is through this organization that satisfactory results have been obtained.

In passing it is worthy of note however, that the activity of the farmer is not limited by the mere program of the farm bureau organization as a whole, but the habit of cooperation has led to individual action by the farmer, or the group of farmers, for getting results.

Tractor farming has recently received much attention. In 1916 there were perhaps 80 tractors in the county and in 1917 the number increased to about 130. Tractor equipment, it may be noted, did not develop alone among the large grain and rice holdings of the county, but has steadily increased among the smaller land owners. The survey of the tractor equipment of the county and the inquiry regarding custom work with tractors has apparently encouraged the acquirement of these tools to be used very largely by owners for outside work. It has become a common practice for the larger and smaller outfits to do work for the outside neighbor who, to the present, has turned his land with horses and mulepower.

A recent visit to the Jacinto and Bayliss districts of the county was a revelation. Tractor gang plows were at work in every direction. Over a distance of about six square miles one could not get beyond the machine gun patter of the small and large exhaust, while the ammunition for the disturbance was scattered over the landscape in cast iron rimmed barrels.

The district in question is one of small farms. Seldom is the holding for the individual more than 40 acres, and the fields are relatively small, and yet, in an entire half day's traveling and visiting with an auto, only two farmers were found in their fields with plows drawn by horses, the remainder of the work being done with tractors.

The general common remark made by the farmer was; "Sure, it's the system, and I wish we had more of them around. These tractors do a good job. They do it rapidly and we can get on and finish our winter and spring plowing."

A visit made to a large Yuba just being limbered up for a life of activity led the owner to remark; "Yes, I got three. The boys are out with them. The bigger, the better." Another visit to a 25 acre field where a new Jumbo Best was whopping things around permitted the owner to say they owned four tractors and had more work than they could do.

The going charge for custom plowing with engines is \$2.50 per acre. The farmer engages his work done and awaits his turn.

The 25 acre field which requires 12 long days of team labor to plow is, under the new system, turned under in a few hours. The tractor man pulls out and goes to the next job without so much as stopping to talk over even the local news with the farmer or his pleasant faced wife.

It is the system. It is an innovation. It is winning the fight for democracy. With the land preparation out of the way, the farmer swings in with his harrows and seeders. He completes the job. He works down the rough land preparatory for a later crop of grain sorghum. He farms more acres lone handed. He works less hard to get equal results. His time is worth more these days than the cost of tractor plowing entails.

If all the tractor owners in every county in the state would skirmish about and aid the smaller land owner who does not own such equipment, production in the state would double. If the idle time of the tractors owned by large operators who think they must have a section of land to turn around upon were drafted into service, the resulting harvest would be bountiful indeed. Idle lands and idle tractors are pretty much due to selfishness and a lack of the realization of patriotic duty.

## Home Made Sugar

Because of present shortage of sugar and uncertainty of future supply we are all interested in finding out how to supplement the factory made product. The department of agriculture is sending out suggestions to those who have maple trees or access to natural "bush" to make all sugar possible this spring; also suggesting planting of sweet sorghums wherever possible as an early October frost reduced the supply of sugar cane for seed cuttings in the South.

But what is of more interest to us here in California is the suggestion that all who can plant a row of sugar beets in the vegetable garden and make syrup. Directions for a simple method of making syrup from sugar beets were given in the Cultivator of June 2, 1917, and so many inquiries

have been received for copies of this number that we are repeating directions here:

Sugar beet syrup may be made by a very simple process, and a few rows in the garden will produce beets enough to give a family all the syrup needed. A bushel of beets will produce from three to five quarts of syrup. As the beets when mature should weigh from one to two pounds each 30 or 40 of them will make a bushel, and as the beets after thinning stand about ten inches apart in rows about 20 inches apart it is easy to determine how much ground to use for sugar beets if a particular quantity of syrup is desired. A few rows in the garden generally will be sufficient.

The beets should be topped by cut-



ting off the crowns at the point of the lowest leaf scar, as the crown contains much of the salts taken up during growth. In making syrup the topped beets are cleaned by soaking a few minutes, then scrubbing with a coarse, stiff brush. The next step is to cut them into slices as thin as one-sixteenth of an inch if possible. A butcher knife may be used, but a kraut cutter or some other slicing device is easier.

The sliced beets are placed in a tight barrel and just enough hot water to cover them—boiling water if possible—is poured in at once. The barrel is then covered with several thicknesses of canvas to hold the heat. The sliced beets are allowed to soak for about 60 minutes. The barrel is agitated from time to time without being uncovered. This process brings out the sugar from the beets. The liquid is then drawn off, strained through several thicknesses of cheesecloth, and placed in a kettle or other vessel, in which it is boiled slowly until it has evaporated down to the thickness desired. It is important that the boiling be slow and the process will take several hours. The work may be done out doors if desired. Care should be taken not to scorch the syrup. The scum which rises to the surface of the liquid is skimmed off, to remove the strong, beetlike flavor.

The syrup is bottled or canned while hot and sealed to prevent molding. It is dark in color, but has a pleasant flavor.

It is also suggested that cull apples be turned into apple syrup.

For a bulletin telling how to make sugars at home, write Office of Sugar Investigations, United States Department Agriculture, Washington, D. C.

INSURING AN EVEN STAND OF POTATOES

Written for California Cultivator  
By Edward C. Hawley

I have now been growing potatoes, two crops a year, for about four years, on a small farm and I have learned one very important thing, that it is necessary to have an even stand of growing vines so that the entire crop shall mature at the same time. A patch of potatoes, some of which begin to mature weeks in advance of others, is an exceedingly expensive crop to harvest; it has to be gone over several times in digging and is so slow that loss is almost certain. Where there is an even stand the crop can be dug in about one-fourth the time.

Experience has taught me that it means just the difference between profit and loss to do the following things preparatory to planting potatoes:

(a) After dipping potatoes give them sufficient time to fully recuperate and become well sprouted before planting. I dip with a solution of corrosive sublimate, two ounces to 15 gallons water, dissolving the chemical in a gallon of boiling water first, and adding to the 14 gallons which should be contained in a wooden receptacle. I have found that quite badly infected potatoes will grow clean tubers if dipped and planted in clean land. It is convenient in dipping to have each sackful of potatoes put in two sacks, tying near top of sacks, thus they are light enough to lift in and out of the barrel, and the sacks being half full and tied at the ends, the potatoes will spread out in the barrel better so that you can easily make the solution cover. Leave in the solution for an hour and a half. Corrosive sublimate weak-

ens the eyes of potatoes so much that you are almost sure to have a very uneven growth if you plant immediately or soon after dipping. I have found that it pays to dip two or three weeks before planting, laying potatoes on the ground about two deep and covering with straw or dry weeds as soon as dry after dip. This starts sprouting; a little water sprinkled over the straw occasionally will help, unless the nights are very cold.

(b) When cutting potatoes sort the more advanced sprouted eyes from the more backward ones and plant each in a patch by themselves. You will get potatoes from one to three weeks earlier from the more sprouted ones than from the others and both patches will make an even growth.

Much has been said lately of planting whole potatoes. I have only planted one crop so am not prepared to criticize except to say that this

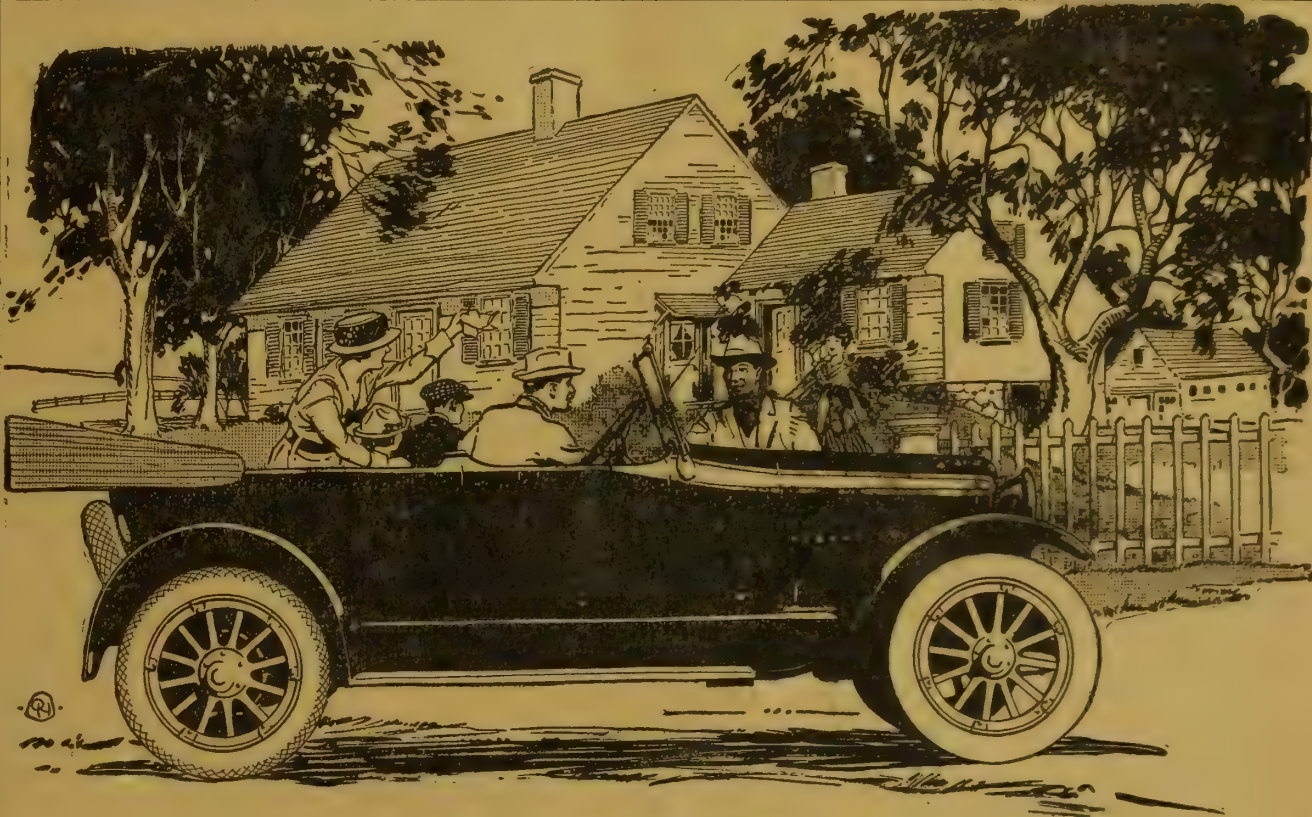
crop was much slower maturing and developed much more unevenly than the cut ones, and I did not get any bigger yield.

SPROUTING GIVES EARLIER POTATOES

To speed up the spring potato crop, home gardeners may sprout the seed tubers before planting. This results in quick growth after planting, produces an earlier crop and also a higher yield than is obtained when ordinary dormant seed are planted. The process of sprouting a small quantity of seed tubers is explained by J. T. Rosa, Jr., of the University of Missouri College of Agriculture. The seed should be obtained two or three weeks before planting time. Only sound healthy tubers should be used, but the size makes no difference. These tubers should be spread out in a single layer on the floor of a light

room or on the bottom of a hotbed where they can receive full light. Often a flat or shallow box can be placed in a living room window where a peck or two of seed can be sprouted. Under the influence of the warmth and light the tubers start to grow, turning a dull green and sending out stubby sprouts from the eyes. If the room is too warm or poorly lighted, these sprouts become long and slender. Such sprouts are likely to be broken off in planting, and for this reason are not so desirable as short stubby sprouts.

The seed should be planted when the sprouts are about one-half inch long. Cut the tubers in the usual way, with one sprout on each piece. These should be planted by hand, with the sprout pointed upward. Plants from sprouted seed reach the surface ten days earlier than from dormant seed and grow off rapidly. A better stand is generally secured from sprouted seed, and more tubers are formed on each plant.



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Livestock and Dairy Journal, Established  
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mation regarding varieties, location,  
planting and will be followed another  
week with more particulars as to  
planting-to-harvesting practices. The  
illustration on the cover shows one  
phase of California's bean industry  
up in Lima land.

### INCOME TAX

Those of us who were slow in  
making income tax return have been  
given extension of time till March 31,  
nearly two weeks away—but a hint to  
the wise. That's all.

### THE SUN IS SHINING

The sun is shining, but didn't  
it rain gloriously? Some sections of  
California received around six inches  
for this one storm and seasonal pre-  
cipitation has been brought up to  
normal in nearly all sections of the  
state. The ground is filled and  
streams are running bank full. The  
greater portions of the Sacramento  
and San Joaquin Valleys received  
close to two inches; Santa Clara Val-  
ley, two and a half; northern Coast  
counties, around two and a half; San  
Luis Obispo County, nearly three in-  
ches; Los Angeles County shows var-  
iation of from two inches at the har-  
bor to nearly six inches near the foot-

hills; other Southern California  
points, between one and four inches—  
this of course, excepting Imperial  
Valley and other desert sections,  
which received only a trace.

Coming at this period of the season  
every drop will be conserved, and  
California is assured a great produc-  
ing year.

### LIBERTY LOAN

The third liberty loan will soon  
be offered to the people. In fact, at  
present the preliminary step, the pur-  
chase of treasury certificates, is un-  
der way. As these certificates are  
drawing four and a half per cent  
many are guessing that the new bond  
offer may carry the same rate, but  
whatever it carries a loyal people will  
rise as one man and take up the en-  
tire offer. Meantime, buy W. S. S.

### SAVING LABOR

The urge of patriotism has  
been worked upon all of us who are  
farming until we are crying for rest,  
and meantime doing our best in pro-

power churn, washers, and number-  
less other modern appliances which  
are saving steps and backaches. Even  
the steps of the old horse are saved  
and gas takes the family to church  
while the horse rests for more vigor-  
ous work on Monday. The milking  
machine has perhaps had the hardest  
fight of any of these appliances. It is  
making good. Our news items have  
often chronicled the fact that large  
dairies are installing these great la-  
bor savers more and more.

### TOO MANY COOKS

"This year moulting hens were  
late in commencing to lay, nearly Feb-  
ruary, whereas before, early in Jan-  
uary feed jumped from \$3.25 to \$3.60  
to \$3.75 for milo, just as hens got  
busy. Last Friday eggs dropped ten  
cents per dozen! Now the govern-  
ment says; "Keep your hens whether  
they lay or not." We have always  
culled non-layers out in April, May  
and June in order to get better stock,  
and now we must keep these board-  
ers and cut down the supply of feed.  
"This is a swat from three sides;  
feed man, egg merchant and Uncle  
Sam. Who wants to produce more

### \$300 CASH PRIZES OF CALIFORNIA CULTIVATOR

Cow-Testing Association prizes offered in the California State Dairy  
Cow Competition by California Cultivator for the highest production of  
butterfat for one year by herds belonging to a Cow-Testing Association,  
three prizes of \$100 each for herd of ten to 25 cows, 26 to 50 cows, over  
50 cows.

Humboldt County was the first county in the state to form cow-test-  
ing associations. Greater proof of the worth of those associations could  
hardly be made than in the fact that every California Cultivator prize  
winner is in Humboldt County.

Imperial County, hundreds of miles to the south, with the biggest of  
all cow-testing associations, likewise makes a great showing. Note the  
figures given are for fat while butter produced would be 16 per cent ad-  
ded to figures given.

Owner	No. Cows in Herd	Ave. Production Milk	Butterfat
10 to 25 Cows			
1. J. W. Coppini, Ferndale*	22	8,979.0	510.09
2. Floyd Beebe, Esparto	18	9,470.1	387.56
3. C. Darnell, Brawley	10	10,813.7	362.78
26 to 50 Cows			
1. Iver Iversen, Arcata*	37	10,445.0	498.73
2. G. E. Trigg, Ferndale	35	8,653.8	485.96
3. Aux Ambort, Holtville	29	9,134.7	357.39
Over 50 Cows			
1. W. Terkelsen, Ferndale*	53	8,445.1	420.46
2. Coppini & Coppini, Ferndale	60	7,600.0	379.44
3. John Hansen, Loleta	101	6,635.5	339.63

\*Awarded prizes of check of \$100 each by Cultivator Publishing Company.

duction of the food which the world  
needs to secure the money which we  
all need. We have discussed produc-  
ing more on greater acreage and pro-  
ducing more on the same acreage; al-  
so fertilization, cultivation, irriga-  
tion and conservation, and of especial  
interest has been the discussion of  
labor. We want the Chinaman, the  
Jap, the Hindu, and especially the  
good full blooded American, but the  
solution is not yet excepting on the  
part of a very few who have large  
families or live in a neighborhood  
where labor is well balanced.

We have repeatedly referred to one  
of the greatest aids in the present  
situation being labor saving appli-  
ances, and many a farmer has been  
saved from inconvenience and loss be-  
cause of a determination to save ev-  
ery step possible. It costs money to  
install machinery and improved im-  
plements. It costs more to pay for  
labor, and too often money paid for  
labor is gone forever. Money paid for  
improved machinery is, less reason-  
able wear and tear, still well in-  
vested.

And because of these facts farm-  
ers are buying tractors, plows with  
automatic loaders, hay cutters which  
permit of pneumatic "mowing away,"  
milking machines, and even the  
homes are given a water system,

chicks with this kind of an outlook?  
Is not the government defeating the  
very thing it wants to propagate?  
Can't we have some help our way in  
regard to control favorable to us on  
feed costs and minimum egg prices,  
just a fair deal so we can keep our  
equipment going—to capacity—if pos-  
sible and let us then produce enough  
so the government does not have to  
dictate to us. Make the first two  
items reasonable and no hens or pul-  
lets will go to the killing block."

Unfortunately, about the most we  
can do for the poultryman at this mo-  
ment is to offer condolence. It seems  
to be almost impossible to work out  
exact justice for all, and the govern-  
ment—which means all of us—has  
taken a wonderfully big contract, not  
so much in fighting as in its other en-  
deavor to feed the world. It does  
seem to us, however, that there might  
have been less confusion in this mat-  
ter of feeds. We have today been  
ringing the larger dealers in poultry  
and other feeds as to the present sit-  
uation, and all we can learn is; "All  
quotations on all kinds of feeds are  
absolutely withdrawn." The govern-  
ment will permit of no profiteering,  
and until dealers can learn the mean-  
ing of the later rulings, which are in  
effect that only a certain per cent  
above actual cost may be charged,  
confusion in prices will obtain.

Regarding "swatting" the boarder  
hen, it is possible that for the time  
being literal following of an unwise  
rule may be necessary, but surely it  
is a purely unpatriotic act to keep an  
unpatriotic animal eating its head off  
and eating feed which is needed for  
the real producer. Our correspon-

dent is, however, under a misappre-  
hension as to the duration of the  
present order prohibiting marketing  
of laying hens. It is in effect only un-  
til April 30 which will not interfere  
with his culling program.

### This Week's War News

The American secretary of war,  
Newton D. Baker, with staff, is in  
France.

The Texas legislature has passed  
a law making a ten-mile dry zone  
about all shipyards.

The Italian line remains quiet,  
though there have been several air at-  
tacks by the Teutons, one on Naples.

Airplane raids on both London and  
Paris have occurred during the past  
week, and several non-combatants  
have been killed.

The Texas state legislature appro-  
priated \$10,000,000 as a war measure  
to purchase seed for drouth stricken  
portions of the state.

Two Americans, Mrs. Ford, author  
of "Keep the Home Fires Burning,"  
and her son, were victims of the last  
airplane raid on London.

General Allenby is advancing his  
line in Palestine nearly every day,  
and the Turks in Mesopotamia are re-  
ported in retreat at all points.

Ambassador Francis is reported as  
safe at Vologda. The Russian As-  
sembly still refuses to endorse the  
Bolshevik peace, and the German  
army is still advancing.

The menace of U-boats is still fur-  
ther decreased, and while no an-  
nouncements are being made it is to  
be presumed that the sub chasers and  
torpedo boats are getting in their  
work.

Twenty thousand men in review at  
Camp Kearney was an inspiring sight  
last Saturday. Thousands of people  
from all the Southwest gathered and  
freely praised the troops because of  
their soldierlike bearing.

The second draft has not yet been  
made, but it is announced that it will  
be for about 800,000 troops and the  
call will be made so as to bring the  
new men into the training camps as  
rapidly as they are emptied by troops  
going to France.

Washington is withholding an-  
nouncements of American casualties,  
but it is known that there have been  
many within the past week. Ameri-  
can troops advanced nearly a half  
mile through the German lines in Lor-  
raine. French officers give highest  
praise to American troops because of  
fighting qualities.

The situation in Russia continues  
practically the same "only more so."  
Rumor still persists in connecting  
Japan and China with the Siberian  
situation and with the claim that  
President Wilson still withholds his  
approval of an advance from the east,  
but Japan is mobilizing and China has  
made appropriation to equip an army  
to advance from the south, but this  
with the approval of Russians friend-  
ly to the Allies, who are in Siberia.

On the western front artillery ac-  
tion has increased in fury, and Bel-  
gians and English on the northern  
end of the line, and Americans and  
French on the southern end have  
made material advances. The larger  
and general drive is yet in anticipa-  
tion. American airships are arriving,  
and it is reported that great damage  
has been caused by successful bomb-  
ing expeditions which have destroyed  
much of enemy munitions in depots  
and railway centers near Valenciennes  
and Cambrai.



# Agricultural News Notes of the Pacific Coast

## Northern California

The big dam at Paradise, Butte County is now completed.

Placer County grain acreage has been increased by over 3000.

Eldorado County has planted over 15,000 deciduous trees this season.

Butte County farm bureau has nine farm centers with a total membership of 500.

A new industry has been started at San Francisco. It is the manufacture of fish sausage.

Farm Management Demonstrator Nathan is in Napa County aiding Farm Adviser Baade.

Legality of Reclamation District No. 833 comprising 40,000 acres near Gridley, is to be tested in the courts.

Farm Adviser Geo. E. Merrill of Sonoma County, recently made address before the farm center at Cloverdale.

One of the largest dairies in the state, with 325 cows, has been located at Brentwood, Contra Costa County.

Madeline Plains irrigation district has been formed in Lassen County. The county hopes to secure a sugar factory.

Grain farmers of Glenn and Colusa Counties hope to effect a saving of thousands of dollars by bulk grain shipments.

Joseph Painter of Denver is in San Francisco conferring with livestock men as to great annual San Francisco livestock show.

Sonoma County's board of supervisors have passed an ordinance granting a bounty of \$20 on coyote scalps and \$2.50 on wild cats.

All creameries of the Ferndale, Humboldt County section, touched high water mark in prices for January. The average was 57 cents.

Butte County finds plenty of lime rock within her own borders and it is urged that they should be used where needed in correcting soil conditions.

Prospective settlers are visiting the lands of the new state land colony in Butte County. Application for these lands are already far in excess of possibilities of delivery.

The Cow-Head Lake irrigation district in northwestern Modoc County has been formed, and it is planned to reclaim thousands of acres which have heretofore given uncertain dry farming crops.

## Central California

Eight cents is the present price on California pink beans.

A rally of the Grange Patrons of Husbandry was recently held at San Jose.

United States army officers were in Porterville buying cavalry horses and wheel mules the first of March.

Emperors and a few Almerias, shipped in Redwood sawdust in drums last fall have made very satisfactory returns.

Madera County livestock men are buying Nevada hay at \$27.50 per ton. Local hay cannot be had for less than \$30, or \$35.

An all day session of the Santa Clara County, Pomona Grange, will be held this week Saturday in connection with Lincoln Grange.

The rulings of the state game commission have been modified so as to permit the killing of wild geese in grain fields about Tulare Lake.

Fruit growers of Santa Clara Valley are working out plans for enlisting 700 high school boys from Oakland in next season's harvesting.

Tulare County will pick its Valencias much earlier than any preceding year. It is thought by the end of March it will stand up under the 8-1 test.

Prospective cotton growers of the San Joaquin Valley are almost a unit in that the valley should grow almost exclusively of improved Egyptian types.

The Central Valley is testing more and more every year the high qualities of the Almeria grape. The time is coming when it will be a big factor in the markets.

President Fontana of the California Wine Association is reported to have recommended manufacturers of wine "to sell stocks and prepare for the end of the industry."

Madera County has a "rabbit association." The rabbit industry is to be encouraged by a drive which it is hoped will end in the slaughter of thousands of cotton tails and jacks.

The Dinuba Grape Growers Association insists that "Dinuba" and "Emperors" are becoming inseparable and mean the same. Lodi long since became "Tokay Town;" Fresno, "Raisin Town;" San Jose "The Prune Center;" and there is no reason why Dinuba should not make a record which will make permanent the name of "Emperor."

## Southern California

Riverside County fair dates are October 1-5.

Orange growers are planning for intercrop of beans.

Ventura County fair dates are September 30-October 5.

A \$70,000 canning plant is to be erected at San Fernando.

Not an idle plow in Southern California since the recent rains.

Dr. I. G. Macbeth recently made an address before farm center of La Habra, Los Angeles County.

Redlands, San Bernardino County, will increase its production of potatoes by at least 50 per cent.

Turnips, tops and all are being used by farmers in Ventura County as a temporary feed for livestock.

Many of the mountain summer resorts of Southern California are now under six to ten inches of snow.

The first car of spinach shipped out of Coachella Valley netted \$4.65 per crate or about 12½ cents per pound.

One day's shipments of fat cattle, sheep and hogs from Imperial Valley to Los Angeles, aggregated 60 cars.

Raisin producers of El Cajon, San Diego County are uniting with the California Associated Raisin Company.

Imperial Valley is now shipping out large quantities of peas, prices ranging around nine and nine and one-half cents.

Several Southern California farm bureau men will attend meeting of farm bureau workers at Berkeley, March 11.

Livestock men of Venutra County have been "singeing" and feeding cactus to tide livestock over period until new feed is ready.

Lemon growers of the Sweetwater Valley, San Diego County report their trees as loaded with immense crop ready for the spring cutting.

The Antelope Valley Farm Loan Association, recently elected directors and made the compensation of the secretary-treasurer one-half of one per cent of the loans made.

Melon shippers of the Imperial Valley have word directly from Washington that cantaloupes will not be classed with non-essentials and that shipping will be expedited as much as possible.

## The Coast and General

Clatskanie, Oregon, has a sour krout cannery.

Arizona cattlemen are appealing for more cow punchers.

A cooperative creamery is to be built at Fort Rock, Oregon.

Utah reports high priced labor and feed as greatly reducing dairy stock.

Planters in the Dominican Republic are planting extensively to castor beans.

The state of Arizona has nearly a million range cattle but only 73,000 dairy cows.

Hoover gives assurance that there will be abundance of sugar produced another 3 ar.

Astoria and Portland were the distributing points for nitrate of soda in the northwest.

The watersheds on some of the Hawaiian Islands are being planted to koa and mahogany trees.

The seventh annual convention of the Arizona Cattle Growers' Association was recently held at Nogales.

A two acre experimental planting of the true mahogany tree is being made in the Makiki Valley, Hawaii., Islands.

Idaho claims to have produced enough sugar in her factories in 1917 to supply sugar to 1,260,000 soldiers for one year.

Hawaiian Islanders are appealed to to make island beans, sweet potatoes and bananas their principal diet in order to conserve food for Europe.

Plant Inspector Ehrhorn of the Commission of Agriculture, Honolulu, reports inspection of about 1,000 lots or 20,000 parcels of plants and seeds monthly.

Arizona is enjoying burro beef. We have heard of drinks with "kick" to them, but burro beef was declared to have none. It was tender, juicy and excellent."

The Eugene, Oregon, Fruit Growers' Association has closed its dried prune pool with an average of ten cents per pound. It handled nearly a half million pounds.

The Girls' Economy Canning Club of Navajo County, Arizona, developed sufficient ability to can fruits and products and sufficient business initiative that a community business of considerable size may be developed from it.

## 7<sup>th</sup> Semi-Annual Sale

# WESTERN WASHINGTON HOLSTEIN BREEDERS ASSOCIATION

at KENT, April 17<sup>th</sup> 1918

85 Head of the Best in the World

A Son of King of the Pontiacs will be Sold. Send for Catalogue

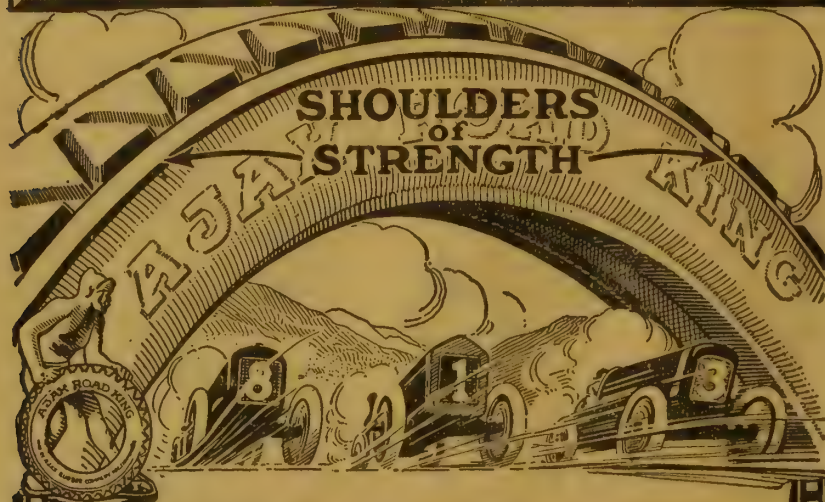
A. B. WINTER, Sec'y

Everett, Wash.



# AJAX TIRES

GUARANTEED IN WRITING 5000 MILES



## Dirt Track Champion of America

Dirt tracks are the same "going" you meet driving to town, to the elevator, the creamery, your neighbors. An Ajax victory on the track is an Ajax victory for you on the road. In 1917 Ajax Tires swept the field in 237 gruelling dirt track contests—winning the title, Dirt Track Champion of America. On performance Ajax Tires are the natural selection—the money-saving tires for the farmer. Ajax Tires have the special patented feature—

### SHOULDERS of STRENGTH

These supports are built into Ajax Tires, giving them "more tread on the road"—more rubber where it should be. These shoulders make Ajax the long lasting, easy riding tire for all roads. "Shoulders of Strength" mean longer wear because road friction does not come in one spot to wear through to the fabric.

### AJAX ROAD KING

"More Tread on the Road"

Ajax Road King proves its superiority on all roads. Guaranteed to uphold Ajax reputation for service. Ajax Road King gives proved surety under wheel. Truly, a monarch in quality, a democrat in service. Note the triangle barb tread—an added safety factor.



### 97% Owners' Choice

Of the total output of Ajax Tires, 97% are singled out by car owners to take the place of other tires that came on their cars. This is an unequalled endorsement of Ajax quality.

Write for booklet on "Ajax Shoulders of Strength." Mailed free.

**AJAX RUBBER COMPANY, Inc., 1796 Broadway, New York**

Factories: Trenton, N. J.

"While Others Are Claiming Quality, We Are Guaranteeing It"

## Income Tax

**N**OW that the department of the interior has extended time for making income tax returns to March 31, there will be no excuse for anyone

running any chance of severe fine because of failure to obey the regulations laid down by congress and the department. Questions continue to come to the Cultivator and we believe their answer will prove of general interest.

One subscriber states that so long as his net income is less than \$2000 and he is married, he will make no return and wishes to know if he is entirely right. This subscriber is entirely correct, but as a word of warning, let us refer to the word "net" in the above query. What "net" income is from the revenue department standpoint and tax payer's own standpoint may be materially different. The law is specific in that taxes, interest paid on money borrowed for investment and a few other items are deductible from our income. There are a thousand and one other items of expense, for instance, anything that pertains to personal or family upkeep may not in any way be deducted. The best way is for a frank statement to be made to the revenue collector, or even to make out the return where there is the slightest question whatever, then correction may be made and at absolutely no cost, and probably it would call for the payment of no income tax, but if the return is not made and then it should be found that the deductions were not proper deductions from the collector's standpoint, a fine which may run into the hundreds of dollars is possible.

A farmer writes, "I held an auction last October. I sold implements and cattle. Must all the return of that sale be reported as income for the year?" No. The implements represented invested capital. If they were sold at a profit, that profit was taxable. As to the livestock, its value presumably has increased each year. Take its value in 1913, and the excess which the stock brought at this sale (less the expense to the year 1917) would be taxable.

Another case, more complicated and one which means that the farmer must pay a fairly good sized income tax is one wherein for years there has been living on the homestead a family consisting of father, mother and three sons. Two of the sons are married. The business has been considered a family affair, the sons having taken hold of the work together dividing the proceeds at the year's end according to the needs and with almost no book-keeping being done. Additional lands have been purchased and severe economy has resulted in building up a business which culminated during the year 1917 with large and profitable sales of products. There is no legal partnership arrangement and this good sized income is considered the prop-

erty of all members of the family. How much deduction may be allowed and how should return for this property be made?"

In this case there should be exemption of \$2000 on the part of each of the two married sons with additional \$200 for each dependent child, and according to the understanding or agreement, the same amount on the part of the two parents, or the one unmarried son might declare himself the head of the family and the parents supported by him. This might provide future means of figuring the deductions, but the worst feature in this case is that expenses covering two or three years preceding were incurred in producing the crops which brought the liberal returns during the year 1917, but these expenses, except those occurring in the 12 months of the year may not be deducted. Unfortunately every year stands absolutely alone. Thus the cash book and expense book or day book answer most of the questions as to income tax fairly clearly; that is beginning with January 1, 1917, every item of income from any source whatsoever must be reported. Then beginning on the same day and ending with the last day of December, 1917, every item of expense may be deducted. Now unfortunately, each year stands alone and it is unfortunate in this particular case, though a period of years will probably right the apparent injustice, and so long as the particular expense for the stock which brought the income is not permitted to be deducted because of its being incurred in a preceding year, then, on the other hand, any expense which may have been incurred in conducting the business for the succeeding year may be deducted. That is, if a person received \$3000 for sale of stock in January, and during the year the expense of the firm for the next year's business amounted to \$1100, this reduces the net income of that business to \$1900 and no report whatever need be made.

Another

"An unmarried daughter living with mother who is dependent upon the daughter's earnings, received \$1200 per year, but according to law, this dependency exempts the daughter's salary or income to the extent of \$2000. We assume no return is necessary on the part of the daughter." This assumption is wrong. If the unmarried daughter has \$1000 income or more, she must make return or be subject to fine. In making return, however, she claims exemption because of the dependency of her mother and it is granted, but the law is very rigid in demanding that this return be made.

"Safety First," hence if there is any question or the margin is so small that the collector may raise a question, then by all means fill out and file return as to your income.

## Farm Implement Shed

By Anton S. Rosing



**T**HE American farmer's all-too-prevalent policy of neglecting his implements is costing him a dollar a week.

It is an item no one can afford to knowingly throw away. Viewed in the aggregate this annual loss is a large amount. In Illinois, for example, there are some 200,000 farms of 50 acres or more. In this state

alone, therefore, there is an annual loss of over \$10,000,000 from this cause. And when state is added to state the result will be an amount which would have a tremendous influence on the present national situation.

This estimated loss of a dollar a week is based on the records of the United States department of agricul-



Model 20

SOLD ON TRIAL

Catalogue Free  
Write For It—

## The Man-Saver

*The Martin*

Ditcher is a man-saver, and a time-saver—therefore a money-saver. Two men, four horses and a Martin will make or clean more ditch in one day than they could plow and shovel out in three weeks—time and man saving are big items now.

### Fine for Terracing, Dykes and Roadwork

Made in 2, 4 and 6 horse sizes; can be used with tractor. Works equally well on side hill or level, or in wet or dry soil. Handles rocks and cuts alfalfa roots without plowing. Cuts or cleans ditches down to 4 feet deep. All Steel, Reversible and Adjustable. Investigate the Martin NOW.

**OWENSBORO DITCHER & GRADER CO., INC.**  
1570 Wazee Street Denver, Colorado

### Perforated Tree Protectors

Why use anything but a PERFORATED PROTECTOR, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small LATH HOUSE ABOUT EACH TREE. Protects from Squirrels—Rabbits—Gophers—Hot Sun—Sand Storms—Barking in Cultivation, etc.

We make a number of kinds. TELL US YOUR PEST, and we will tell you what kind to buy. Get our prices. We can save you money.

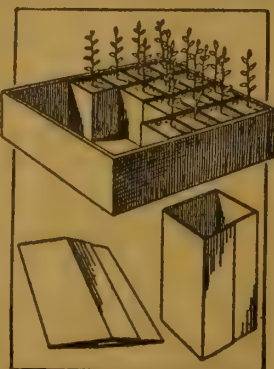
#### COLLAPSIBLE PLANTING POTS

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start

Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

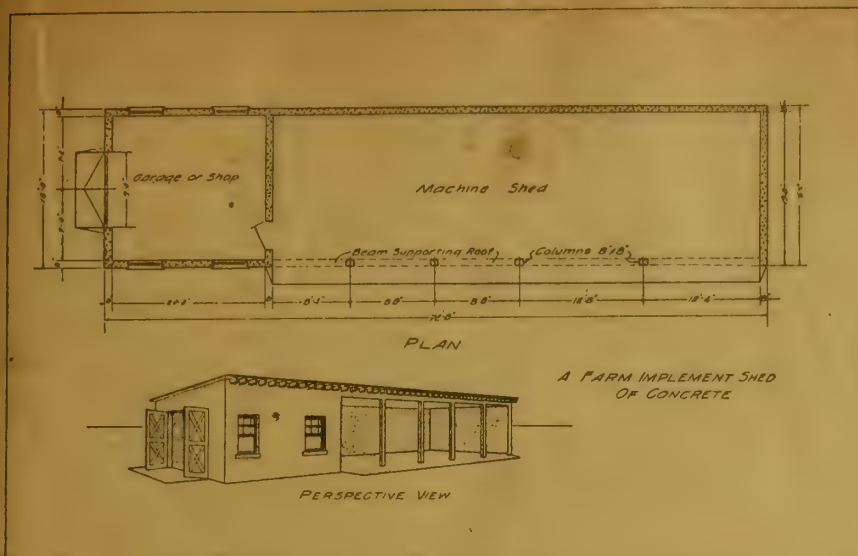
Write for samples and prices of both Pots and Protectors. State which you are interested in.

THE EXPAN CO., 935E. Central Ave., Redlands, Cal.



Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.





ture, implement manufacturers and others. These investigations show that the life of a grain binder, for instance, with the care it now receives on the average farm is less than five years. With proper care this can be increased to 15 years, or a clear gain of over 200 per cent in the useful life of this implement.

An implement shed may be built either as a separate structure or a part of other farm buildings. On smaller farms it may be more convenient to set aside a room in other buildings for the storage of implements during their periods of non-use. Usually when the barn is built it can be so planned that a space in it will be available for this purpose. Where no such provision has been made the farmer will be found to utilize any temporarily unoccupied space for the storage of his newest or most prized implements. The result of this makeshift is that most of the farm equipment has to remain outdoors in fair and stormy weather, and in a short time depreciates greatly in value and working efficiency.

When a separate implement room is built into the barn it should be so planned as to open directly on to the barnyard. Through this ready access will be had to all the fields on the farm. The door should preferably be the full width of the room so the entire floor space can be utilized and make it possible to take out some one implement from the assortment without having to move the entire outfit. A concrete floor raised slightly above the ground and with a suitable approach will provide a firm, dry foundation for the heaviest machine and make a convenient place in which to work on the equipment. Along one side and attached to one of the walls a work bench can be built.

A common type of shed and one suitable under all conditions is the all-enclosed, flat-roof type. This type is rectangular in plan, about 16 feet deep and as long as the amount of equipment may require. The roof may be supported by the walls or by columns. Where columns are used they should be so placed as to leave 12 feet clear between them, to permit easy movement of the widest machines. The space between columns may be walled in from floor to roof so that building is entirely enclosed. Doors should be placed along one end of the long sides of the building and so arranged as to permit of the free movement of machinery into and out of the several bays and the fullest use of the available floor space. Two six-foot sliding doors in each 12-foot bay, hung on an overhead track, will make an ideal arrangement for this purpose. When open they are out of the way and do not interfere with the maneuvering of implements for

positions in the building. The roof should be flat, but with sufficient slope to drain well to the rear or far side of the house. The height of the roof above the floor need not usually exceed eight feet. In the bays reserved for small machinery and where but little head-room is required the unused overhead space may be utilized for the storage of seed corn and of arti-

cles of rare use. The concrete floor should have a slight pitch toward the front, be slightly raised above the ground and have an easy approach from the barnyard.

A concrete implement shed can be built in either of three ways. It may be monolithic, that is, the concrete placed between wood forms erected in place. Or, it may be built of concrete block prepared beforehand, and assembled when a sufficient quantity is at hand. Or again, the concrete may be applied like a plaster on previously erected metal lath securely fastened to posts or columns.

The front of the shed should be facing towards the south or east, or its back toward the direction of the most prevalent storms. If the shed can be placed in a particularly sheltered position then all the walls may be omitted. It then becomes what is called an umbrella shed, consisting only of a concrete floor or platform, and pillars, or posts supporting a roof. The nearness of other buildings, trees and hedges, will serve to give the necessary shelter to the shed. In either case, however, a space in the shed should be partitioned off and entirely enclosed for a workshop and supply room.

The floor and roof should be made of 1:2:3 concrete; that is, one part by volume of portland cement, two parts of clear sand, and three of peb-

bles or broken stone not to exceed one inch in diameter. The columns and walls should be made of 1:2:4 concrete. The floor need not be over four inches thick except where extra heavy machinery is to be stored—a traction engine for example. The roof slab should be about five inches thick, with beams about 12 or 14 inches deep over the columns. The columns should be about 8 by 8 inches in section and should be supported by footings carried below frost line. The roof slab, roof beam, and column should be reinforced with steel rods about three-eighths inches in diameter. All monolithic concrete should be carefully protected against frost or exposure for a week or more until thoroughly hardened before put into use. All concrete block for walls and columns should be made in a shed or room where they can harden without exposure until they are needed.

The cost of a concrete implement shed is not great and it will pay for itself in about three year's time. Thereafter the saving it effects in the implement account by making possible a much longer working life is clear profit. The efficient farmer will not permit this item to escape. The desire for the greatest financial returns and for the most successful farm life, as well the necessity for the conservation of national resources all prompt the earliest and most careful attention to the need for proper care and shelter of the farm equipment.

## Building Service into the "Caterpillar" Tractor

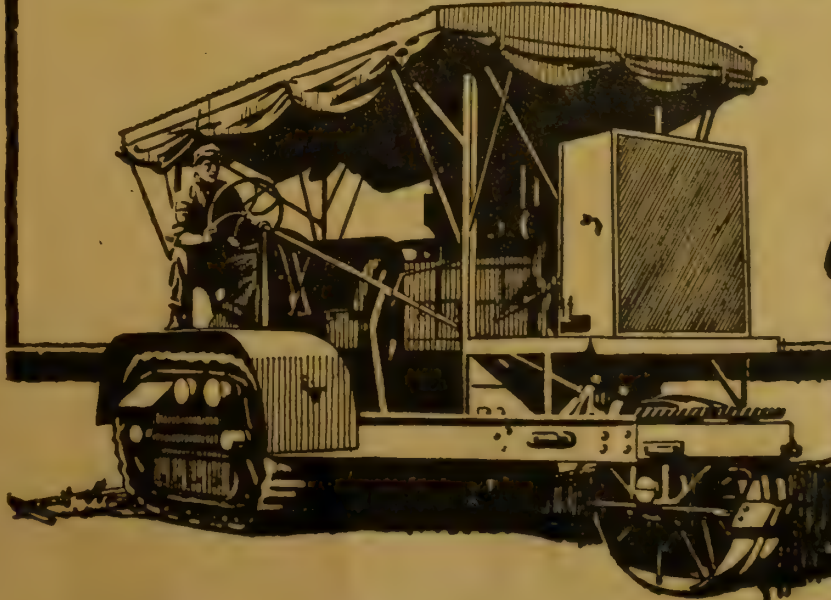
The "Caterpillar" Tractor is built for service—everyday, dependable service, regardless of weather or ground conditions.

That sort of service is insured by correct design, by careful construction, by proper choice of materials—some of manganese bronze, some drop-forged, some case-hardened—each selected for the special work it must do. And into the construction of every "Caterpillar" Tractor goes Holt experience of 35 years in manufacturing.

The results are:—exceptionally low operating and upkeep costs, long life, higher efficiency and bigger profits. "Caterpillar" Tractor owners will testify that the purchase of this tractor is an investment that pays big returns. Send for complete "Caterpillar" Tractor information.

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State Dairy Cow Competition

Finals for Many of the Cows Which Were Great Producers.  
Awards on Pages 330 and 338



HIS is the week of making awards at Davis to dairy-men of California who have competed for the purses and prizes aggregating \$7500.

These dairymen have been in this contest during the past year, or rather,

er, covering an entire period of 16 months. Some of the final figures of production of cows which will be winners were given in the Cultivator of a few weeks ago. Here are the figures of production of cows not formerly given.

No.	Name of cow	Age	Days in milk at start of record	Milk	Butterfat	Total Credit for Butterfat
				Lbs.	Ave. Per Cent	
1.	N. S. H. Monte 1st, Gr.	6	17	20,596.4	762.287	3.70 762.287
2.	Pauline Creamelle Mercedes, H.	8	7	22,814.2	759.761	3.33 759.761
3.	Imp. President's Doris of Lewison, G.	7	7	13,482.3	690.160	5.12 690.160
4.	Roan Cow, Gr. G.	7	13	13,179.4	685.840	5.20 685.840
5.	Brindle, Gr. J.	8	7	18,425.6	632.443	4.71 632.443
6.	Jesebel of Edgemoor, G.	2	7	10,717.3	632.140	5.89 783.754
7.	Mabel Wyntje 2d, H.	9	7	18,495.0	631.874	3.42 631.874
8.	Queen, Gr. J.	8	7	10,260.0	595.333	5.80 595.333
9.	Beauty 1st, Gr. J.	8	7	9,792.7	589.548	6.02 589.548
10.	Imp. Snowdrop 3rd of Havilland, G.	3	23	11,072.9	589.110	5.32 695.150
11.	Lady Mc, Gr. J.	12	5	12,474.4	583.704	4.67 583.704
12.	Valda, Gr. J.	5	5	9,884.1	576.136	5.82 576.136
13.	Donahue, Gr. H.	7	5	14,207.7	573.677	4.04 573.677
14.	Little Red Cow, Gr. J.	7	14	11,359.0	571.621	5.08 571.621
15.	Irene, Gr. J.	5	5	9,582.9	569.575	5.94 569.575
16.	Florinda, Gr. J.	5	10	9,076.7	568.680	6.27 568.680
17.	Bony, Gr. J.	5	11	9,553.7	567.601	5.94 567.601
18.	Reddy, Gr. J.	5	5	11,801.9	565.750	4.79 565.750
19.	Babe, Gr. J.	6	16	10,313.4	562.571	5.45 562.571
20.	Mabel, Gr. J.	5	5	9,947.1	558.511	5.61 558.511
21.	Little Guernsey, Gr. G.	9	10	10,767.1	555.736	5.16 555.736
22.	Martha, Gr. J.	9	5	9,979.1	555.580	5.57 555.580
23.	Fanny, J.	5	5	8,501.5	554.491	6.52 554.491
24.	Jeffrie's Brownie, Gr. J.	7	15	9,939.4	544.439	5.48 544.439
25.	Kern's Holstein, Gr. H.	10	10	10,608.2	532.995	5.02 532.995
26.	Lady Fern, Gr. J.	5	5	8,505.4	532.303	6.25 532.303
27.	Creamcup Poybe, H.	5	10	7,562.7	521.357	3.15 521.357
28.	MacFarland, Gr. G.	3	13	10,079.2	517.201	5.13 610.297
29.	Mabel Aouda, H.	5	5	16,741.1	515.962	3.08 515.962
30.	Little Beauty 2d, G.	4	1	9,777.0	513.928	5.26 575.387
31.	Beauty, Gr. J.	11	5	8,695.0	503.947	5.80 503.947
32.	Frances, Gr.	5	5	9,483.6	498.477	5.26 498.477
33.	Marigold Olga Ann, J.	7	11	9,104.6	495.017	5.44 495.017
34.	Little Brownie, Gr. J.	8	17	8,522.5	494.721	5.80 494.721
35.	Beauty 2nd, Gr. J.	6	5	8,991.9	494.711	5.50 494.711
36.	Dina, Gr. J.	8	5	8,765.3	492.163	5.61 492.163
37.	Grace, J.	6	5	9,113.6	490.838	5.39 490.838
38.	Imp. Alcia of Linwood, G.	4	8	8,852.7	489.728	5.53 614.214
39.	Big Brindle, Gr. J.	5	17	9,979.4	487.788	4.89 487.788
40.	Marigold of Ferndale, J.	5	1	8,167.1	487.259	5.97 487.259
41.	Pansy, J.	5	5	9,730.0	486.248	5.00 486.248
42.	Hilda, Gr. J.	5	5	7,319.3	475.427	6.50 475.427
43.	Jessy Rose of Edgemoor, G.	2	8	7,859.5	474.645	6.29 588.560
44.	Silky, Gr. J.	3	12	8,911.3	473.966	5.32 559.280
45.	Rosalee, Gr. J.	11	5	7,281.9	466.181	6.40 466.181
46.	Bonnie, Gr. J.	5	5	7,507.3	464.266	6.18 575.689
47.	Tessie, Gr. H.	2	11	11,073.2	457.512	4.13 567.315
48.	No. 476	5	1	10,704.4	455.735	4.26 455.735
49.	Olga Darling, J.	2	11	7,364.8	441.642	6.00 547.636
50.	Pride of California, J.	3	5	7,028.1	435.815	6.20 514.262
51.	Foster's Jersey, Gr. J.	5	15	7,516.6	432.526	5.75 432.526
52.	Cecil, Gr. J.	3	6	7,650.0	430.009	5.62 507.411
53.	Meridale Jap's Nora, J.	4	6	8,114.2	429.867	5.27 451.370
54.	Bellina Darling, J.	5	1	7,668.7	426.849	5.56 426.849
55.	Annette of Venadera, J.	6	7	8,431.3	422.151	5.01 422.151
56.	Tormentor's Easter Lily, J.	5	5	6,926.6	415.515	6.00 415.515
57.	Raymond's Lily of St. Saviour, G.	5	1	9,040.0	411.455	4.55 411.551
58.	Dandy Jr., Gr. J.	2	5	6,978.7	409.735	5.87 532.656
59.	Foster's Brindle, Gr. J.	5	16	8,949.8	401.221	4.48 401.221
60.	Anderson's Spotted, Gr. G.	5	14	8,872.3	398.081	4.49 398.081
61.	Norio's Elsie Granger, G.	4	1	7,782.5	370.501	5.46 400.141
62.	California Inka Colantha, H.	3	8	8,452.4	341.706	4.04 403.213
63.	University La Polka Lady, H.	9	4	9,506.4	334.206	3.52 334.206
64.	Queen of Hopland, H. (8 months)	10	2	8,661.0	302.618	3.49 302.618
65.	Aralia De Kol Younger, Gr. H.	3	7	9,261.6	284.740	4.55 327.451
66.	Toots, H.-J.	2	17	7,321.4	277.714	3.79 361.028
67.	King's Lady Maggie, J.	7	3	5,815.6	275.227	4.73 275.227
68.	No. 478 (8 months)	4	11	5,039.0	272.627	5.41 286.258
69.	Alcartra Younger De Kol, Gr. H.	2	8	5,777.8	230.791	3.99 286.181
70.	Comedia Sol. Hengerveld, H. (9 mos.)	8	10	6,807.4	225.323	3.31 225.323
71.	California Jap's Nora, J. (7 1/2 mos.)	2	1	3,761.2	216.628	5.76 281.616

Owners of Cows: 1. Napa State Hospital; 2. A. W. Morris & Sons; 3. Palo Alto Stock Farm; 4. 13, 14, 17, 19, 21, 24, 25, 28, 34, 39, 44, 51, 59, 60, Iversen; 5. 8, 12, 15, 18, 20, 22, 23, 26, 31, 32, 42, 46, G. E. Trigg; 6. 10, 43, W. H. Dupee; 7. 29, Baldwin; 9. 11, 16, 33, 35, 36, 37, 40, 45, 49, 50, 54, 56, 58, J. W. Coppini; 27. Kell; 30, 61, Elliot-Brant Rancho; 38, 57, A. J. Welch; 41, Bomberger; 47, 66, Beebe; 48, 68, Hollow-Hill Farm; 52, Bonnett Bros.; 53, 62, 63, 64, 71, University Farm; 55, G. H. Miller; 65, 69, 79, J. M. Christen; 67, Dr. H. G. Gross.

Prospects in the Southwest

Written for California Cultivator By A. L. Spellmeyer



HE drouth has broken; rain and snow has relieved the situation for the future months but of course cattle loss will probably continue for the first weeks of green grass on many ranges where stock is poor and weak. The main consideration is, however, that there will be spring and summer feed.

To figure spring conditions we have still to know and experience the kind of weather which will follow the present storms, as a late cold spring, outside of California especially, would cause considerable cattle loss, whereas a warm spring—and conditions indicate the latter—would result in an exceptionally good year for the cattle which have come through hardship and drouth. California beef will

be not over plentiful, which fact may help feeders to secure better returns for their stock and to make up a portion of their loss.

The facts are that both the sheep and cattle in the Southwest have been hard hit during the past year, and a conservative estimate would be \$50,000,000 of loss and extra expense borne by the livestock business of the Southwest during the past year.

There is however a brighter side for the stockman, as there is every prospect for good prices and strong demand, early grass for the spring and summer, and cheaper roughage and forage. The depletion caused by forced marketing can have but one result, additional demand to be realized during the coming year. We must remember further that cattle

25 Times as Much Interest as the Savings Bank Pays

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Will Pay 100%—and do it Every Year  
Every Stave Selected from No. 1 Redwood Tank Stock  
All Parts Cut to Fit Right and Stay Tight

## Leak Proof and Permanent

Leak Proof Doors—Leak Proof Stave and Foundation Joints and the finest materials obtainable make the IDEAL a safe, permanent investment for every dairyman.

DON'T BUY A SILO UNTIL YOU KNOW ALL ABOUT THE IDEAL.

Tell us how many cows you want to feed, get full particulars, terms, etc., and ask for our DAIRY HAND BOOK giving 44 rations for dairy cows.

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A combination Silo Filler, Feed Cutter and Alfalfa Meal Machine. A machine that will cut your feeding costs 15 per cent to 25 per cent. Send for catalog and circulars on Feed Cutting and sample of alfalfa meal.

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PURE BRED



REGIST'D HOLSTEINS

All Holstein breeders agree that "Pontiac Korndyke" was the greatest transmitting sire, both through sons and daughters, that ever lived. His greatest son and the world's only double century sire, is "King of the Pontiacs," with 228 daughters in the A. R. O. list. These two sires combined have more 40-pound, more 30-pound, more 25 and more 20-pound daughters than any two sires that ever lived—and these two sires are respectively the grandsire and sire of

## King Korndyke Pontiac

The senior sire of our herd. Isn't that enough to convince any thinking person that our King must be a wonderful animal? Some breeders surely think so, when they finally bid up his 18-months-old son to \$6,500 in the recent guarantee sale last December. But a great sire must also have a great dam. Below is the picture of his dam, May Korndyke 2nd. Look at her size, her big middle, showing wonderful capacity, and finally her wonderful and uniform udder. Have you ever seen a more perfect animal? This cow in turn came from the old foundation cow May Korndyke, with 30.69 pounds of butter in seven days, and was sired by "Beauty Pieterje Prince," who is recognized as one of the greatest sires of the breed. Wouldn't a young bull sired by "King Korndyke Pontiac" breed up your herd? We have several and are selling them most reasonably. Give us an inquiry. It doesn't cost you anything, beyond postage, and we think our reply will really surprise you.

JANE GARDEN FARM  
SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C.W. YOUNG SUP'T.



Guaranteed



loss will mean such loss must be replaced. Much land of the Southwest can be used for no other purpose than grazing stock, and in order to pay interest and expense stock must be grazed, so that from Texas to California drouth stricken ranges will be in the market for cattle to replace those which have died or been shipped out.

There are in the West over 20,000,000 of the 43,000,000 beef type cattle in our country, and the Southwest should normally produce millions of young steers and breeding stock, which will be far below normal supply this year. "The drouth hurt the calf crop and those surviving are in many cases not up to the usual standard of quality in bone and flesh. There have been freakish spots however. For instance, Northern Arizona, in the higher portions, has had the best year for a decade, and there has been less loss and cattle is in better condition than usual. This has been largely on account of the open mild winter, and last summer rains made good grass and the mountain streams supplied a sufficiency of water.

Outside of California and portions of Southern Arizona and Texas rain and snow came January 8 and before in parts of New Mexico, while plentiful rains had already arrived in the Northwest. The sheep on the desert in Arizona were being fed corn and meal and alfalfa to keep them alive during the lambing period, and while rains started there during the latter part of January grass did not start very fast, and it was not until the last rains in February that a fair season became assured. There will be some loss and there has been already a considerable loss of lambs, but a 50 or 60 per cent lamb crop seems reasonably assured, so that the sheep man will not be put out of business but have a chance for a moderate profit.

We therefore face a depleted supply, a strong market, and a reasonable assurance of plentiful grass in the near future. In many places there will be more forage than grain, and later in the year the past year's soft corn experience in the Middle West will result in more cattle feeding if feeders are not discouraged by the loss experienced this year, which high feed and low cattle prices caused.

The old contention that a stock man must make an extra ten per cent to take care of bad years has proven true again, as some men have been so hard hit it will take years to recover, and some of the California men have been hit so that they will have difficulty in again stocking up unless measures are taken to supply them with reasonable term money with which to purchase cattle. The stock business is not all profit.

The Arizona men expect better wool prices than last year, and the general expectation is that yearling steers will be higher than last year, some of the northern men talking \$40 for the best grades already. One contract at \$40 is rumored for some extra good yearling steers and \$41 for yearling heifers, but definite prices are as yet not made. Hides are lower than for years and leather and shoes are higher than ever before known. Our last dry flint hides brought less than 20 cents, whereas two years ago we got 40.

The net profit in cattle is considerably less today than three years ago and the uncertainty and expense is more. However by proper methods an excellent percentage can be realized from stock cattle on yearlings

from \$30 up on most range lands and at \$35 up on leased pasture lands. Alfalfa land at present lease prices is out of the question except in the crises to carry cattle through for a short period or to fatten beef. It can be readily understood how cattle and feeders lost money, when grain and forage was much higher than usual and prices realized from fat stock less this winter than usual.

The tendency seems to be towards younger cattle again this year, whereas last year the big demand was for aged steers, but with cheap forage and the hope for a better market for beef, together with the restocking demand, probably cows and younger cattle will be in exceptional demand.

What the stockman of California needs more than anything else right now is support from banks and bankers so that money at fair interest rates can be secured to enable purchase of livestock and the holding over of forage as a safety measure for the future, as cattle are not going to be easily secured this year.

#### SALE OF PURE BRED HOLSTEINS

The Western Washington Holstein Breeders' Association in preparing for its seventh semiannual sale anticipates its greatest success this year because of the high quality of the offerings. As an indication we may refer to the fact that there is a son of the King of the Pontiacs in the bunch of 85 pure bred. The sale is to be held at Kent, Washington, April 17. It is to be a guarantee sale.

#### THE CULTIVATOR ON THE WESTERN FRONT

The following is in letter from one of Uncle Sam's boys, E. H. McCallum, Company A, 18th Engineer Regiment, somewhere in France, who was until last year an horticulturist in California, to A. R. Gould.

"I received your Cultivator safely and noticed your article. I must say it is good. I showed it some of the boys and they were of the same opinion. It is a very useful article." The Cultivator frequently goes to France and we understand that the boys enjoy reading of the doings agriculturally in their fertile state."

### HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

#### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

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## A CONTRACT

A buyer of registered cattle at public auction is directly concerned in conditions of sale.

If you have never seen one of the individual contracts signed up for every animal sold in our regular consignment sales, we will gladly mail you a copy on request.

If you want to sell, write us.

**California Breeders Sales and Pedigree Company**

C. L. Hughes, Sales Mgr.,

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When writing advertisers, mention the Cultivator.

## Are You Shooting on All Four?

Ever bump along the road in an automobile shooting on two cylinders, wasting gasoline and oil, panting and sputtering at every little grade, having to drive way over on the edge of the road to make way for the fellows going past shooting on all four?

How about your herd of registered Holsteins? Is your herd of good cows, representing half your breeding power, carrying all of the load, while the other two cylinders represented by your herd bull are contributing nothing to your advancement?

Why not hitch those good cows up with a real herd bull, get the herd shooting on all four, and keep out in front of the Holstein procession?

### Sir Veeman Korndyke Pontiac

will put a world of power into your breeding machinery, and you can buy him at your own price when we sell him in R. F. Guerin's sale.

## Consider These Facts

SIR VEEMAN KORNDYKE PONTIAC is sired by Sir Veeman Hengerveld, now with over 90 A. R. O. daughters including a larger percentage with records above 30 pounds than are credited to any other bull. He has upwards of 100 daughters yet to freshen and go on test, and is today in active service in one of the very best eastern herds.

SIR VEEMAN KORNDYKE PONTIAC is out of Beatrice Korndyke Pontiac Veeman, 30.13 pounds butter in seven days. Her sire is Sir Korndyke Pontiac Artis, son of Pontiac Artis who made 31.71 pounds butter in seven days, 1076.91 pounds in one year, and her dam is Countess Veeman Beryl Wayne, a 29.88 pound four year old daughter of Sir Veeman Hengerveld.

SIR VEEMAN KORNDYKE PONTIAC is just three years old, a big, strong, straight individual, already has over 30 living daughters and is bred to about 65 good cows and heifers, assuring him at least 60 living daughters before he is four years old.

SIR VEEMAN KORNDYKE PONTIAC is the only son of Sir Veeman Hengerveld in service on the Pacific Coast, and if you have any doubt as to the value of one of his sons out of a 30 pound dam, just price one.

SIR VEEMAN KORNDYKE PONTIAC is qualified in every way to head any herd of high class registered Holsteins, and with the breeding start he already has he is one of the rarest opportunities ever offered in the shape of a herd bull in a western sales ring.

SIR VEEMAN KORNDYKE PONTIAC is a real, high power herd sire. There will be keen competition for his ownership in this sale, and he will be a bargain at any price that is paid for him well up into four figures.

### 69 Registered Holstein Cows and Heifers, 11 Registered Holstein Bulls

will Comprise the Offering in this Sale, which is the Entire Breeding Herd Owned by R. F. Guerin, and will be Held on His Farm Near VISALIA, CAL., THURSDAY, APRIL 4, 1918.

Mr. Guerin is keeping nothing except all of the heifer calves from Sir Veeman Korndyke Pontiac, affording breeders an opportunity to buy at their own price all of the splendid cows and heifers that are the result of his fifteen years of constructive breeding from a good foundation. The females will include among others these great attractions:

FOUR DAUGHTERS OF WINIFRED HOTALING, dam of Winifred Hotaling 2nd, 33.92 pounds butter in seven days, 19,951 pounds milk and 874.12 pounds butter in one year, and Winifred Hotaling 3rd, 32.19 pounds butter in seven days, who sold in the Guaranty Sale for \$1750. Winifred Hotaling is one of the only three cows in California that have produced two daughters with official records about 30 pounds butter in seven days.

TWO DAUGHTERS OF A 27.42 POUND FOUR YEAR OLD that milked 680.1 pounds in seven days.

A DAUGHTER OF SPRING FARM KING PONTIAC 6TH, whose two year old daughters are making wonderful official records.

A BEAUTIFUL 20 POUND COW and her three daughters, one of them a 22.27 pound three year old.

TWENTY-NINE DAUGHTERS OF ARCADY PON-

TIAC WAYNE HENGVERELD, who has the largest list of A. R. O. daughters of any sire yet developed on the whole Pacific Coast.

THIRTEEN GRANDDAUGHTERS OF JUDGE HENGVERELD DE KOL, whose 41 A. R. O. daughters have official records up to 34.19 pounds butter in seven days, 1227.46 pounds in one year.

SIXTY-FIVE COWS AND HEIFERS in calf to Sir Veeman Korndyke Pontiac, one of the best bred young herd sires in the west.

TWENTY-ONE COWS AND HEIFERS with official records up to over 24 pounds butter in seven days.

#### BULLS

A SON OF SIR VEEMAN KORNDYKE PONTIAC out of a 28 pound dam.

A SON OF SIR VEEMAN KORNDYKE PONTIAC out of a 27.42 pound four year old that milked 680.1 pounds in seven days.

SEVERAL OTHER SONS OF SIR VEEMAN KORNDYKE PONTIAC out of good record dams.

DAIRMEN—Don't miss this opportunity to buy splendidly bred, well marked, straight young bulls at your own price.

This sale will be conducted under the regular sales contract of this company by which every animal sold is absolutely guaranteed to be a breeder, sold without reserve, limit, or by-bid, individual tuberculin test certificate with each animal, and EVERY ANIMAL SOLD SUBJECT TO TUBERCULIN RETEST BY THE PURCHASER. Catalog free on request. Write for one. Management of

**California Breeders Sales and Pedigree Co.**

J. M. Henderson, Jr., Pres., C. L. Hughes, Sales Mgr.  
Sacramento, Cal.

Auctioneer: Col. Ben A. Rhoades, Los Angeles

**LONE STAR**  
Registered Herd



**HEREFORDS**  
Unregistered Herds

800 Cows and 50 Bulls Best of Breeding Show Winners

All stock guaranteed as represented. Write for terms and particulars.

old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.

Scharbaur & Eldson, Midland, Texas

4000 Head Both Sexes Same Breeding as Registered Herd

We offer for immediate delivery, 200 two year

old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.

Elevation 3000 Feet



## Hereford Cattle Sale

by the

### Pacific Coast Hereford Cattle Breeders Association

University Farm, Davis, Cal. Wednesday, April 10, 1918

This offering will be made up of about 45 females and 40 bulls. All Western bred. Consigners to the sale: Cazier & Sons, Wells, Nevada; H. M. Barngrover, Santa Clara; H. H. Gable, Esparto; W. J. Bemmerly, Woodland; D. O. Lively, Mayfield; Dean Duke, Likely; Simon Newman Co., Newman, California.

Fred Reppert, Auctioneer.

Write for catalog to:

D. O. LIVELY

216 Hearst Bldg., San Francisco, Cal.

## HEREFORDS

### Herefords

H. H. Gable  
Esparto - California

Breeding Stock for Sale

### Bar N. Herefords

Anxiety and Beau Brummel Breeding

E. A. Noyes & Son  
Sutter - - - California

### Anxiety-Herefords

Stock for Sale in Season

Chas. Rule, Duncans Mills, Cal.

Choice Breeding. Bred and Raised on Range

D. O. Lively Stock Farm  
Mayfield - - - California

### Registered Herefords

Office: 216 Hobard Bldg.  
San Francisco - - - California

### Herefords

Over 100 choicely bred females in herd. Have been selling to cattlemen for years.

W. J. Bemmerly, Woodland, Cal.

### Herefords

W. R. Madden  
Dixon - - - Calif.

Herd consists of more than 100 registered cows of the best blood.

### ALAMO HERD

(Founded by the Late Gov. Sparks)

### Registered Herefords

Herd and range bulls reasonable. Largest Hereford herd in California.

W. D. DUKE, Likely Modoc Co., Cal.

### Herefords Farms

Geo. Watterson, Owner  
Bishop, Inyo County, Cal.

Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

## Field Notes from the Live Stock Men

King of the Pontiacs is dead. But his blood will always live in some of the world's greatest Holstein herds. It will be remembered that only last summer this great old bull sold at public auction for \$12,500 although the buyers well knew that the grand old fellow was likely to drop out at any time. They were recently credited with the statement that they had over 60 high class cows in calf to him, which gives them a good safe margin over their investment. Four sons of King of the Pontiacs are in service in California in the herds of Fred W. Kiesel, Sacramento; Millbrae Dairy, Millbrae; James McGillivray, Sacramento, and E. O. McClure, Santa Ana.

Sir Pietertje Ormsby Mercedes has entered the charmed circle of sires with 40 pound daughters, through the record of his daughter, Bess Burke Ormsby, who had to her credit at last report 42.31 pounds butter in seven days and still in test. As a junior two year old this cow made 17.38 pounds butter in seven days, 17,935.7 pounds milk and 856.46 pounds butter in one year. As a junior four year old she made 29.32 pounds butter in seven days. She calved this time at five years two months. She is out of Spring Brook Bess Burke, 34.80 pounds butter in seven days, 1094.16 pounds butter in one year, who now has a 42 pound daughter, a 38 pound daughter, a 33 pound daughter, a 31 pound daughter, a daughter with 1235.32 pounds butter in one year and another with 1044.91 pounds butter in one year. Only one herd of Holsteins in California has any considerable amount of this blood on both sides, the one herd being that of The McCloud River Lumber Company, McCloud. They own a fine son of Sir Pietertje Ormsby Mercedes, and also own a number of good granddaughters of Wisconsin Bess Chief, the sire of Spring Brook Bess Burke. Their herd also contains upwards of 50 granddaughters of Sir Ormsby Hengerveld De Kol and Sir Korndyke Hengerveld De Kol, that are also being bred to Sir Pietertje Ormsby Canary, their son of Sir Pietertje Ormsby Mercedes.

Bridgford Company, Knightsen, recently purchased 227 acres of the best land in the Patterson district, Stanislaus County, on which they will build a fine residence and adequate and modern buildings to care for their great herd of registered Holsteins which will be moved to the new farm as soon as the buildings are ready. The Patterson Colony is being developed on the rich lands of the famous 18,000 acre Patterson Ranch, which is one of the best bodies of land in California. It is very conveniently located, tributary to the great dairy section on the west side of the San Joaquin Valley. The addition of the Bridgford herd to Stanislaus County Holstein breeding circles will mean much for dairy progress in that county.

R. L. Holmes, Modesto, is building up a selected herd of registered Holsteins. Practically all of his purchases were made in the public sales during 1917. Recently official testing was begun, and two very good records have been completed. Jane Creamelle Hengerveld, bought from A. W. Morris & Son in the third Sacramento sale, calved as a junior two year old, dropping a fine heifer calf by Sir Aaggie De Kol Acme, and made 21.48 pounds butter in seven days.

She is sired by a 33 pound grandson of Hengerveld De Kol. Blue Bell Karel Walker, bought from Gotshall & Magruder in the Guaranty Sale, also calved as a two year old and made 16.80 pounds butter in seven days. This heifer is a beauty and looks most promising for great production as she matures. She is a daughter of King Walker 5th. These records were made under very ordinary conditions, but seem to indicate something of what may be expected when Holmes Stock Farm gets into its stride.

J. H. Harlan Company, Woodland, recently added another good record in their herd when a junior two year old daughter of King Mead of Riverside made over 23 pounds butter in seven days.

Dominita Colantha De Kol 2nd, owned by Kounias Registered Stock Farms, Modesto, recently completed the very nice official record of 27.68 pounds butter in seven days as a senior three year old. She is a most attractive type of heifer and seems likely to materially increase her record later on. Last year she made 22.42 pounds butter in seven days as a senior two year old.

A good move is under way in several sections among orchardists and others who keep one or two cows. The idea is to buy good registered cows to furnish the family with milk, cream and butter, thereby making more certain good production and the securing of a calf that will be of good value. Such a move is thoroughly practical at this time when good herds of registered dairy cattle are becoming well distributed throughout the state and the services of high class bulls are available without the owner of one or two cows being compelled to make a large investment in a sire. It is reported that some of the farm bureaus are discussing the registered cow question at present.

Burpil, in the registered Holstein herd owned by J. D. & B. H. High, Modesto, recently made an official record of 23.29 pounds butter from 477.6 pounds milk in seven days. Her sire is out of the same dam as Boweda, 31.91 pounds butter in seven days.

Elliott-Brant Rancho, Owensmouth, is working out a large success with their registered Guernseys. Although the herd has been steadily increasing in size it has never yet been able to meet the demand for whole milk that has developed because of the quality and purity of the product put out by this establishment and which is sold at wholesale for 18 cents per quart. The large official records made by cows in this herd have also brought a large business in the sale of young bulls, keeping the herd sold right down to calves most of the time.

Stratford Segis Blanche De Kol, a junior four year old daughter of Sir Segis Hengerveld De Kol, recently made an official record of 26.62 pounds butter from 601.8 pounds milk in seven days. She is owned by Stalder Bros., Rosamaines Farm, Riverside.

A new state record junior two year old for butter production in seven days is still in test in the herd of registered Holsteins owned by Bridgford Company, Knightsen. This is Bessie Veeman Korndyke who freshened at two years three months. She already has over 25 pounds butter to

## Elliott-Brant Rancho Guernseys

We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.

We have calves from A. R. cows with different sized records up to 750 pounds of butter fat. Our prices are reasonable and are based on breeding and records. Write and tell us your needs and we will tell you how we can fill them.

Elliott-Brant Rancho - Owensmouth, Cal.

D. O. Brant, Mgr.

## BERKSHIRES



Forest Grove Duchess 5th

Booking orders for a few bred sows, in service to Maplewoode Duke and Highwood Standard 91st.

MAPLEWOODE RANCH  
Callistoga, Cal.

E. M. HOLJE, Owner  
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## Duroc-Jersey Hogs AT IRELAND

Ranch at Owensmouth  
City Office: 1219 Brockman Bldg., Los Angeles  
Spring Boars by Orion Cherry King V (Reformer) For Sale

## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

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# TAGUS

## Aberdeen Angus

Largest herd west of Rockies. Unlimited demand for our bulls in season.

The ideal breed for baby beef, feedlot, or range.



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Pacific States Corp.

Tulare, Cal.

H. C. MERRITT, Jr., Manager

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco  
Carruthers Farms, Mayfield, Cal.

## ROSAMAINES HOLSTEINS



King Pontiac Netherland Segs 3rd  
CHOICE BREEDING STOCK FOR SALE  
A. R. O. Records up to 34 lbs. Butter in 7 Days  
ROSAMAINES RANCHO  
Stalder Bros. RIVERSIDE, CAL.

## HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

## Holstein Bulls

Well bred, vigorous, registered Holstein bulls of good type for sale. Steady sales have moved all our bulls of service age, but we have a few unusually good calves to offer at moderate prices.

The McCloud River  
Lumber Company

McCloud, California

**IF BOSSY Could Talk**  
she would ask for outside support for her over-worked organs of milk production. Try Kow-Kure. Kow-Kure works with great tonic effect on the system, prevents disease, a sure remedy for Abortion, Barrenness, Retained Afterbirth, Bloating, Lost Appetite, Bunches.  
Buy Kow-Kure from feed dealers and druggists.  
BART ASSOCIATION CO.,  
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KOW-KURE  
\$50 &  
\$1.10 per lb.  
Booklet, "The Home Cow Doctor," free.

her credit in seven days and is expected to increase. Another junior two year old, Empress Korndyke Pontiac, has completed a record of 96.76 pounds butter in 30 days, also a state record in class, while still another junior two year old, Nattalene Walker, broke state record for milk in class for both seven days and 30 days, making 549 pounds in seven days and 2247 pounds in 30 days.

Many New Holstein Breeders are doing official test work and not a few of them are going to start right in with yearly tests. Which is a good thing for the breed and a better thing for the breeders. Only a few years ago most small breeders had little hope of getting a cow across the 30 pound line. Today there are a good number of 30 pound cows in this state that have been developed in small herds, and a 30 pound cow is worth more money today than ever before. A good cow without a record may be worth say \$400. Let her prove herself by making say a 30 pound seven day record or a corresponding yearly record and her value in the estimation of buying breeders immediately jumps three, four and five fold or more, and the value of her offspring by a good bull increases in proportion. Thus the beginning breeder who takes up testing at once is displaying good business judgment, not alone to establish better selling values but to guide his own breeding operations.

Tilly Alcartra still continues to outdo herself. She is still on strictly official test and recently milked 115 pounds in one day, the biggest day for milk she has ever had during her more than five years on test. She has now been in milk over 60 days and is making over 33 pounds of butter in each seven days at the present time.

A. W. Morris & Sons, Woodland, recently installed milking machines. The registered Holstein establishments in the state seem to be taking up machine milking rapidly, and from reports are finding it a success.

Tulare Holstein Farm, home of the \$6500 bull King Korndyke Pontiac 20th, owned by W. J. Higdon, Tulare, is making splendid development in the way of official records under the capable care of Harry L. Redd. The junior two year old Madrigal Mooike 2nd has made 20.46 pounds butter from 551.6 pounds milk in seven days, 80.56 pounds butter from 2138.5 pounds milk in 30 days. She thus has the California state record for milk in seven days for a junior two year old, displacing the recently made record of Nattalene Walker. She made her best seven day record three weeks after calving, and is still in test, milking over 74 pounds per day. Leda Hartog Ormsby 2nd made 24.89 pounds butter from 606.3 pounds milk in seven days. She is sired by Lad Legend of Kakenstein 2nd, one of whose daughters, Winnifred Piebe De Kol 2nd, recently made 33.09 pounds butter from 637.3 pounds milk in a herd up in Washington. Hartinga Willis made 24.14 pounds butter from 614.8 pounds milk in seven days, and is now on 30 day test. Thelma Hartog De Kol has to her credit for the first seven days on test, 31.09 pounds butter from 525.8 pounds milk, and is quite certain to increase these figures materially. She is an exceptionally good type of cow and has four living daughters, three of them owned by Mr. Higdon and the fourth by Alex Whaley, Tulare. There are some other good ones just going on test at Tulare Holstein Farm, and before the

## Save Butter-Fat, Time and Labor for Yourself and for Uncle Sam with a NEW DE LAVAL CREAM SEPARATOR

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Butter-fat right now is selling at the highest price in many years, and you can't afford to waste an ounce of it.

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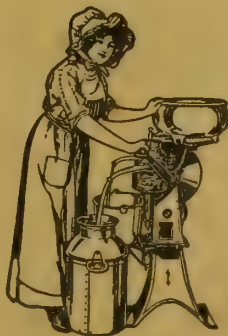
### Save for Uncle Sam

It is the patriotic duty of every cow owner to save butter-fat. We are a nation at war, and not a particle of fat should be wasted. When all European countries are encouraging the use of the best cream separator, can we do less?

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Railway delays are so serious that deliveries can't be depended upon, and if you don't order your De Laval early there is no telling when you can get it. Then, too, labor and material conditions may compel higher prices. The sooner you get a De Laval saving butter-fat and labor for yourself and Uncle Sam, the sooner it will pay for itself.

If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval at once. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.



Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

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LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

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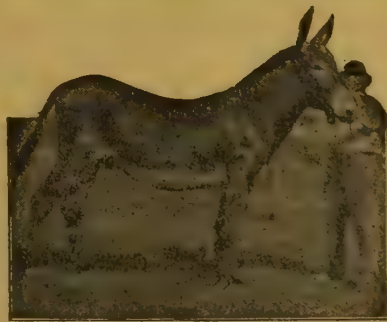
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### STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

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Young sons of Prince Hiske Walker out of A. R. O. dams for sale.  
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#### White House Holsteins

A well bred proven herd sire for sale, also a few bull calves.  
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### Creamcup Holsteins

Burke. A few young bulls for sale.

Headed by the 33.92 pound bull Creamcup Champion Pontiac

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#### Sylvan Iris Holsteins

Headed by a son of Dutchland Sir Pietertje Creamella. Well bred young bulls and a few registered heifers for sale.  
E. F. Young, Rt. B, Box 174, Modesto.

#### HOLMES STOCK FARM

Registered Holsteins of best breeding. Young bulls for sale.

R. L. Holmes Modesto, Cal.

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Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.  
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Young bull calves for sale with yearly record backing.

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#### Segis Pontiac De Kol Dutch

Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale.  
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Sunny Stanislaus, where the miracle of irrigation and intensive culture turns the plains where cattle roamed into 20,000,000 of gold annually.



Our Senior Herd Sire is KING KORNDYKE HENGVELD ORMSBY 7th  
Five of his sisters sold at public auction for \$23,800, an average of \$4760.

This blood has made some of the world's greatest producers. Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne. Young bulls for sale. No females.  
REGISTERED BERKSHIRE BOARS, sons of the \$1500 boar Star Leader, for sale.

Kounias Registered Stock Farms, Modesto, Cal.

## First Spring Sale of SHORTHORNS

Under Auspices of

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will be held at

Sales Pavilion, 478 Valencia Street, San Francisco on

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Bulls for range man

Bulls for the registered herds

Cows and heifers of quality

All animals tuberculin tested

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3 Bulls

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Bulls are suitable to head any herd. Heifers are highest quality.

### THE ORMONDALE CO. Redwood City California

This stock may be seen at our ranch any time before the sale. Ranch located in Portola Valley, seven miles from Redwood City.

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Breeders of Grand Champion Cow, Sacramento, 1917  
Range and Herd Bulls of Choice Breeding

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season is finished there will be a bunch of good record cows and heifers to mate with King Korndyke Pontiac 20th.

### State Dairy Cow Competition

California Cows Make Magnificent Showing in Competition Which Began in 1916. Full List of Winners is Given.

Through courtesy of Professor F. W. Woll our subscribers are permitted an advance look at the awards of the judges to winners of the California State Dairy Competition. This competition has meant much to the dairy interests of the state, and the winners are to be congratulated at the wonderful showing made.

In the following announcement of awards the first figures following the name of winner give actual or average butter-fat production, while the second give the credit due because of the handicap under rules governing the competition:

"4. In order not to place young animals at a handicap in the award of prizes, the records for production actually made by cows under five years of age shall be increased in accordance with the average results obtained in authenticated yearly tests of cows of different ages, as follows: Records made by cows under 2½ years at the beginning of the test shall be increased by 30 per cent, and those made by older heifers and cows shall be increased as follows: for heifers 2½ to 3 years old, by 24 per cent; for cows 3 to 3½ years, by 18 per cent; 3½ to 4 years, by 15 per cent; 4 to 4½ years, by 8 per cent, and 4½ to 5 years, by 5 per cent."

#### HERD PRIZES

For the highest production of butter-fat by ten cows in a herd during ten consecutive months.

##### Class A, Jerseys or Guernseys

1st, \$300, J. W. Coppini, Ferndale, 435.85, 470.95.  
2nd, \$200, Guy H. Miller, Modesto, 394.49, 418.18.

##### Class B, Holsteins

1st, \$300, A. W. Morris & Sons Corp., Woodland, 588.75, 656.62.

##### Class C, Other Breeds and Grades

1st, \$300, G. E. Trigg, Ferndale, 557.36, 580.54.  
2nd, \$200, Iver Iversen, Arcata, 558.56, 576.41.  
3rd, \$100, F. Stenzel, San Lorenzo, 540.24, 558.86.  
4th, \$50, J. W. Coppini, Ferndale, 520.57, 532.86.

#### INDIVIDUAL PRIZES

For the highest production of butter-fat by a cow during ten consecutive months.

##### Class A, Jerseys or Guernseys

1st, \$200, Palo Alto Stock Farm, Imp. England's Lady Orange, G., 585.82, 585.82.  
2nd, \$100, J. W. Coppini, Ferndale, Gerlie Olga of Ferndale, J., 500.99, 576.14.  
3rd, \$50, Elliott-Brant Rancho, Owensmouth, Little Beauty 2d, G., 532.77, 575.39.  
4th, \$25, A. J. Welch, Redwood City, Imp. Alicia of Linwood, G., 531.47, 573.99.

##### Class B, Holsteins

1st, \$200, A. W. Morris & Sons Corp., Woodland, Miss Valley Mead De Kol Walker, 819.42, 966.92.  
2nd, \$100, Palo Alto Stock Farm, Palo Alto, Jennie Terzool Hicks 4th, 764.94, 764.94.

3rd, \$50, A. M. Bibens, Modesto, Abbie De Kol of East Bank 2d, 656.61, 656.61.  
4th, \$25, Mrs. Anita M. Baldwin, Santa Anita, Princess Zozo Pontiac, 587.17, 634.14.

##### Class C, Other Breeds and Grades

1st, \$200, Napa State Hospital, Napa, Monte 1st, Gr. H., 762.29, 762.29.  
2nd, \$100, F. Stenzel, San Lorenzo, Alice, Gr. H., 729.19, 729.19.  
3rd, \$50, Iver Iversen, Arcata, Roan Cow, Gr. G., 685.84, 685.84.  
4th, \$25, G. E. Trigg, Ferndale, Brindle, Gr. J., 632.44, 632.44.

#### SPECIAL PRIZES

1. For the highest average production of butter-fat during ten consecutive months by a grade herd of 10 to 25 cows headed by a pure-bred sire. Choice of an Ayrshire, Guernsey, Holstein, and Jersey bull calf, offered respectively by J. W. Clise, Seattle; A. B. Humphrey, Mayhews; K. W. Abbott, Milpitas, and N. B. Locke Co., Lockeford.

1st F. Stenzel, San Lorenzo, 540.24, 558.9.  
2nd, G. E. Trigg, Ferndale, 537.88, 553.3.  
3rd, Iver Iversen, Arcata, 519.99, 531.9.  
4th, J. W. Coppini, Ferndale, 502.27, 513.5.

2. For the highest average production of butter-fat during 10 consecutive months by a grade herd of more than 25 cows, headed by a pure-bred sire. Choice of an Ayrshire, Guernsey or Jersey bull calf, donated respectively by E. B. McFarland, San Francisco; W. A. Saylor, San Francisco; C. G. McFarland, Tulare, and of \$100 worth in pure-bred Guernsey or Hampshire males, donated by Dr. J. W. Henderson, Berkeley.

1st, Bohnett Bros., Campbell, 384.02, 401.56.  
2nd, J. M. Christen, Pacheco, 219.37, 242.29.

3. For two herds having the largest and next to the largest number of cows producing over 300 pounds of butter-fat in 10 consecutive months, two prizes, choice of a 2-unit outfit of the "Calf-Way" Milker, donated by the "Calf-Way" Milker Co., Chicago, and a 2-unit Sharpless Mechanical Milker, donated by the Sharpless Separator Co., West Chester.

1st, J. W. Coppini, Ferndale, 21 records over 300 pounds fat.  
2nd, G. E. Trigg, Ferndale, 15 records

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San Luis Obispo, Cal.

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the Following Stallions:

The Clydesdale Stallion,  
Chief Guardsman, 18756

Grand Champion in both open and State classes and winner of first premium in both classes, at State Fair, Sacramento, Cal., September, 1917.

The Percheron Stallions:

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School Boy, 117687

Director, 117686

and one unregistered stallion, foaled April, 1916.

The first three Percherons were exhibited at the 1917 State Fair, receiving five ribbons—Reserve Champion, First, Second, Third and one Third Premium Award.

To any one purchasing the unregistered stallion the opportunity will be offered for selecting such name as may be desired.

The above stock is second to none and an excellent opportunity is afforded for securing first-class breeders at reasonable prices.

This School now has more studs than it has use for in its course of instruction and for breeding purposes and for that reason the above are offered for sale.

Correspondence and inquiries solicited.

## California Polytechnic School

A State School of Agriculture, Mechanics and Household Arts.

San Luis Obispo, Cal.



over 300 pounds fat.  
4. For highest average production of butter-fat by 10 cows in a grade herd, five prizes (winner of first three cash prizes barred), choice of  
A No. 35 Iowa Cream Separator, capacity 850 pounds per hour, donated by the Associated Manufacturers Co., Waterloo, Iowa.  
A No. 5 Simplex Cream Separator, capacity 500 pounds per hour, donated by Baker-Hamilton & Pacific Co., San Francisco.  
A No. 6 Anker-Holth Cream Separator,



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**LARGE MILK YIELD**

**High % Butterfat**

**GOOD TYPE**

Can all be bred into your herd by a son of

**Dutchland Sir Pietertje Creamelle**

our herd sire, whose sire is Pietertje Hengerveld's Count De Kol and out of the great transmitting cow Changeling. His dam is a daughter of the former world's record cow Creamelle Vale, and is by a grandson of De Kol 2nd, the foundation cow of the De Kol family.

He has 14 A. R. O. daughters, records all made in our herd, with records up to over 30 pounds butter in seven days at three years. We especially appreciate the orders of dairymen who want good young bulls at modest prices. Write for prices and descriptions.

**F. STENZEL**

San Lorenzo California

**ABSORBINE**

TRADE MARK REG. U.S. PAT. OFF.

Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a **SAFE ANTISEPTIC AND GERMICIDE**

Does not blister or remove the hair and horse can be worked. Pleasant to use. \$2.50 a bottle, delivered. Describe your case for special instruction and Book 5 R Free.

W. F. Yenne, P.D.F., 244 Temple St., Springfield, Mass.

**FARMERS NOT A POISON**

**POWERFUL DISINFECTANT**

FOR CONTAGIOUS ABORTION

Most valuable in controlling abortion, brings on after-birth and treating barren cows. B.K. kills the infecting germs, heals the uterus, removes the slime and acid—no odor—no straining. More effective than lysol, Lugol's solution, carbolic and cresol—much safer. Send for our Bulletin 32, "Contagious Abortion," and testimony from leading breeders. For sale at your druggists.

General Laboratories—Madison, Wis.  
812 So. Dickinson St.

capacity 600 pounds, donated by Anker-Holth Mfg. Co., Port Huron, Mich.  
A M-2 Baltic Cream Separator, donated by the Empire Cream Separator Co., Bloomfield, capacity 300 pounds per hour.  
A No. 2 Primrose Cream Separator, donated by the International Harvester Company of America, San Francisco.  
1st, J. W. Coppini, Ferndale, 520.57, 532.86.  
2nd, Bohnett Bros., Campbell, 410.87, 430.35.  
3rd, J. M. Christen, Pacheco, 219.37, 242.29.  
5. For the highest average production of three cows in the same herd, 2½ years to 3½ years old at the beginning of the competition.  
A No. 15 De Laval Cream Separator, capacity 675 pounds, donated by the De Laval Dairy Supply Co., San Francisco.  
A. W. Morris & Sons Corp., Woodland, 644.03, 782.21.  
6. For the highest production of butter-fat during 10 consecutive months by a cow entered in the competition—5 tons of Larowe's Dried Beet Pulp offered by the Larowe Milling Co., Los Angeles, provided that if the winner of this prize consumed not less than ½ ton of Larowe's Dried Beet Pulp in her ration during the record period, the quantity to be awarded shall be increased to 15 tons.  
A. W. Morris & Sons Corp., Woodland, Miss Valley Mead De Kol Walker, 819.42, 966.92.  
7. For the highest production of butter-fat during 10 consecutive months by five cows in a herd, bred by the owner—three prizes; \$150 each for (a) pure-bred cows, (b) grade cows, (c) cows irrespective of their breeding—offered by the Country Life Department of the Sacramento Bee, Sacramento.  
(a) Pure-bred cows, A. W. Morris & Sons Corp., Woodland, 698.40, 789.65.  
(b) Grade cows, F. Stenzel, San Lorenzo, 603.20, 620.17.  
(c) Cows irrespective of their breeding, Iver Iversen, Arcata, 583.17, 601.81.  
8. For the highest and next to the highest production of butter-fat during 10 consecutive months by a cow in the Imperial Valley, two prizes, \$25 and \$15, offered by Barber & Thomson Co., Los Angeles.  
1st, \$25, F. H. Van Derpoel, El Centro, Fern's Silver Ray (J), 668.54, 668.54.  
2nd, \$15, E. H. Van Derpoel, El Centro, Fern's Lowland Lassie (J), 441.04, 441.04.  
9. For the highest average production of butter-fat by 5 cows in a grade herd, headed by a pure-bred sire, during each calendar month, November, 1916, to February, 1918, inclusive. A cash prize of \$25 a month, donated by the Pacific Rural Press, San Francisco.  
1916  
November, Napa State Hospital, 46.587.  
December, Bohnett Bros., 49.319.  
1917  
January, Abbott, K. W., 56.605.  
February, Napa State Hospital, 63.696.  
March, Kell, F. J., 71.050.  
April, Trigg, G. E., 82.372.  
May, Stenzel, F., 84.640.  
June, Coppini, J. W., 67.297.  
July, Trigg, G. E., 74.868.  
August, Iversen, Iver, 64.740.  
September, Coppini, J. W., 51.033.  
October, Iversen, Iver, 51.952.  
November, Trigg, G. E., 41.950.  
December, Beebe, Floyd, 46.199.  
1918  
January, Southern California State Hospital, 34.299.  
10. For the highest production of butter-fat for one year by herds belonging to a cow-testing association, three prizes, \$100 each for herds of (a) 10 to 25 cows, (b) 25 to 50 cows, (c) over 50 cows; offered by the California Cultivator, Los Angeles.  
(a) 10 to 25 cows, J. W. Coppini, Ferndale, 22 cows, 510.09.  
(b) 26 to 50 cows, Iver Iversen, Arcata, 37 cows, 498.73.  
(c) over 50 cows, W. Terkelsen, Ferndale, 53 cows, 420.46.  
11. For the highest production of butter-fat by a grade cow for each month during 1917; a cash prize of \$10 a month, offered by McAlister & Sons, Chico.  
1917  
January, Napa State Hospital, 81.605.  
February, Stenzel, F., 66.900.  
March, Kell, F. J., 84.522.  
April, Stenzel, F., 93.056.  
May, Napa State Hospital, 97.183.  
June, Trigg, G. E., 80.460.  
July, Trigg, G. E., 98.332.  
August, Coppini, J. W., 71.027.  
September, Trigg, G. E., 65.146.  
October, Iversen, Iver, 57.103.  
November, Iversen, Iver, 57.103.  
December, Beebe, Floyd, 56.544.  
12 A. For the highest average production of butter-fat during 10 consecutive months by four cows in a Stanislaus County herd: Four prizes of \$40, \$30, \$20, and \$10, the first prize being open to pure-breds and grade cows, the others to grade and common cows only, offered by Modesto Creamery, Modesto.  
1st, \$40, J. M. Bomberger, Modesto, 497.69, 497.69.  
12 B. For the highest average production of butter-fat by a herd in the Ferndale Cow-Testing Association that was not tested prior to January 1, 1917; a pure-bred Jersey bull calf out of a Registered-Merit Cow, offered by J. W. Coppini, Ferndale, Cal.  
F. J. Dalton, Ferndale, 365.0  
12 (b) For the highest average production of butter-fat by ten cows in a registered pure-bred herd, covering a period of ten months; offered by the Livestock & Dairy Journal, Sacramento.  
One prize, \$100, A. W. Morris & Sons Corp., Woodland, 588.75, 565.62.  
13. For the highest production of milk during 10 consecutive months by a cow irrespective of her breeding; a silver trophy donated by Scott, Wagner & Miller, San Francisco.  
A. W. Morris & Sons Corp., Woodland, Hartog Creamelle DeKol, 24201.7.  
14. For the highest records of a registered Jersey cow and by 10 cows in a grade herd, sired by a registered Jersey bull; two cups offered by the American Jersey Cattle Club, New York City.

1st, University of California, Interested Jap's Santa, 703.37, 759.64.  
2nd, G. E. Trigg, Ferndale, 557.36, 580.54.  
15. For the highest records by a registered Guernsey cow and by 10 cows in a grade herd, sired by a registered Guernsey bull; two trophies offered by the American Guernsey Cattle Club, Peter-

boro.  
1st, W. H. Dupree, Santee, Jenebel of Edgemoor, 632.14, 783.85.  
2nd, Hollow-Hill Farm, Cotton, 475.34, 494.35.  
16. For the highest records by a registered

Continued on Page 351

## Production and Type



You can breed both type and production into your dairy herd if you use one of our good young sons of

### Prince Riverside Walker

His sire, Prince Gelsche Walker, has one world's record daughter and several have broken California State records, and his daughters are also noted as a group because of their great dairy capacity, well balanced udders, and good teats.  
His dam, Aaggie Acme of Riverside, is also the dam of the world's official yearly record butter cow, Aaggie Acme of Riverside 2nd. She is a cow of tremendous capacity, a beautiful udder, and has transmitted her quality to her offspring.

The young sons and daughters of PRINCE RIVERSIDE WALKER are of extra good type, and they can not fail to keep on the great production to which they are bred. We have only a few of his young sons left. They are priced moderately at figures any dairyman can well afford to pay, and they are straight, well marked young fellows out of good dams. Come and see them, also their sire and dams, or write for prices and descriptions.

Our Entire Herd is Tuberculin Tested

## Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

### Blood Will Tell

PRINCE ALCARTRA KORNDYKE must transmit great production, it's in his blood on both sides. His sire, Korndyke Queen De Kol's Prince, who has six A. R. O. daughters with records up to 35.10 pounds butter in seven days, and her dam in turn is the great Belle Korndyke, four A. R. O. daughters, who is the dam of the mighty Pontiac Korndyke, the greatest transmitting sire the breed has produced.

The dam of PRINCE ALCARTRA KORNDYKE is Tilly Alcartra, 40.78 pounds butter in seven days, the only cow that has both a 40 pound seven day record and over an 1100 pound yearly record, and she is by Alcartra Polkadot Corrector, son of the great foundation cow Alcartra Polkadot, who has five A. R. O. daughters, two of them above 33 pounds, and another above 31 pounds.



The first five daughters of PRINCE ALCARTRA KORNDYKE to compete yearly test as two year olds, average 15,333 pounds milk and 675.92 pounds butter. If you want to breed big dairy producers put one of his sons at the head of your herd. We can sell you a good one at a price you can afford to pay.

The J. S. GIBSON CO.  
Williams, Cal.

## Santa Anita Rancho

Anoakia Breeding Farm

## Registered Holsteins

Our senior herd sire is MERCI LAD KORNDYKE BURKE, son of De Kol Hengerveld Burke and Winnie Korndyke Cornucopia De Kol, 31,034.14 pounds milk and 1201.06 pounds butter in one year, the first cow in California to make over 1200 pounds butter in one year.

He is acknowledged one of the best individual sires in the west and is transmitting his type to his offspring in a wonderful degree. A limited number of his young sons out of good record dams are offered for sale at moderate prices. Inquiries or orders by mail will receive prompt attention.

SANTA ANITA RANCHO, Santa Anita, Cal.

W. H. Taylor, Supt.

Anita M. Baldwin, Owner

## —Just the Bull You Need—

### A Son of King Mead of Riverside

To increase your herd production and improve its type and markings. He is a nice one, ready for service, straight, deep-bodied and three-fourths white. Remember that King Mead is in the front rank as a sire of great yearly record cows, and no other bull of the Holstein breed has transmitted as high per cent of butterfat.

The dam has a record of 818.36 pounds butter and 20,144 pounds milk in a year. She has two sisters that average 1110 pounds butter and 28,817 pounds milk. She is a daughter of Ignaro De Kol, the only bull in the world with ten daughters that have each produced 20,000 pounds milk in a year. You will miss a golden opportunity if you overlook this one. The price is within the means of any progressive dairyman.

A. W. MORRIS & SONS CORP.

Woodland, Cal.



# Kirkman Nurseries

Established 1888

## Wholesale Growers of High-Grade Nursery Stock

DECIDUOUS AND CITRUS FRUITS

OLIVES AND GRAPE VINES SHADE AND ORNAMENTAL TREES

Twenty-nine years of continuous and consistent service to the West-ern fruit growers.

There is a shortage of trees this year. To make sure of getting just what you want, place your order now.

Address Main Office

2522 Tulare Street  
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Since  
1902

## Pomona DUPLEX-PLUNGER Pumps

One Pump Will  
Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right"  
Irrigation Gates and Valves

PRICES RIGHT—QUALITY RIGHT  
SEND FOR BOOK C.

Pomona Mfg. Co.  
POMONA, CAL.

### Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines

The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water.

Send for Copy of the Water Watch  
Hydrometric Co. 955 North Main St.  
Los Angeles, Cal.

San Francisco recently held a great automobile show.

## Ornamental Garden Notes

Written for California Cultivator by Ernest Braunton

### Just Thickets

In England a popular feature of large places is a shrubbery walk. It is the only place in a garden that paths are permitted that are not really necessary. I believe I built the first one in Los Angeles, to mask some houses too close up to the garden I had in charge. You may lay out a rambling series of paths, doubling back on themselves, crossing over without very definite direction and leading nowhere in particular. Yet have the curves graceful and paths far enough apart so one will not be seen from another, and in "doubling back" leave a core or central plantation wide enough for a thicket. Now plant along these paths and between them, using several of each kind of shrub in a place and all of that kind in the one place. Some may be dwarf trees, some dwarf shrubs. Don't have too much design or spacing but plant naturally or carelessly (in effect).

### Live in the Garden

In California we should live much out-of-doors. I do not have in mind camping, motoring, hunting, fishing or golfing, but simply staying at home. Here we may stay out in the garden nearly every day in the year, and yet the average local garden is not planned with that end in view; not as much so as the average garden of the far Eastern states. You of the rural districts do not need "excursions" to gain fresh air or out-door life; have your garden habitable. Also have your porches large, comfortable, and secluded, yet light and airy. Don't have anything cramped about a rural home or you may as well go to the city where you cannot have things otherwise. Have arbors, garden-houses, covered seats, shaded seats, hammocks, secluded grass plats—everything that will provide ease and comfort out-of-doors in all sorts of weather.

### Do Not Train and Prune

The rural garden plants should not be trained and pruned as they usually are in all gardens. I positively hunger, betimes, for a path where shrubs or low trees have grown together over a path, yet none will permit them this simple, perfectly natural tendency. Every plant, seemingly, is told to "stay on your own side of the road" or path and is strictly "herded" with that end in view. I call to mind old gardens far beyond the Rockies where lilacs, syringas, dogwoods, bush honeysuckles and the like grow year after year, without care, direction, or restriction; just like being "out in the woods." Why do we not have such gardens in California? Many of the shrubs named grow in clusters so that they interlace over one's head and the only pruning done is that with a view of having reasonably clear headroom when wandering about. The rural garden should smack of such simplicity and lack of training everywhere.

### Grow Common Plants

Do not plant many rare untried plants except in small herbs that are but incidentals. Though long recognized as an expert plantsman and acquainted with nearly all we grow I am weary of striving for the unnatural, this ceaseless coddling and pampering to coax a plant into some semblance of natural vigor. The subjects should be treated as a business matter is; if the upkeep exceeds the income it is a

failure; sell out or shut up the shop. After I have done everything possible for a plant for two or three years and it still is sickly or unproductive, out it must come. One gets as cold and uncharitable towards such plants as he does towards the grouchy confirmed dyspeptic among humans. Let us use plants that are tried and true so that both ourselves and the garden may appear cheerful, and not feel reproached by the plants because they are out-of-sorts. We garden, or should do so, for pleasure.

### Summer Mulching

More and more am I coming to believe in summer mulching. I get the best results from crops where mulches are used and no cultivation is given. With no crop is this method productive of better results than with my favorite gladiolus. After 15 years of constant experiment I shall use no other method in ordinary garden soil. It will hold as good with roses and other vegetation; the best roses I ever saw were in adobe soil of almost unworkable texture. The soil was very rough and lumpy and was covered with four inches of strawy stable manure. The watering was done with sprinklers but it was well done, no mere sprinkle, but an hour or hours at each setting. All summer one could walk in on dry straw and pick roses; a genuine success. Irrigation and cultivation could never do more; but all the work was thorough and the mulch a most generous one.

### Root-prune All Trees

Unless your soil be deep and loose surface root-pruning should be practiced. It may be best in any and all cases, especially with some trees, acacias for example. Nearly all species of acacias are surface-rooters in any soil, the blackwood excepted. One year after planting the soil should be dug away from around the trunk and all roots within one foot of the surface cut off smoothly close to the trunk. At two years cut them off in the upper two feet. After this they should care for themselves in the matter of root control. Large and sufficient roots should have been put out at lower levels. If, however, there are signs of recapture of top soil, trees should be examined and roots intruding in surface soil cut off. Such treatment renders trees more resourceful, prevents robbing of surface crops, and in street trees protects curb and sidewalk from rupture.

### FLOWER GROWER

Madison Cooper of Calcium, New York some four years ago started the "Modern Gladiolus Grower." It has appeared regularly and with increase in beauty and value of matter in its columns. It now begins the fifth year greatly enlarged in size and scope and under the title, "Flower Grower." The publisher says: "It is our aim to print facts and information of permanent character rather than news items." However, we doubt not the paper will keep in touch with the larger movements along amateur and professional flower producing line.

Complete reports for 1917, secured by the United States food administration, give the total pack of canned tomatoes as 15,076,074 cases of two dozen cans each. This is the largest amount packed since 1914 and is equivalent to more than three cans of No. 3 size for every person in the United States.

# 1918 Catalog

READY  
FOR  
DISTRIBUTION

It Is Free



Valley Seed Co.

5th and Jay Streets  
Sacramento, Cal.

We Pay the Freight

## "THE BOSS" TREE PROTECTOR

Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

### Prices

	Per 1000
10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

Yucca Manufacturing Co.  
1380 Willow Street, Los Angeles, Cal.

### Waterloo Boy Tractor



A high grade 12-25, two-speed, three-pow, one-man tractor. Has Hyatt Roller Bearings throughout; enclosed motor; dust-proof gears, bearings and wheels; automatic oiling system; easy accessibility of working parts. Start Right—Start Early.

Send for Catalogue.

W. L. CLEVELAND CO. 211 N. Los Angeles St., Los Angeles

NAIL  
THEM

You Can't Puncture 'em

Service Tubes are like other pneumatic tubes, except they're puncture proof. Drive right over tacks or nails; simply pull them out. No leaks! With Service Tubes you can travel

6,000 Miles  
Without a Leak!

Inflate as usual. Tire guarantees not interfered with. Service Tubes cost only few cents more than ordinary tubes. Shipped prepaid on approval. Write for complete Tire and Tube Catalog. State also used.

SERVICE AUTO  
EQUIPMENT COMPANY  
241 Traders Building  
Kansas City, Missouri

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.



## GENERAL FAVORITES

The hydrangea group are favorites with all and generally are well known, more especially the one called hortensis, or "Hortensia." While classed as deciduous shrubs, in warm locations some are evergreen. Hydrangeas produce a heavier flower crop than any other shrub; hence, their



Hydrangea

universal popularity. They may be had in pinks or whites, or if blue is desired a liberal quantity of iron filings, rusty nails or any form of iron rust in the soil will change the flowers to blue. These shrubs are for full or partial shade and do not thrive so well in full sunshine. They are partial to rich deep soil and enjoy a copious supply of water at all times. They are so aristocratic in appearance as to be decidedly front yard favorites with all who plant them.

## DURANGO IN IMPERIAL

Desiring information as to the contemplated planting of Durango long staple cotton in Imperial Valley this season, we wrote the Imperial Valley Long Staple Cotton Growers' Association, and President Argyle McLachlan answers:

"On account of the excessive damage sustained by the long staple (Durango) cotton last season from water shortage the acreage of this variety of cotton will in all probability be reduced this season. However, there will be approximately 20,000 to 25,000 acres planted on both sides of the international boundary. Our association has sold a total of 56 tons of Pima-Egyptian cotton seed to about 130 growers. The acreage planted to Pima cotton will be from 4000 to 5000 acres. There is not at present any seed remaining for distribution to other sections in the state from the quota of seed allowed us by the Tempe people but there is a bare possibility that there may be some left over in the hands of the Winterhaven Commercial Company at Winterhaven, this county. This company secured seed from Tempe the same as ours.

"The cotton market at present is not very satisfactory because of the slowness of sales. However, we expect improvement in demand and are at present consigning much cotton to New Orleans to have it in the market for delivery when the market improves."

## GOVERNMENT POTASH PLANT

The government plant at Summerland, started as an experiment to demonstrate the possibility of salvaging potash from giant kelp on a commercial scale, has already proved a success.

F. W. Brown, in charge of the office of fertilizer investigations, bureau of soils, United States department of agriculture, has returned from an inspection trip much pleased with the way the plant is working.

He found the plant running as far as the production of kelp char which contains potash. This has to be leached out, evaporated and crystallized. The evaporating and crystallizing machinery has not yet arrived at Summerland. It is on the way, and Mr. Brown expresses confidence that the

entire process will be carried out within a few weeks all within the government plant.

In the meantime the kelp char is being sold, and the dried kelp, in sufficient quantities to pay the operating expenses of the plant.—American Fertilizer.

## Paint on the Farm

**T**HERE is no investment on the farm that will compare with paint, suggests the editor of Twentieth Century Farmer. A few dollars invested in paint and properly applied to the buildings adds more to the appearance, attractiveness and general desirability of the farm as a place to live, a home to own or as an investment, than ten times—yes, often 50 times—this expense in any other line of improvement that can be added to the farm. What are your impressions when you travel through a farming district on railroad or by other conveyance and your attention is brought to the old, weather beaten barn, the unpainted dwelling and the other buildings of lesser importance, all dingy, weather-worn, dull, unpainted?

There is but one impression and every person who sees these conditions on the farm is similarly impressed—"the home of a careless, shiftless farmer, a man without pride or

an ambition to be up to date." This is the verdict every time.

On the other hand, what impression is created by the nicely painted buildings, everything on the farm in clean, bright colors—barns, stables, sheds, hog houses, wagon sheds, implement and tool houses—everything, in fact, brightened up with a little paint? It did not cost much for the material and nine chances out of ten the farmer painted all these buildings himself, except perhaps the dwelling. Such places are attractive; they are admired for their clean, homelike appearance; they tell the kind of citizenship and character of the owners. Land with such improvements has ready sale, and a neighborhood peopled by such a class of farmers is a desirable community to live in.

It is the best investment any property owner can make, be he a resident of village, town or farm. Buildings will last almost indefinitely if kept painted, given a coat every three or

four years. There are many brands of mixed paints that are advertised, guaranteed, warranted to wear and not blister or scale off. These paints are put up in gallon cans and are all ready to be put on and can be applied by anyone who can spread whitewash. The farmer should have a work shop and be, as the saying goes, "a jack of all trades," and not necessarily the master of any but farming. The farmer of today should be able to do repairing in many lines of work. It is folly to run off to town for all the little breaks that are sure to occur on the farm from time to time.

Paint up; get on the bright side of life and show your colors! Paint everything; don't leave a gate or gate post that is not brightened or freshened up with some good color. It adds value to the appearance of the farm that means hundreds and often thousands of dollars in its sale.

## REPORT TREASONABLE ACTS

Commissioner Hecke is requesting county horticultural commissioners to report any treasonable activities which may be discovered. The following suggestion is made by a special agent of the department of justice:

"The department of justice is doing everything in its power to assist in combating the sabotage program of the I. W. W.; and we shall be very glad to have you report to us all instances where it seems reasonably certain that destruction is wrought by members of the I. W. W. organization on either crops or buildings. It is only by closest cooperation of all parties interested that we can hope to cope with the situation."

## BEST IN THE LONG RUN

# Trust a Trustworthy Brand Mr. Farmer

**EX**PERIENCE has taught agriculturists to trust standard products. A name and a brand, backed for years by good service of the goods and good faith of the maker, mean security in purchase and security in service. They safeguard against deceitful appearances.

Appearances were never more deceiving than in tires. Your surety in tires is the name and brand of Goodrich; for Goodrich, the oldest and largest rubber factory, has meant the *best* in rubber since the harvest days of the old "Buffalo Pitts" thresher.

Goodrich tires mean to-day all Goodrich rubber has ever meant. The farmer can put his trust in Goodrich whether he is buying tires for his automobile, large or small, tires for his trucks, or motor cycle, or bicycle tires. He gets the sure service of—

## GOODRICH TESTED TIRES

Here is proven service, and it means guaranteed service in miles for your money. Here are tires that withstand the gnawing of the road between your farm and the town, because they are tires that have fought the teeth of the road in every section of our country, and won with phenomenal mileage.

Goodrich Test Car Fleets have tested Goodrich Tires for a year against all sorts of roads, and in all sorts of weather, and have proved their dependability, mileage and economy.

Put your faith in Goodrich Tires, whatever type of tire you need, for "America's Tested Tires" are worthy of your faith. They will save you time and money and give you comfort in return for your trust.

**THE B. F. GOODRICH RUBBER COMPANY**  
**THE CITY OF GOODRICH · AKRON, OHIO.**

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W.S.S.

Deliver your individual blow by eliminating your defenders' needs. Buy Thrift Stamps. On sale at every Goodrich Branch and Depot



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### TREES

**A. R. Rideout**, professional avocado budder. I will bud over your worthless avocado trees to standard varieties, Lyon, Fuerte, Bartley, Sharpless, Sinaloa or any other kinds desired. I guarantee my work. Not a dollar down until the buds start to grow. A. R. Rideout, Rideout Heights, Whittier, Cal. Phone 4971.

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Eureka Walnuts are the Best**—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alhambra St., Alhambra, Cal.

**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons, Eureka and Villa Franca, also Washington navel; also several hundred Valencia on sweet root. We call these good trees and we know whereof we speak. **ALBERT JACKSON**, Inland, Cal.

**For Sale**—25,000 2 year old uncultured citrus trees, (Navels, Valencia, Lemons) positively of the very highest pedigree quality, must be removed from young orchard this season. Price attractive. Write for information to John Hinkle, Lordsburg, Cal.

**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References: R. R. Morris, E. J. Whittier, Cal.

**For Sale**—Citrus trees all varieties. Very fancy stock, selected buds, grown at San Dimas. Splendid strong root system. Prices right. Smith Citrus Nurseries, 816 Washington Bldg.; Phone 60463, Los Angeles.

**Walnut and Almond Trees**—Mayette, Franquette, Concord, and Willson Wonder on Northern California Black root. Texas prolific and Drake seedling almonds on almond root. Stock is first class, cannot be better. Write for prices. Ekstein Nurseries, Modesto, Cal.

**For Sale**—Valencia Orange and Marsh grapefruit trees. Stock propagated only from Performance Record Trees of best type. Trees that will bear and insure profits. Write today. L. V. W. Brown, Riverside, Cal.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell** is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon trees** one year past, ½ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**For Sale**—3000 A1 grade extra large 2 year old late Valencia orange trees, 3500 Lisbon lemon No. 1 stock 2 years. Price reasonable. Los Nietos Valley Nursery, Downey, Cal. Phone 692.

**For Sale**—We still have a good selection of grafted Eureka Walnut trees for sale. Extra select lot of scions was used on northern black roots. Address C. W. Story, Rivera, Cal. Whittier Phone 4721.

**For Sale**—Eureka walnuts 3 to 4 ft. 4-6 feet and 6-8 feet all on first class California black root stock. Prices reasonable. Los Nietos Valley Nursery, Downey, Cal. Phone 692.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574. Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**Bartlett Pears**—French prunes, Standard, Appies, Cherries, Quinces, Plums, etc. No agents, save 50 per cent. Lafayette Nursery Co., Lafayette, Oregon.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. I. T. Schwabacher, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John I. Preston, Anaheim, Cal. Home 1472.

**Florida Sour Orange Seedbed Stock**—Clean, straight and very vigorous. Performance Record Citrus Trees. F. H. Nushickel, Glendora, Cal. Phone 388.

**Apricots, Olives, English Morello Cherries and Arizona Ash.** First class trees. C. E. Mover, Hemet, Cal.

**Budded Avocados**—All leading varieties. Address Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, Cal.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park Cal.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsurki, 23rd St. Inland, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale. Inspection invited.

**Budded Orange, Lemon and Grapefruit trees**, 2 years old. K. Niwa, Box 308, Glendora.

**For Sale**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, Cal.

### TREES

**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**For Sale**—Budded avocado trees, Lyon, Fuerte, Sharpless, etc. Lyon and Sharpless budwood for sale. Buds out from bearing Lyon trees. Every tree field grown, boxed and established. At home every Saturday. Advisable to phone or write for an appointment any other day in the week as I am away budding quite a bit of the time. Do not come on Sundays. A. R. Rideout, Rideout Heights, Whittier, Cal. Phone 4971.

**Citrus**—7000 Navels, Valencia, Eureka Lemons, two and three years. Located Whittier and Glendora. 10,000 one year Villa Franca, Lisbon, Eureka and Seedless Lemons. Located near San Diego. Clean thrifty stock. Our own budding, buds cut from record trees. You will not make a mistake in ordering this stock. Cyrus W. Wilhite, Citrus Nurseries, Glendora, Cal. Home 303.

**Must be Sold**—8000 Valencia orange and Eureka lemons, strong healthy stock, two and three year buds, sour roots. Special prices on orders of 500 or more. Opposite grammar school, Montebello. Tel. Boyle 3311 or address L. F. Thurston, R. D. 3, Orange. Tel. 3514.

**For Sale; Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencia and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110, Los Angeles.

**Olive Trees**—Three years old this spring. Stock taken from record-bearing grove. 3000 Manzanillo; absolutely no finer nursery stock to be had in California. Stock located near Redlands. Prices reasonable, mailed on request. J. A. Burke, 612 Black Building, Los Angeles.

**For Sale**—The famous Tucker Franquette walnut. Splendid stock at prices you can afford. Closing out account land changing hands. Write for prices. J. D. Tucker, Proprietor, Weed Patch Nursery, 832 19th St., Bakersfield.

**For Sale**—Large stock clean apricot trees, 1916 May buds at 20 cents, also 1917 May buds 3 to 4 feet at 15 cents, two year old roots. Packing to order extra, prompt delivery at Moorpark. Phone S-1-F-22. A. Everett, Moorpark, Cal.

**For Sale**—200 peach trees, 4-6, Tosetti November variety. Yellow flesh, very late, grown for me by originator, J. H. O'Connor, 709 Merchants Trust Bldg., Los Angeles, Cal.

**Mission and Manzanillo Olive trees**, all sizes and prices sure to satisfy. Write us at once for any amount. We want to sell. Imperial Valley Nursery & Seed House, El Centro, Cal.

**For Sale**—First Class Phillips and Tuscan Cling peaches, Eureka and Placencia Perfection walnuts, also apples, pears, plums, etc. Orange County Nursery Co., Anaheim, Cal.

**For Sale**—Orange seed and seedlings, budded citrus and avocado trees. Paul B. Magee, Colorado and Huntington Drive, Pasadena, Cal.

**Eureka Lemons** cheap to clean up. They show their fruit buds, no better trees grown. H. Clements, Glendora.

**For Sale**—1000 first class Eureka lemon trees, ¾ to 1½ inches. Free from scale. Peter Arth, Redlands, Cal.

**ENTER YOUR ORDER FOR EUREKA WALNUT BUDS NOW**—E. HOLVE, BOX 96, FULTON.

**Budding**—Citrus, Avocado. Paul B. Magee, Colorado and Huntington Drive, Pasadena.

**For Sale**—Citrus trees and seed stock. B. C. Dodson, Glendora, Cal.

### MISCELLANEOUS

**Famous Hairy Peruvian Alfalfa Seed**—Highly recommended by U. S. department of agriculture. Only carefully selected seed shipped. Prices and samples gladly furnished on application. E. F. Sanguinetti, Yuma, Arizona.

**Why Allow Noxious Weeds and grass to grow?** Kill Weed will eradicate them. Conserve the plant food they use. One gallon trial order \$2.50. Kill Weed Company, Sacramento, Cal.

**Fancy and Extra Fancy Moorpark Apricots** for sale, any quantity, 25 pounds and up. Processed or natural. P. F. McKinney, Box 103, Route "C," San Jose, Cal.

**Tobacco Stems** for sale, 1 cent a pound in 100 pound lots or over. Max Roth, Cigar Co., 548 S. Los Angeles St., Los Angeles.

**Grafting and Covering Wax**—No heating required. Put on with a brush. Sample 50 cents. Paul Kruger, Watsonville, Cal.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Quality Trees**, Seed Potatoes, berry plants, seeds, milk goats. Cash Nurseries, Sebastopol, Cal.

### GEESSE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alpaugh, Cal.

### WANTED

**Wanted**—Working foreman with executive ability, able to adjust self quickly to new working conditions. Clean, energetic, active, close attention to detail. Life experience with farm operation and machinery. Good with horses and mules. California irrigation experience desirable. Permanent position and good pay to right party. **HAVEN SEED CO.**, Santa Ana, Cal.

**Wanted**, from one span to 50 head of good blocky mules, weights from 1150 pounds and over; do not want anything more than six years old, prefer four years old. Address E. F. Sanguinetti, Yuma, Arizona, stating price.

**Ranch Foreman**—American, married, not subject to draft, no children. The San Diego Land Corporation, 402 Southern Title Bldg., San Diego, Cal.

**Wanted**—Position to take charge or manage orchard, by experienced orchardist of 15 years California experience. A. E. Baker, Dos Palos, Cal.

**Wanted**—200 2½ gallon Golden State Orchard Heaters. P. F. McKinney, Box 103, Route "C," San Jose, Cal.

**Wanted to hear from owner of farm or unimproved land for sale.** O. K. Hawley, Baldwin, Wisconsin.

### POULTRY

We can furnish you with White Leghorn chicks from guaranteed heavy laying stock at very reasonable prices. Big money raising chickens and eggs. White Leghorns make broilers in ten weeks; pullets lay at five months. **WE GUARANTEE** safe delivery of all chicks to destination. Shipped safely anywhere west of the Rockies. No money in advance; pay on delivery. **SPECIAL PRICE** on 500 and 1000 lots. Finest hatchery in the world. Established over 20 years. Further information, write **MUST HATCH INCUBATOR CO.**, 418 Seventh St., Petaluma, Cal.

**Baby Chicks**, Ancona, Rhode Island Reds, \$14.00 per 100, Barred Rocks, \$17.50. MacFarlane Quality White Leghorn, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. Agent for Poultrymen's Co-Operative Association. Incubator catalogue mailed free. D. E. Doke, 743 So. Los Angeles St., Los Angeles.

**For Sale**—Pure Strains baby chicks from selected flocks, White Leghorns, R. I. Reds and Barred Rocks; hatches every week, order filled in rotation and shipped anywhere. Also Buckeye and Jubilee Incubators and Brooders. Stiles Poultry Supply Co., 645 G Street, San Diego.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Thoroughbred B. Rocks** exclusively. Hen record 190 eggs in 10 months. Trap-nested, pedigreed matings for 1918, Pen 1, \$2.50; two \$1.50 per 15 eggs. Baby chicks, March and April 25 cents, limited number. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, Cal.

**For Sale**—Anconas the most popular breed today. "There's a reason." Small eaters and heavy layers of large eggs. Five breeding pens. Eggs of guaranteed fertility \$1 per 15; \$6 per 100. A. E. Nelson, El Monte, Cal.

**Huddleston Blue Andalusians**, great winners and laying strain. Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**Petaluma Hatchery** can ship day old chicks to points reached in three days. Why not have the best? We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders for White, Brown or Buff Leghorns**, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery, Watsonville, Cal.

**For Sale**—Barred Rock, R. I. Red and White Leghorn chicks. Reduced prices. Fine stock. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain), Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Baby Chicks** (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

**Baby Chicks from Forney's famous heavy laying strain of Single Comb White Leghorns.** \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**"Eastman's Bred-to-Lay" Hoganized**, Trapnested Barred Plymouth Rocks, April chicks, eggs. Fairmead Poultry Farm, Fairmead, Cal.

**White Wyandotte eggs** for hatching from fine breeding pens. Can't be excelled for winter layers. J. W. Nicholson, Wasco.

**Famous Ferris White Leghorns**—Standard of quality. Guaranteed eggs and chicks at let-live prices. Hanscom, Escondido, Cal.

**Baby Chicks**—Ancona, R. I. Reds, \$15 per 100. White Leghorns, \$12 per 100. Eggs for hatching. A. B. Chamberlin, Box 189, Route 2, San Jose, Cal.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynier, Lathrop.

**Famous Tom Barron White Leghorn eggs** \$2.00. E. F. Barclay, Lindsay, Cal.

**"Barclays Barred Beauties"**—Grand exhibition cockerels, cocks and eggs. G. S. Barclay, R. A. Lindsay.

### POULTRY

**White Leghorn Baby Chicks**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. \$11.00 per 100. Lyon Hatchery, Gardena.

**Your Opportunity**—Half price eggs sale. Big profit now raising our 200-290 egg Leghorns, Wyandottes, Anconas, Red Rocks, Minorcas, Orpingtons, Branmas, ducks, geese, turkeys. Thousands chicks, eggs weekly, reasonable. Laying pullets hens. Males half price. Many repeat orders. Hundreds customers making money. One cleared \$617 on 110 hens last year. James Beeson, Pasadena, Cal.

**Baby Chicks & Eggs For Hatching**—from pure bred McFarland strain White Leghorns, carefully culled and Hoganized for heavy egg production, shipped on approval, \$10.00 per 100, special price in lots of 500 or more. Sonoma Valley Hatchery & Poultry Yards, R. 2, Box 48, Sonoma, Cal. Write for booklet.

**Baby Chicks and Eggs**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$11.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Model Poultry Farm, White Leghorn Specialists**, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Baby Chicks**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Spring Chicks**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks, \$12.50 per 100; \$11.00 per 1000. H. A. Schlotthauer, Exeter, Cal. Route A.

**White Leghorns**—White Rocks—Highest class of thoroughbred stock. Chicks, Leghorns, \$15.00 per 100. Rocks \$20.00 per 100. Eggs \$2.50 per 15. \$10.00 per 100. Eggs from special pens of high class exhibition type \$5.00 per 15. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

**Baby Chicks**—Leading varieties. We guarantee safe arrival and full count; strong vigorous chicks from the finest flocks of free range stock in this country. 1918 price list and instructions on care of baby chicks, if you mention this paper. Lasher's Hatchery, Petaluma, Cal.

**For Sale**—Baby chicks from fine thoroughbred heavy laying stock. White Leghorns, 100, \$12.50. Rocks and Reds 100, \$15.00. Hatching eggs 15, \$1.25, 100, \$6.00. McConnells Black Minorca eggs, 15, \$1.50, 30, \$2.50. Bronze Turkey eggs, 12, \$4.00. W. H. Rails, Orange, Cal.

**Baby Chicks** from my vigorous heavy-laying strain of First Prize winning Anconas, \$18 per 100, \$80 per 500. Hatching eggs \$1.50 a setting, \$7.00 per 100. Kaj Paulsen, Route F, Fresno, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

**Hatching Eggs**—S. C. White Leghorns. Bred-to-lay Hoganized birds from Pine Tree Strain. Fertility guaranteed. Eight years established and still growing. Address Pine Tree Farm, "C," Los Gatos, Cal.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns**, "Quackless" White Muscovy dux, White Embden goslings, stock, eggs and babies. Stamp for prices. White Star Hatchery, Kerman, Cal.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**For Sale**—Rhode Island Red baby chicks from our carefully selected matings, \$14 per hundred. Williams Poultry Place, 236 No. Gage, Los Angeles.

**White Leghorn chicks and eggs**, best strains, low prices, large plant. Free catalogue and price list. Newton Poultry Farm, Los Gatos, Cal.

**Hatching Eggs** from high class S. C. Anconas, \$1.50 per 15; \$7.00 per 100. Eggs from specially selected pens, \$2.00 per 15. H. A. Loud, Winters.

**White Leghorn Baby Chicks**—Strong and healthy for particular people, from Hoganized heavy laying mature fowls. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

**Baby Chicks**—C. A. Gray Hatchery, Le-moore, Cal. S. C. Brown Leghorns \$12.50 per 100. S. C. Rhode Islands \$15.00 per 100, one-fifth down with order.

**Buff Orpingtons, Buff Ducks, Bourbon Red Turkeys.** Hatching eggs; baby stock; mating list. The Ferris Ranch, S. Reservoir, Pomona, Cal.

**Trapnested White Leghorns**—Official 200 egg records, also eggs from above \$2 per 15, \$8 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

**Pit Games, Reds, Blues, Grays**—Cocks, stags, hens, eggs. R. H. Crane, Route 3, Santa Rosa.

**Buff Leghorn Eggs**—\$1.50 per 15, \$5.00 per 100. Mrs. H. W. McClure, Glendale, Arizona.



## HOGS

**The Billiken Brand of Chesters**—The easy feeders and the money makers. The future outlook for hogs was never so good before. Am offering a few fall sows, bred to farrow their second litters in May. Some extra nice spring glits bred to farrow in June. Fall pigs, both sexes. Write now for prices; immediate delivery. C. B. Cunningham, Mills, Sacramento County, Cal.

**Grape Wild Farm Berkshires and Guernsey Bull Calves**—Only a few more boars left from 6 months to a year old, sired Grand Leader 2d, the Grand Champion of the world. Also a few of the tops from our fall litters by Royal Superbus and Fashion Longfellow 27th, and a few bred glits. Our herd won the Premier Breeder's Ribbon at the P. P. I. E. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

**Bernsteins Herd**—"One of the Best in the West" has three great herd boars. King's Big Bone Leader, Young Jumbo, and King's Massive Orange. Watch for the sensational offering of sows bred to this great trio which sell in the Big sale of the Kings' County Poland-China Breeders at Hanford, February 20. Bernsteins Ranch, Hanford, Cal. W. Bernsteins, Proprietor.

**Improved Jerusalem Artichokes** produce twenty tons to the acre. The great hog feed for the winter months—the hog does the harvesting. 18 pounds for \$1.50 postpaid to and including third zone. 98 pounds for \$5.00 f. o. b. Niles. 1000 pounds and over at 4 cents per pound. California Nursery Co., Niles, Cal.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Duroc-Jerseys**—Sold out of bred glits. Two service boars. One of them an outstanding individual for sale. Also Fall Pigs, both sexes. Twenty-three ribbons on 11 entries, including 6 championships, State Fair, 1917. Frederick M. Johnson, Napa, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gl's sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weigh's and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Copro (Made from coconuts)**—Best hog-feed. Your dealer, or Lee Chamberlain & Co., Los Angeles, Cal.

**Duroc-Jersey Boar 10 months old**. Sire state grand champion, 1000 hog. Dams side champion also. Excellent all round. Large forage. Life immune from cholera. A bargain. Also immune pigs. Garden City Sanatorium, San Jose, Cal.

**Durocs**—An extra fine registered Crimson Wonder gilt for sale. Bred to Gold Model boar. W. M. Taylor, R. D. 1, San Bernardino, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**Recorded Poland-China** boar, 18 months old, sired by Superba. Bargain at \$50.00. Immured, and tried breeder. C. R. Hanna, Riverside.

**PLW Durocs**—Golden Models and Great Wonders are the most consistent winners at every show. Peters, Lamson & Walker, Devore, San Bernardino County, Cal.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, Cal.

**Durocs**—P. & L's Defender by Defender heads herd. Joseph Prendergast, Route 2 Box 57A, San Bernardino, Cal.

**HEWITT'S BIG TYPE POLAND-CHINA** glits and boar pigs. Hewitt & Hewitt, Dixon, Cal.

**Wanted**—Shoats or sows with pigs to pasture and feed on shares. Rio Hondo Rancho, Box 52A, Downey, Cal.

**Registered Durocs of the big type**—Cholla immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

## RABBITS

**Go into Business for Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, Cal.

## LUMBER

**Lumber—Sash—Doors—Plumbing**—Supplies—Building materials of all kinds. New and second hand. A. R. W. shingles 65 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

## PATENT ATTORNEYS

**Patents** that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

## SEEDS AND PLANTS

**Alfalfa Seed**—Others come and go. We have been in the alfalfa seed business, growing and selling, for forty years. We handle vast quantities of it. We make it a specialty. Our customers dot the entire globe, practically. If you want reliable stock, seed that can be depended upon, either alfalfa or other seeds, write or wire us for quotations, samples and advice. V. A. Peterson Alfalfa Seed Co., Arbutus, Cal.

**Smilo Grass**—An Evergreen, Perennial, drought-resistant bunch grass for forage and pasture. Thrives on dry hills. A limited supply of seed and plants will be sent postpaid on receipt of price. Seed 50 cents an ounce, \$5.00 per pound, roots 50 cents per dozen. One-fourth pound seed will plant one acre. For further information send stamped envelope. G. D. Stead, Oak Dale Ranch, Spring Valley, Cal.

## SEED POTATOES

**Fancy stock White Rose, Early Rose, American Wonder, Oregon and California Burbank and British Queen Seed.** Specially grown. Send for quotations. Wm. A. Curtis Co., 400 Front St., San Francisco, Cal.

**Plant Alfalfa Now** and get full benefit of spring rains. Hay prices promise to be high and early plantings should pay, better this year than ever before. There are many kinds of alfalfa, one is best suited to your conditions. Write us of your soil and water supply and let us send you samples of seed we consider best suited to your needs. Desk B, Bomberger Seed Co., Modesto, Cal.

**HEADQUARTERS for ALFALFA and SUDAN Grass Seed.** Our Field Seeds are cleaned to the highest standard of purity. When buying from us you are not paying for chaff or weed seed. Write for prices and samples. VALLEY SEED COMPANY, 502-504 J St., Sacramento, Cal.

**Vegetable Plants**—Largest Growers of vegetable plants in the West. Send for our price on tomatoes, peppers, cabbage, sweet potatoes and in variety. Also 100,000 Globe onion plants. Better than sets and much cheaper. SUPERIOR NURSERY CO., Fifty-ninth and Compton, Los Angeles, California.

**Seed Oats**—Pure strain White spring oats, heavy, one the largest yielders in the West, as high as 115 bushels to acre being produced, thoroughly tested. Plant good seed, order now, good seed is scarce, prices right. Carlton Nursery Co., Carlton, Ore.

**Alfalfa Seed**—Common variety, hairy and smooth Peruvian. Grown under ideal conditions. Do not buy until you have compared my prices and samples with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

**Plant a Few Acres of Dwarf Milo Maize** for seed. Good seed requires about 2 pounds per acre. Choice pedigree Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**For Sale, Seeds, Feterita, Milo Maize,** White Egyptian corn, 1500 pounds common alfalfa, 19 cents. Peruvian alfalfa, 600 bushels Sudan. Box 501, Fowler, Cal.

**Few Thousand Pounds of good re-cleaned Sudan grass seed** at 20 cents per pound, any quantity f. o. b. while it lasts, order now before price goes higher. J. K. Schick, Proberta, Tehama Co., Cal.

**Rhubarb Plants**—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00, Wagner's Giant Crimson Winter \$3.00, 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

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## Feeding the Farm Hen

Written for California Cultivator By Jean A. Koethen



IT HAS been frequently stated that about 90 per cent of all the eggs produced in the United States are produced on general farms. If this is true it simply points to the farmer as the original and never to be superseded poultryman. Poultry is essentially a farm crop and is more easily raised and more cheaply fed along with other crops. No other hen is as cheaply fed as the farmer's hen, and no other hen is as often neglected. The food administration, in asking every farmer to keep a flock of at least a hundred hens, is only asking him to cultivate a crop which will bring him bigger returns for the money invested than either cattle or hogs. In many cases the farmer already has the feed for his flock; in others he can easily manage to raise most of it. Always he has the range which makes poultry keeping easy, and always he is in greatest need of the manure such a flock will produce. A single hen produces about 30 pounds of roost manure and perhaps 20 pounds of day droppings per year. Fifty hens will provide all the fertilizer needed on an acre of ground. Three hundred hens in a year should produce, if they are fed a full ration of mash and grain from seven to eight tons of manure.

It is assumed that poultry kept on the general farm will be given range a part of the time. This is important in keeping down expense. Hens allowed to forage about the barnyard, through grain fields and over the alfalfa, will pick up a large part of their ration. Such hens will lay a good many eggs if given only a night feeding of grain in addition to the green stuff, waste grain and bugs and worms they pick up. Professor Dryden of the Oregon station, in his new book "Poultry Breeding and Management," gives two sample rations for hens kept under strictly farm conditions. One of these allows 60 pounds of corn per year per bird, the other 60 pounds of wheat in addition to what they pick up. Both allow 50 pounds skim milk, ten pounds green cut bone, five pounds beef scrap, 15 pounds vetch, alfalfa or clover, 20 pounds kale, three pounds oyster shell and one-fourth pounds salt. This means the birds pick up more or less waste grain in ranging the fields; that they are given a fairly good feed of wheat or corn at night, a pan of clabbered milk or cottage cheese sometime during the day, and all the green feed they will eat. If they do not find sufficient green feed on range it must be given them, but hens that range where any greens are growing will always get their share.

What grain is fed depends entirely upon its availability and cost. Professor Dryden's book went to the publisher last year before wheat became taboo for fowls. Doubtless under present conditions he would prescribe barley or milo or corn raised by the farmer himself. In discussing the choice of a ration, he says: "Profitable poultry production is not a question of the best foods any more than it is a question of the cheapest foods. That is to say, the best foods from the standpoint of composition and palatability may produce more eggs or more meat but may produce less profit than other foods that are not so valuable, pound for pound, on account of their lower cost. The feed bill may be so high that the poultryman

is robbed of his profits. No one kind of food is so essential that the poultryman must feed it no matter what its price may be."

The rations given above are the simplest possible for the farm hen. "They may be very much improved," says Professor Dryden, "by the simple method of keeping a hopper of dry bran accessible to the fowls at all times. They would be further improved by adding a little middlings or shorts and a small amount of linseed meal to the bran in the hopper. Adding the bran, middlings and linseed would cut down the amount of wheat necessary. This makes a very good ration for the general farm."

If we substitute for the corn or wheat of the above ration the milo and barley recommended by Professor Dougherty in his more recent bulletin, "Poultry on the Farm," we shall have a farm ration adapted to the present needs. Prof. Dougherty allows each hen 75 pounds of feed per year, 15 pounds each of barley and milo, and a dry mash mixture composed of five pounds each of ground barley, wheat bran and wheat shorts, two pounds soy bean or linseed meal, three pounds beef scrap or fish meal, one-half pound charcoal and one-tenth pound sifted dairy salt. Feterita, Egyptian corn or Indian corn may be substituted for the milo, or part of it, and plump oats for the barley. This is a ration nearly all of which can be raised by the farmer. Milo, Egyptian corn and the other sorghums are easily raised on almost any soil. Indian corn will have to be raised by California farmers, it appears, if we are to have it for our chickens. If wheat is or can be made one of the farm crops, shrunken wheat and wheat screenings may be used instead of the bran and shorts in the mash. When sour milk or buttermilk is available no other animal food need be given.

The easy way to control and feed hens on the farm is to have a good-sized run where the hens can be confined a part of the time. Here they are fed at all times. Here their mash hopper is kept. They run out to forage but they come home to eat. If hens are always fed in the same place they are easily controlled.

I have mentioned milo, Egyptian corn, feterita, barley and Indian corn as feeds all easily within the power of the farmer to produce. In addition to these there are vegetables of various sorts. The half-sugar beet and the sugar beet itself are excellent for poultry. The tops furnish green feed, the root a good amount of fairly succulent material, much of which can be used by chickens. Turnips are easily grown and useful in the same way. There is no better green than the top and the roots, cooked, make a palatable addition to the mash. Cab-



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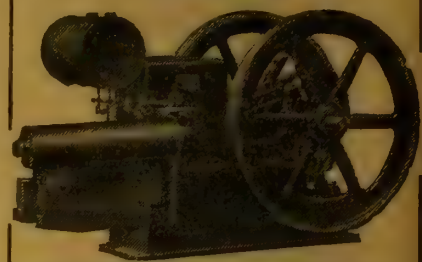
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bage and collards are useful mainly as greens, yet all these vegetables contain considerable egg-making material. If they are kept before the hens it is surprising how much will be consumed in a week. They do not take the place of whole and ground grains but they do diminish the consumption. Beans and peas of poor quality are worth while for chickens

because of the protein they contain. They may be either ground or split or cooked according to convenience. Naturally one would not care to give chickens legumes that were fit for human food, but sometimes there are unmarketable left-overs that may be used in this way. In fact, there is practically nothing grown on the general farm that may not be utilized for chicken feed.

## Insect Enemies of the Garden

By F. H. Chittenden, Entomologist in Charge of Truck Crop Insect Investigations, Bureau of Entomology, United States Department of Agriculture.

**L**IME acts to a limited extent as a deterrent against certain insects which may be in or on the soil, such as maggots and grubs, and is a good remedy for slugs. Air-slacked or hydrated is the best form to use.

### Gas Lime

Gas lime is particularly valuable against certain underground insects. It may be placed between the rows of some crops, but as a general rule should be used after the crop is off. It is a refuse or by-product of gas manufacturing plants and is simply lime through which the illuminating product has passed in the primary stage of purification. It may be obtained frequently for the mere cost of hauling. It is highly impregnated with gas and tarry substances when perfectly fresh, giving out a strong odor for several days after being applied. It should be remembered that it will kill plant life as well as insects, and it is best to use this on a small scale before employing it extensively.

### Lime-Sulphur

Lime-sulphur is a valuable spray for fruit trees, but not suited for use on vegetables. Experiments have shown that potatoes are injured rather than benefited by it.

### Nicotine Sulphate

For small garden plats one teaspoonful of nicotine sulphate should be used to one gallon of water, to which a one-inch cube of hard soap should be added and thoroughly mixed. If a larger quantity is desired, use one fluid ounce to eight gallons of water, with the addition of one-half pound of soap. Full directions are given on the covers of the packages, and instructions accompany them.

For large forms, like the pea aphid, the nicotine should be used slightly stronger, and for small kinds, like the spinach aphid, it may be used considerably weaker.

The following nicotine-spray formula will be found the best for the average aphid or plant-louse on truck crops, as well as for thrips:

Nicotine sulphate (40 per cent), three-eighths of a pint, soap (dissolved), two pounds, water, 50 gallons.

This formula gives one part nicotine sulphate to 1000 parts of water.

The quantity of soap required will vary with the quality of water, more soap being required in "hard" water; but on the average the proportion specified in the formula will give satisfaction. An examination of a freshly sprayed vine will show whether there is sufficient soap in the mixture. If the spray draws together in drops and the spray draws together and drops more soap should be added. Where possible, fish-oil soap should be used, but if it can not be procured, cheap laundry soaps will do. The composition of the cheap soaps is variable, and if too much soap is used, some injury may result to tender foliage.

In the use of nicotine sulphate the effective application of the spray is of the utmost importance, since it is primarily upon this that the success or failure of the treatment depends. If the liquid has stood for any length of time it should be agitated thoroughly before use. The insects themselves must receive a thorough coat of the spray or they will not be killed, and immediate inspection after spraying should show the foliage occupied by the insects to be completely wet.

Spraying should be done as early as possible, always on the first appearance of the insect, not only because it is good practice to keep the plants free from pests, but because more thorough work can be done on small plants.

### Soap Preparations

Soaps of most kinds are of value in solution as washes and as sprays in the control of certain noxious insects. Both hard and soft soaps are employed, and so-called whale-oil soaps, usually manufactured from fish oil, are of great value and much used. Among these are cresol soap and resin fish oil soap. Such soap is usually prepared by dissolving one pound in four to ten gallons of water. On some hardy plants a solution of one pound of soap to two gallons of water can be used, but this strength is harmful to delicate plants and must be used with caution. The best strength for ordinary plants is about one pound in six to ten gallons of water, applied as a spray. It is of most value against plant-lice, minute leaf-bugs, leaf-hoppers, and thrips, and against some forms of small soft-bodied and sensitive insects and their young. Soaps possess no particular advantage, however, over nicotine sulphate or kerosene soap emulsion, but are easier to prepare than the latter.

Neutral soaps of the Castile type are much used on plants grown under glass and as a means of checking the ravages of plant-lice, thrips, red spiders, and some other forms of small insect pests. They are particularly valuable against many insects which obtain their food by suction.

### Homemade Soap

Homemade soap can be prepared by following the directions printed on cans of lye for household use. It will save considerable expense, and those engaged in gardening can do this work at odd times or when the garden is wet with rain.

### Sulphur

Sulphur compounds are valuable for the red spider and for some other forms of mites, but they should be followed by syringing or spraying with neutral soap solutions or water.

South India is producing large quantities of common red peppers, or chiles, which are dried and ground. Her shipments amount to about 8,000,000 pounds annually.



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# Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

## Planting Beans

Am told there is no market for Blackeye beans. Wish to plant them because I have land near the foothills and rabbits do not bother them so much as the Tepary variety. Can you give me information as to where to sell them?—Subscriber, Hemet.

See leader article and also Mr. Musser's hints in next week's Cultivator. We have had several inquiries as to whether Blackeye beans will be destroyed by the rabbits, and while we have made several inquiries do not find any who have observed any difference in the rabbits' likes or dislikes in any of the bean family. We will be pleased to hear from subscribers who have observed the behavior of rabbits towards Blackeyes.

So far as market is concerned, we have not even heard of there being no

sale for Blackeyes excepting that all bean markets have been quiet for a couple of months. We think there is no question but sale may be made in any of the market centers.

## Holding Moisture

Have just finished plowing 15 acres stiff adobe, the kind that cracks, with the intention of planting milo. Our neighbors say it will not hold moisture to mature a crop of milo planted, say May 10. Please advise us.—Subscriber, Chico.

The sufficiency of moisture for any crop depends so much on the rainfall and the amount taken in by the land and the period when it falls, subsoil and so many other considerations, that only a good guesser can answer at long range such a question. If subsoil conditions are such that the rains go down deep into the soil, we think that with present indications as to rainfall you will be entirely safe in planting milo as a dry farming crop. The ground should however be fitted

just as soon as sufficiently dry after these rains and kept in best of tilth so as to conserve every drop of the moisture.

## Substitute Flours

Where one has his own mill and a large supply of potatoes with milo and other grains, including corn, is he still compelled to buy substitutes, pound for pound when he buys flour? If so, is there no relief?—Subscriber, Independence.

We have written California Food Administrator Merritt and hope to have a ruling in this matter. So far as the grocers are concerned, they seem to have no leeway, but certainly many farmers are grinding their own meals and some using far more than 20 per cent of substitute, and there should be some method of permitting the purchase of flour without having to buy substitutes at the long price which is obtaining now for corn meal.

## Petunia

Where can I buy the Royal Purple petunia, the kind that was exhibited at the Panama Pacific International Exhibition at San Francisco? I have been watching all catalogues and publications for that purpose but I have

failed to get the desired information. A beautiful flower like that should not be allowed to disappear for lack of advertising.—Subscriber, Corona.

We think any seedman advertising in this paper can supply seed of these petunias. We purchased them last year, and, as the writer says, they are a wonderful flower.

## Best Crop

I would be glad to know if any kind of beans could be grown in the enclosed package of soil, or squash or what do you think would be the most valuable crop to put in? I have plenty of water for irrigation.—Subscriber, Lancaster.

The Cultivator is not situated so as to be able to analyze soil, and in fact, soil analysis in this case would be of little value. From the physical examination it appears an excellent soil and typical of much of the soil in the Antelope Valley. Of course one of the first considerations in the growing of a successful crop is a good soil, and knowing all other conditions, knowledge of that soil is valuable, but climate, amount of rainfall, market demands in the section in question are also of great importance. So far as this soil is concerned it looks as if it was perfectly adapted to the growing of squash or beans. See list of beans for different sections of state on page three of this paper.

## Registering Berkshires

What steps are necessary to register Berkshire hogs?—New Beginner, Dinuba.

Write Frank S. Springer, American Berkshire Association, Springfield, Illinois.

## Seed Potatoes

Will it harm seed potatoes to keep in cold storage, and what is the right temperature?—Subscriber, Victorville.

No. Keep at temperature around 36 without too great humidity.

## Intercrop for Horse Feed

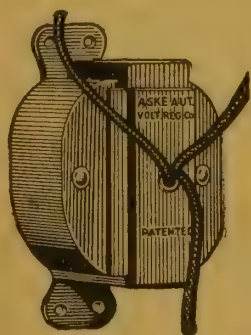
What may one sqw between orange trees to cut in spring and summer for feed for horses?—Subscriber, Redlands.

A small amount of feed may be grown by drilling in a strip of barley, or, still better, especially as to the quantity, perhaps one of the sorghums, such as Sudan grass. This makes a very good hay, superior to the timothy hay grown by Eastern farmers. The other sorghums, such as the larger growing kafir and milo, are also good. One word of warning, however, as an orchardist one must bear in mind that the vigor of the trees is the first consideration and that any intercrop takes strength and moisture. For best tree results this must be returned, and in the case of moisture it is a question of consistent summer attention.

## SALE OF SHORTHORNS

The California Shorthorn Breeders' Association announces a sale of pure bred Shorthorns to take place at 478 Valencia Street, San Francisco, April 11. Some of the bulls will be exceptionally high grade stock which will be prized by breeders of pure breeds, and in addition there will be an offering of bulls for the range man who is anxious to make the greatest amount of beef in the shortest period of time. The stock will come from some of the finest Shorthorn ranches west of the Mississippi River.

The consignors are: Alexander & Kellogg, William Bond, Wm. M. Caruthers, H. M. Elberg, Foster Company, Thornton S. Glide, Jack London Ranch, Ormondale Company, Pacheco Cattle Company, Paicines Ranch Company, University Farm. The sale will begin at 1 o'clock.



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We are "tickled to death" with the Aske Regulator, it's worth its weight in gold to all Ford owners.—Joseph A. Lee, Police Department, Hall of Justice, San Francisco, Cal.  
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The Aske Instrument Board is highly finished in black enamel—complete with Flush Type Dust Proof Clock, dimmer and push and pull switches, which are standard with the higher priced cars and wired with the best lighting cable cut to lengths for installation, also rear lamp adapter for converting oil lamp into electric.

Aske Dual Lighting System adds beauty, utility and distinction to your car, decreases steering wheel vibration, eliminates all lighting and starting trouble and gives a wonderfully efficient system.

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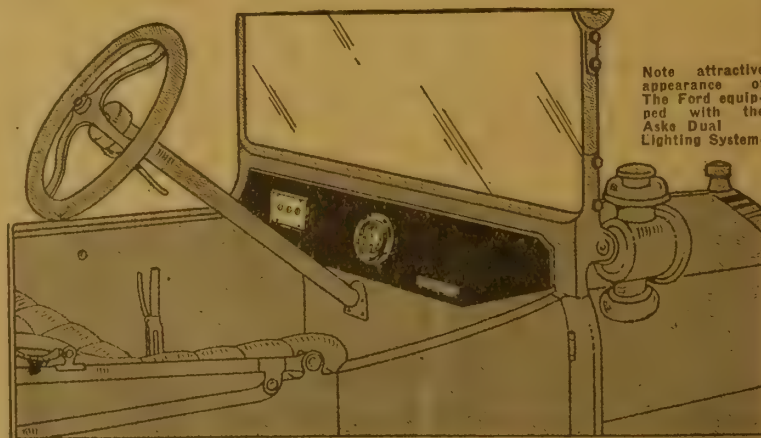
The Aske Lighting Units are sold at most dealer's or will be sent direct to you upon receipt of price and dealer's name. Write for our descriptive booklet.

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Duluth

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Instrument Board complete with Regulator...\$18.00

Instrument Board complete without Regulator \$13.00

Instrument Board complete without Regulator and clock \$10.00

Flush Type Clock ..... \$3.50

Instrument Board without equipment ..... \$1.25



PLANT MORE ONIONS

Written for California Cultivator

By D. F. Reichard

**F**ROM our observations it would seem that onions are being a little neglected in a planting way. True, the price has not been as high as last year, but the returns have been satisfactory and the prospects are that they will be good next fall when the harvest is on. Onions are a crop that can be grown profitably in a small way or on a large scale. They may be grown on a variety of soils, but for best results a rich, friable sedimentary soil that retains moisture should be selected. If the soil is heavy and inclined to pack an extra amount of cultivation will be necessary to keep the surface loose to allow for free expansion of the bulb. If the soil is very sandy there must be frequent irrigations to keep the moisture near the surface.

Onions are grown from seeds sown directly in the field; from transplanted seedlings and from sets. At this season of the year it is advisable to plant the seed directly in the field where they are to grow to maturity. Use two and a half to three pounds of seed to an acre. Be sure the land is thoroughly worked up and fined well. Thin out when the plants are six to eight inches high to three or four inches between the plants. Keep the soil thoroughly cultivated and the weeds out. A few days' delay in weeding may ruin the whole crop from the weeds crowding out your onions. When irrigation is necessary to keep up unretarded growth run the water in furrows between the rows. Cultivate as soon as the soil is dry enough that it does not stick to the tools.

Onions are ripe and ready to pull when the tops turn yellow, dry up near the bulb and fall over. If they are grown on moist land the crops should be harvested at once as the moisture will soon start the bulbs to growing again, but if on dry ground the onions may be harvested more leisurely provided too hot weather does not prevail which might blister them. Plant Yellow Globe Danver, Australian Brown and Silverskin during March for best results.

**TRACTOR DEMONSTRATION**

The University of California has undertaken to conduct tests of tractors as to actual drawbar horse power and short turning ability in plowed ground as well as on ordinary surfaces at the Davis farm school demonstration, April 17-19. These tests will be conducted carefully and scientifically, and though they will not be compulsory upon all exhibitors, those exhibitors who submit their tractors to these tests agree that the results may be made public through the university. These tests have been recommended by the Society of Automotive Engineers and will be under the direction of Professor Davidson, who is a prominent member of that society. Following the 1917 tractor demonstrations in the East and Middle West, there was a widespread demand for some tests of this nature and as a result of their adoption for this demonstration, it will be visited and watched with close interest by some of the leading international figures in the tractor world.

The university farm school has declared open house for the period of the demonstration and will provide eating and sleeping accommodations to the limit of its facilities in the university dormitories and dining rooms and

in the hotels and private homes of the town. Many of the visitors will, of course, prefer to make their headquarters in Sacramento, as the demonstration field is only about 15 miles—a little over a half-hour's ride by auto, train or jitney—from the hotels of the capitol city.

**FARM INVENTORY VALUABLE**

An inventory is an itemized list of all property connected with the farm business, with its value. It will of course vary from year to year so it is necessary to take an inventory every year. The amount invested in different parts of the business will vary as stock and crops are being raised and sold at various times. An inventory is worth many times the effort it requires since it enables one to know the amount he has invested in livestock, buildings, machinery, feed, land, etc. year after year.

The time to take the inventory is largely a matter of choice but by all means it should be taken some time between January 1 and May 1. A tenant may want to take his at the time he is changing farms, which would be about March 1. Most of the feed has been fed and the marketable

livestock sold by March so this would doubtless be as good a time as any and work is usually slack at this time of the year.—L. F. Garey, Colorado Agricultural College.

W.S.S. now—3rd Liberty Loan soon.

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In these advertisements we are telling you that we are belt engineers—that all you have to do is to tell us your belt troubles, and we'll help you solve them—free, of course—just write us as fully as possible what is wrong.

Send a rough drawing to show location and how operated. We'll reply as fully and completely as possible, giving advice as to how to adjust and arrange your belt so that it will do your work.

Try it—write us—put it up to us to make good on this offer—do it as soon as you have read this.

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A pocket memo, booklet giving speed and power tables will be sent FREE to all who mail this coupon.



## The Cultivator Patterns



8180

8209



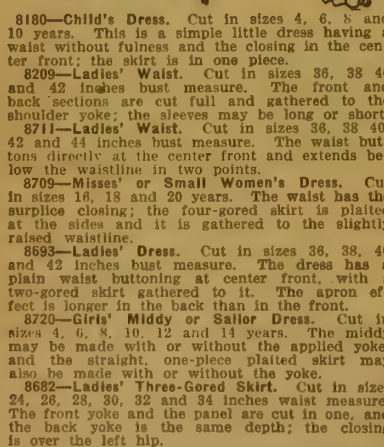
8711

8709



8693

8720



8682

8180—Child's Dress. Cut in sizes 4, 6, 8 and 10 years. This is a simple little dress having a waist without fulness and the closing in the center front; the skirt is in one piece.

8209—Ladies' Waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The front and back sections are cut full and gathered to the shoulder yoke; the sleeves may be long or short.

8711—Ladies' Waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The waist buttons directly at the center front and extends below the waistline in two points.

8709—Misses' or Small Women's Dress. Cut in sizes 16, 18 and 20 years. The waist has the surplus closing; the four-gored skirt is plaited at the sides and it is gathered to the slightly raised waistline.

8693—Ladies' Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The dress has a plain waist buttoning at center front, with a two-gored skirt gathered to it. The apron effect is longer in the back than in the front.

8720—Girls' Middy or Sailor Dress. Cut in sizes 4, 6, 8, 10, 12 and 14 years. The middie may be made with or without the applied yoke, and the straight, one-piece plaited skirt may also be made with or without the yoke.

8682—Ladies' Three-Gored Skirt. Cut in sizes 24, 26, 28, 30, 32 and 34 inches waist measure. The front yoke and the panel are cut in one, and the back yoke is the same depth; the closing is over the left hip.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

### HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

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Los Angeles

## Household Department

### THE SERVICE FLAG

It hangs below the Stars and Stripes,  
A banner bright and new,  
Red-bordered with a field of white  
And stars of deepest blue.  
However humble is the home  
O'er which its colors wave,  
It glorifies it with the light  
That shines upon the brave.

For where the new-born emblem flies  
A man has buckled on  
The sword in Freedom's sacred cause,  
And from the house has gone  
To face the trinity of death  
In lead, and steel, and gas;  
So when you see the service flag  
Salute it as you pass.

—Minna Irving.

### EVER TRY WHISTLING?

When you find yourself a-trav'ling out  
Upon a lonesome road,  
And your back begins to weaken as you  
Struggle with your load,  
And the evening shadows lengthen way  
Ahead and all about,  
And you feel almost discouraged, and  
In fact just down and out,  
Ever try whistling?

When the eventide approaches, after  
Hours of honest toil,  
At your home the meal's belated, not a  
Thing's begun to boil,  
And your inside information urges loud  
It's time to eat,  
And you are so agitated that you can't  
Keep off your feet,  
Ever try whistling?

When the monthly bills have reached you  
And you feel so very lank,  
Just because the situation finds no balance  
In your bank  
And besides there is a limit to your  
Credit, as they say,  
And the prospect for tomorrow is no  
Better than today,  
Ever try whistling?

—Chas. Alexander in Citizens Advocate.

### BALLYSHANNON

**B**ALLY took to the life like a true Irishman—the harder the knocks, the more desperate the fighting, the better he liked it. What he didn't care for was the enforced marches in retreat.

For six months or so Bally served his master and the French troops, a faithful messenger. He weighs about 170 pounds but for a big fellow he is splendidly lithe and sinuous and able to get very easily where man dare not follow.

They say that when the regiment to which he justifiably belonged was ordered to Ypres, Bally was the happiest and lightest-hearted member of it. This proves that even a dog does not always know what is coming to him. For Ypres was destined to be a dangerous if not fatal field to Bally. In the first action in which he was employed a heavy cannon thrown off its carriage rolled over on Bally and crushed him to the earth. There the Huns found the dog, and seeing that it was still alive they carried him in to their lines.

For the first time in his military career Bally was a prisoner, helpless and apparently near death. At least the Germans so considered him, and the next day they thrust the crippled animal back into the French lines. There at least he might die among friendly faces.

But Bally wasn't to be so quickly killed. A surgeon examined him and a nun took an x-ray of his bent and contused ribs. They were not broken, and as his master was returning to Ireland to nurse a shattered arm he took the dog along to get well in his native air.

Bally's worst adventure was to come, and shortly. Off the coast of Ireland the ship was torpedoed by a submarine, and but three of those on board escaped with their lives, a sailor, a New York man named Maloney, and Bally. The three supported themselves in the water by clinging to a plank, and when they were finally picked up and put ashore in Ireland, Mr. Maloney was so penetrated with admiration of the superb courage displayed by the dog that there being

nobody else to claim him, he adopted the animal as his own and brought him to New York.

That was last May. Bally, still almost unable to walk, was taken by his new master up to Central Park, and put in charge of Tom Hoey, who has been shepherd there for a score of years. For 17 of these Lady Dale, an Airedale, has assisted Tom. It is a question which was the more pleased by Bally's advent, Tom Hoey or Lady Dale. Both welcomed the Irish wolfhound heartily, but with Lady Dale it was a case of love at first sight.

Since then Bally has lived in what ought to seem like a canine paradise. The shepherd, acting for Mr. Maloney, doctored and fed him medicine and food most calculated to restore his strength, while Lady Dale saw to it that in his exercise he should see all her favorite haunts in the park.

A safe and pleasant life, Bally ought to be content to lead it, but he isn't.

"The dog's that restless at times," said Tom Hoey, "that I fair believe he wants to be going back to the wars. It will be a sorry day for Lady Dale if he does, for that Airedale is in love with him if ever one dog was with another."—New York Sun.

### BEANS

Here are some bean recipes from Ohio. Try them out.

California is the biggest producer of beans in the United States, as you will note in reading the leader article in this week's Cultivator. In fact she produces nearly as many as all the other states put together.

And beans are good eating, nutritious, palatable and satisfying and, especially if we raise them ourselves, inexpensive. We are all looking for new foods and new ways of using the old and inexpensive ones, so these recipes will be welcomed.

### Boiled Beans and Tomatoes

Three cups cooked navy beans, one cup canned tomatoes, one tablespoon minced parsley or celery if desired, two tablespoons drippings, one tablespoon minced onion. Salt and pepper to taste.

Add tomatoes to beans and boil one-half hour. Cook onions and other seasonings in the drippings, add to the beans.

### Bean Polenta

Four cups cooked white beans, one and one-half tablespoons molasses, one-quarter teaspoon mustard, one-eighth teaspoon pepper, two teaspoons vinegar.

Drain the water from cold boiled beans, mash them fine, and mix with the other ingredients. Form the mixture into cakes and brown on both sides in hot greased pan.

### Bean Loaf

Two cups cooked beans put through food chopper, two cups soft bread crumbs, one-eighth cup chopped onion, one stalk celery or one-half teaspoon celery seed, four tablespoons bacon fat, two tablespoons flour, one-half cup water.

Melt two tablespoons of fat in a frying pan, add the bread crumbs, stirring well until mixed with fat, and add to the ground beans. Cook onion in remaining two tablespoons of fat, and add flour and water and boil. Add to mixture and make into loaf. More bread crumbs may be needed. Bake until nicely browned. Thin slices of bacon placed over top of loaf while baking are an addition. May be serv-

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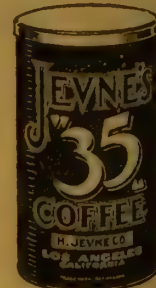
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## Fertilizer

Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

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and straw, manure, etc. have not been applied.

BALED SHAVINGS will supply the ORGANIC MATTER

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## RHUBARB

PLANT YOUR LAND NOW TO  
WINTER RHUBARB  
You should get big crop by next  
fall. Others making \$1000 per  
acre, so can you with WAGNER'S GIANT  
—plant no other. Get your plants from  
originator and avoid disappointment. J. B.  
WAGNER, Rhubarb and Berry Specialist,  
PASADENA, CAL.

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ed with tomato sauce or bacon gravy.  
**Jungle Stew**

One and one-half cups kidney beans, one-half cup macaroni or rice, one cup tomatoes, one onion, four tablespoons drippings. Seasoning to taste.

Wash and soak beans over night. Cook until tender. Brown sliced onions in frying pan with drippings, add to stew with tomatoes, seasoning and the macaroni, broken into bits. Cook until macaroni is well done.

#### PORKLESS DAYS

Ralph P. Merritt, federal food commissioner for California, writes us that the food conservation program for California has been revised with regard to porkless days.

"Porkless" Saturdays eliminated, for a period of 90 days. Hereafter all pork products may be consumed by the public, served in public eating places, such as clubs, hotels and restaurants, and sold by butchers, grocers and trades handling it on Saturdays.

"Porkless" Tuesdays will be observed as in the past with modification. Pork to be conserved under the new definition for the next 90 days means ham, bacon and lard and other cured pork products only. Fresh pork, sausage and trimmings may be sold and consumed as desired on Tuesdays.

All restrictions on the consumption of mutton and lamb have been removed in California temporarily.

The observance of one meatless and one porkless meal each day has been suspended indefinitely.

The new rulings were made primarily because of a present adequate supply of meats and fresh pork products for shipment to the Allies; to encourage hog production in California and in order that the conservation program for the present could be concentrated on the saving of wheat products. The wheat saving program remains unchanged. Mondays and Wednesdays to be wheatless, with at least one wheatless meal, the evening meal, each of the other days.

#### VALUABLE HOUSEKEEPERS BULLETIN

Amongst the valuable matter sent out by the government these days we may refer to two just issued farmers bulletins, 565 and 807. No. 565 is "Corn Meal as a Food and Ways of Using it." There is discussion of the value of corn meal, methods of milling it, selecting and care, uses and general discussion of cooking, then a long list of recipes for corn meal breads, hoe cakes, corn pones, sweet milk corn bread, corn muffins with dates, and even Indian meal doughnuts, with, of course, all kinds of puddings. No. 807 is "Bread and Bread Making in the Home." There are 26 pages given to the discussion of bread making. It is worth the asking. Write Division of Publications, Washington, D. C. for either of these bulletins which will be mailed free on request.

#### SAUSAGE IN BRINE

Stuffed sausages may be kept for several months if placed in a mild brine for four or five days (seven parts saturated brine and three parts water). Rinse and smoke six or eight hours. Hang in a dry airy place.

All stuffed sausages that are to be kept for some time may be kept from molding or becoming too dry if the cool sausages are dipped in melted paraffin or painted with the melted paraffin.

#### "SAVE THE WHEAT" RECIPES

Written for California Cultivator  
By C. A. S.

##### Rice and Corn Bread

One pint white corn meal, one cup cold cooked rice, one teaspoon salt, two teaspoons baking powder, three eggs, one tablespoon melted shortening, one and one-half cups milk. Sift dry ingredients together, and add eggs well beaten, fat, milk and rice. Beat together, pour into shallow well greased tin and bake in hot oven 30 minutes.

##### Rye Griddle Cakes

Two cups rye flour, one cup wheat flour, three teaspoons baking powder, one teaspoon salt, one pint milk, two eggs. Sift flour, salt, baking powder together, add milk, then eggs well beaten. Beat well and cook at once on hot griddle.

##### Oatmeal Sticks

These save crackers when served with soup.

Three cups oat meal mush (or rolled oats mush), three cups flour, one teaspoon salt, one tablespoon sugar, three teaspoons baking powder, three tablespoons of fat. Sift flour, salt, and sugar together, rub in fat, work this mixture into the mush forming a smooth dough. If necessary add a little milk or cold water to mush. Roll into sticks the length and thickness of a lead pencil. Bake ten minutes in a hot oven.

##### Hominy Bread

Mix together a pint of soft boiled hominy, one teaspoon salt, two tablespoons melted fat, four beaten eggs, two cups milk. Sift one cup flour and two teaspoons baking powder together; add to batter. Add a little more flour if necessary to make batter that will just drop from a spoon. Beat well; bake in shallow tin in very hot oven.

##### Mixing Flour

Conservation flours can be mixed in the following proportions and used according to the old standard recipes for raised or baking powder breads, cakes, pies, etc. The flours should be sifted together first of all before making anything. Except oats and corn which should be scalded. Four quarts wheat to one rice flour. Three quarts wheat to three-quarters oat flakes. Two quarts wheat to one corn meal. Smaller measures in the same proportion.

##### Conservation Yeast

The conservation bread recipes all call for "compressed yeast," something which the farm woman usually cannot get fresh, therefore must go without. Here is a home made yeast just as quick. It is also easy and economical:

One cup potato parings, one quart cold water, one-half cup of old yeast (one yeast cake the first time to start). Boil the parings in the water. Add when lukewarm the old yeast or the yeast cake dissolved in half a cup of lukewarm water. Set in a warm place until it foams on top. Then put into a sterilized one-half gallon fruit jar and set in a cool place. Strain through sieve before using to keep out potato skins.

##### Liberty Bread

Put two tablespoons of sugar, one of salt, two of lard into a mixing bowl. Add one quart of conservation yeast. Have ready three quarts of any of the flours mixed in the proportions given above. Stir in flour until too thick to stir longer, then turn out on the moulding board and mould in the remaining flour, making a smooth stiff dough. Flours differ as to how much wetting they require, and you may not need quite all the flour measured out, but make it stiff as it will soften in rising. Put the dough into a bowl which it not more than half fills. Cover with tin pan and set in a warm place till it doubles in size. Make into loaves. Let rise again until the loaves double in size, then bake.

To give pastry a brown, shiny finish, beat an egg into about a teaspoon of water until both are thoroughly mixed; brush on pastry before putting in oven.

All some folks seem t' care about th' war is that they don't have t' go.



**Great Majestic**  
*The Range with a Reputation*

**Two new features!**  
Labor saving—beautifying.

Famous as a sure baker and fuel saver, the Great Majestic now adds to its reputation as a work-saver.

The new burnished blue polished top does away with the work and muss of "blackening". This isn't a temporary finish—it is burned into the iron.

The new smooth nickel trimmings are riveted on from the inside; yet the inside is perfectly smooth; no bolt-heads or nuts either inside or out to catch dirt or get in the way. Majestic riveting also holds the nickel permanently tight.

These two features, added to the Majestic unbreakable malleable frame and rust-resisting charcoal-iron body, make the Majestic, more than ever, the most economical, convenient and satisfactory range to own.

One quality; many styles and sizes; with or without legs. There is a Majestic dealer in every county of 42 States; if you don't know of one near you, write us.

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**AT YOUR SERVICE**

**2800 TRAINS DAILY**

Fast	<b>NORTH</b>	Between
Comfortable		Interurban Points
Convenient		in
Dependable		Southern California

**WEST**  **EAST**

Orange Empire	<b>SOUTH</b>	Mt. Lowe
Trolley Trip		World's Most Famous
To Riverside, San Bernardino, Smiley Heights and Redlands.		Mountain Scenic Trolley Trip.
\$3.50		Round Trip Fare \$2.00

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**California Cultivator**  
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## "California's Best"

WHEN California sets out to do anything she makes the Nation sit up and take notice. California produces the best oranges—the best figs—the best olives—and lots of other "bests."

So when we say that she also produces the best roofing it is merely backing up California's reputation for doing things better.

## A 30 Year Record

The factory that makes "Pioneer Roofing" started in a very small way back in 1888. The excellence of the product quickly earned a good name and good business. So the reputation and the business both grew. Today, Pioneer Roofing is sold all over the West and in a number of Foreign countries; the factory covers nine acres.

The men that make Pioneer Roofing are experts. They know that a reputation of 30 years depends upon them and that every roll must be uniform in quality—and we back up their ability with a guarantee.

## For Every Kind of Building

You will find Pioneer Roofing admirably adapted. It is also the best roofing to use for repairs. Use it on sheds, barns, silos, chicken houses, as well as on your home. It always gives satisfaction.

## Ask Your Dealer

There are dealers almost everywhere that sell and recommend Pioneer Roofing, but—should your dealer not be able to supply, DON'T take a substitute but write us for samples and booklet, and we'll give you the name of a dealer who WILL supply you.

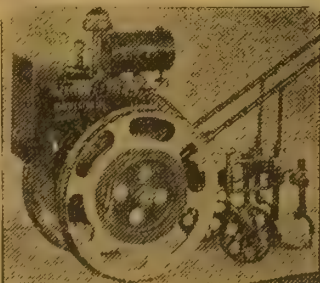
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Now  
Price  
\$300



It will replace one horse

It Plows, Discs, and Cultivates  
Immediate deliveries. 1918 deliveries limited  
Some Territory Still Open for Dealers

Owen Magnetic Sales Corp.

701-703 West Seventh Street  
Corner of Hope St., Los Angeles, Cal.

Tulare Grange holds its next regular meeting on Saturday of this week.

## Los Angeles Market

Los Angeles, March 13, 1918.

### BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....49  
Dairy Exchange price past week on extras.  
March 6 7 8 9 11 12  
'18 ... 50 50 49 49 49 49  
Rets. wk. ending Mar. 12, 268,100 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....30  
Domestic Swiss .....35

### EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh Extra .....39  
Pullet .....36  
Case Count .....36  
Dairy Exchange prices past week on fresh extras.  
March 6 7 8 9 11 12  
'18 ... 38 38 38 38 38 39  
Rets. wk. ending Mar. 12, 4266 cases.

### POULTRY

We quote to producers:  
Food administration orders hens sold for producing purposes only till April 30.  
Broilers .....32@38  
Fryers .....32  
Roasters, 3 lbs. and up .....30  
Ducks, lb .....25@27  
Roosters, old .....18  
Turkeys .....27@38  
Geese, lb. ....20

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, March 13, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. ....10.50@11.00  
Heifers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....4.00@5.00

Hogs—  
Av. 125 lbs. ....14.50  
Av. 150 lbs. ....15.00  
Av. 175-299 lbs. ....16.25  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers .....10.50@11.00  
Ewes .....10.00@10.50  
Lambs .....13.50@14.00  
Yearlings .....10.50@11.00

### POTATOES

Wholesale selling price:  
Oregon Early Rose .....2.75  
Northern Burbank, cwt. ....1.60@1.90  
Sweet, sk. ....4.50@4.75

### ONIONS

Wholesale selling price:  
Brown .....1.75  
White .....3.00  
Garlic .....6

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....90@1.15  
Beets, sk. ....2.25  
Brussel Sprouts, lb .....14  
Cabbage, lb., 3¼; sk. ....2.20  
Red, lb. ....5  
Carrots, doz. ....30  
Cauliflower, doz. ....75  
Celery, doz. ....80  
Cucumbers — Hothouse, doz. ....75@1.75  
Egg Plant, lb. ....20  
Horseradish, lb. ....15  
Lettuce, doz. ....25  
Leeks .....30  
Mint, doz. ....40  
Onions, green, doz. ....25  
Peas, Tel., lb. ....12@13  
Peppers, Chill, lb. ....20  
Parsnips, doz. ....30  
Parsley, doz. ....35  
Radish, doz. ....20  
White .....35  
Rhubarb — Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Crockneck .....70@75  
Hubbard, lb. ....3½  
Tomatoes, lug .....2.35  
Turnips, doz. ....80  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples — Bellflowers .....1.75  
King David .....2.00@2.25  
W. W. Pearmain .....1.60@2.25  
Spitzenberg .....2.50@3.00  
Y. Newton .....1.60@1.85  
Bananas, lb. ....5½@5½  
Pears, Winter Nellis, lug .....2.25

### CITRUS

Lemons, 4.25@5.50 packed; juice .....2.50  
Loose .....4.25  
Oranges—Navels, bx. ....3.25@6.75  
Grapefruit .....3.00  
Limes, basket .....75  
Tangerines, lug .....1.75

### DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, ¼c less.  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 16½; extra ch., 17½; fy., 18½; pears, 12; peaches, choice, 12; fy., 12½; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 14; 40-50s, 13½; 50-60s, 13; 60-70s, 10½; 70-80s, 10; 90-100s, 9.  
Figs—Calimyrna, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....25  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size

as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

### HONEY

Prices of wholesaler to retailer:  
Extr. W. W., lb. ....20  
Comb. W. W. case .....5.00  
Light Amber, case .....4.75

### RICE

Wholesale quotations:  
Cal. ....8.00  
Broken .....6.50@7.00

### BEANS

These are prices made by wholesaler to retailer.  
Lady Washington .....14.50  
Limas .....14.50  
Pinks .....9.25  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....14.50  
Blackeyes .....9.50  
Tepary .....10.00@11.00  
Lentils .....25.00

### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oat .....30.00@32.00  
Volunteer Oat .....18.00@20.00  
Wheat .....26.00@29.00  
Barley .....28.00@31.00  
Alfalfa .....28.00@30.00

The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

### GRAIN AND FEEDSTUFFS

The market quotations on grain and feeds below are left as they were last week but are of no value only as showing what the market was. All quotations are now withdrawn because of instructions of the food administration as to profits which dealers may charge. Until dealers may get together and formulate a plan they will issue no card and now can make no price except for immediate delivery.

Wholesale cwt. f. o. b. L. A.  
Alfalfa Meal .....2.20  
Alfalfa Molasses .....2.30  
Barley, Rolled .....3.90  
Barley, Rcleaned Whole .....3.95  
Barley Hulled .....4.25  
Best Pulp .....2.25  
Bran, (Light) 65 lb. sk. ....1.95  
Cocoanut Meal .....2.75  
Cottonseed Meal .....3.27½  
Corn, Yellow .....4.15  
Corn, White .....4.75  
Corn, Cracked .....4.20  
Corn, Egyptian .....4.15  
Corn Feed Meal .....4.25  
Mixed Feed (80 lb. sacks) .....2.12½  
Milo, Maize, Field Run .....3.90  
Oat Chop .....1.90  
Oats, White .....3.90  
Oats, Rolled White .....4.05  
Oats Hulled .....5.20  
Oats Rolled Chicken Groats .....5.40  
Oats Eastern Red .....3.90  
Olicake Meal .....3.85  
Red Dog .....2.65  
Rye .....4.40  
Blood Meal .....5.00@5.10  
Bone, Green .....2.75@2.85  
Bone, Dry .....2.95@3.05  
Buckwheat .....5.00@5.10  
Canada Peas .....6.40@6.50  
Charcoal, 50 lb. sk. ....3.40@3.50  
Clam Shell .....70@95  
Grit Granite .....75@85  
Hemp .....5.50@5.60  
Oyster Shell .....1.35@1.45  
Red Millet .....4.65@4.75  
Sunflower Seed .....5.15@5.25  
Soya Bean Meal .....3.50@3.60  
Scratch Feed .....4.20@4.30  
Scratch Gritless .....4.40@4.50  
Vetch .....5.10@5.20  
Rice Bran, ton .....45.00  
Middlings, ton .....55.00  
Rice Polish, ton .....56.00

## San Francisco Markets

San Francisco, March 11, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapped, ¼c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....51½  
Prices on butter are practically 15 cents above year ago this date.

Prices Extras past week and year ago:  
Mar. 5 6 7 8 9 11  
'18 ... 50½ 51½ 51½ 51½ 51½ 51½  
'17 ... 35 32½ 33 33 33  
Rets. wk. ending Mch. 12, 606,300 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25½; Y. Am. ....28½  
Jack cheese, full cream .....26@27  
Half skim .....14@17

### EGGS

Extras .....39  
Firsts .....38  
Selected Pullets .....38  
Prices Extra past wk. and yr ago:  
Mar. 5 6 7 8 9 11



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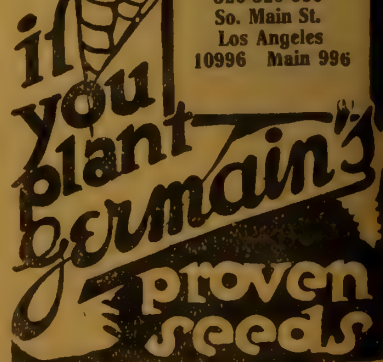


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it's your patriotic  
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## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

BRENTWOOD IRRIGATED FARMS, In Contra Costa Co., 63 Miles from San Francisco  
For Price and Descriptive Matter Address

BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco



13 ... 39 29 40 39 40 39  
17 ... 25 25 25 25 25 25  
Rets. wk. ending Mch. 12, 15,290 cases.

POULTRY

We quote from producers, lb.:  
The food administration forbids sale of  
hens for meat until after Apr 1 30.  
Broilers—1 to 1 1/2 lbs., 55@60; 1 1/2 to 2 lbs., 45@50; 2 to 3 lbs., 35@40.  
Roosters ..... 25@40  
Squabs, doz. .... 3.50@5.00  
Ducks ..... 25@30  
Geese ..... 27@30  
Belgian Hares, live, lb. .... 22@23  
Turkeys, dr., 35@36; live ..... 28@30

LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings 1/2 to 3/4 c more.  
Steers, lb., 9 1/2 @ 11 1/4; undesirable, 6 1/2 @ 8 1/2; cows and heifers, 7 1/2 @ 8 1/4; undesirable, 4 1/2 @ 6 1/2; calves, 7 1/2 @ 10.  
Sheep—Lb. gross weight: Fat, unshorn wethers, 14@14 1/2; ewes, 11@11 1/2; lambs, yearlings, 15@16; shorn sheep, 1 1/2 @ 2 less.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 14 1/2; 140 to 300 lbs., 16; 300 to 400 lbs., 15 1/2.

POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks ..... 1.35@1.65  
River ..... 1.00@1.50  
Yakima Gems ..... 1.40@1.65  
Sweets ..... 4.00@4.25  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.50@1.75; high top, 1.50@1.75; Garnet Chile, 2.75@3.00; White Rose, 2.00@2.25; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown ..... 1.15@1.25  
Bermudas ..... 2.75@3.00  
Garlic, lb. .... 3 1/2 @ 4 1/2

VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 35@70  
Asparagus, lb. .... 15@30  
Beets, sk. .... 1.25@1.50  
Brussel Sprouts, lb. .... 5@7  
Carrots, sk. .... .75  
Cauliflower, cr. .... 1.00  
Celery, Delta, cr. .... 1.00@2.00  
Cucumbers, doz. .... 1.50@2.50  
Egg Plant, lb. .... 12 1/2 @ 15  
Endive, lb. .... 25@30  
Lettuce, cr. Southern, iced ..... 1.20@1.35  
Uniced, 40@75; Imperial ..... 1.50@1.75  
Onions, green, bx. .... 75@1.00  
Parsnips, sk. .... .75  
Peas, lb. .... 7@16  
Peppers, Bell, lb., 25@30; Chili, 15@17 1/2  
Pumpkins, sk. .... 35@1.00  
Rhubarb, bx. .... 2.00@2.50  
Strawberry, lb. .... 9@10  
Squash—Marrowfat, sk ..... 1.00@1.25  
Cream, lug ..... 75@1.00  
Hubbard, sk. .... 1.00@1.25  
Tomatoes, Mex. .... 1.75@2.50  
Turnips, sk. .... 85@1.00

FRESH FRUITS

Apples—Spitzenburg, 2.00@2.50; Red 1.25@1.50; Newton Pippins, 1.35@1.75.  
Pears—Winter Nellis bx., 2.00@2.75; winter pears, lug, 1.50@1.75.  
Bananas, Hawaiian, bunch ..... 1.25@2.50  
Strawberries, ch. .... 3.00@10.00  
Citrus Fruits—Lemons, bx. according to size, fy., 3.00@6.00; ch., 2.50@3.00; lemonettes, 1.50@2.25; grapefruit, 2.00@3.25; Imperial, 2.75@3.25. Orange—Bx. Navelis, fy., 3.00@6.00; ch., 2.75@4.50; do. culls, 2.25@2.75; Mandarin and Tangerines, 1/2 bx., 2.25@3.00.

DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, bulk basis, standard, 10; ch. 10 1/2; extra ch., 11; fy., 11 1/2. 40s, 8 1/2; 30s, 9 1/2.  
Apricots—Bulk basis: Standard, 13 1/2; ch., 15; extra ch., 15 1/2; fy., 16 1/2; extra fy., 17 1/2; fy. Moorpark, 17 1/2; extra fy., 18 1/2.  
Prunes—70s to 90s, 7; 60s, 7 1/2; 50s, 8; 40s, 8 1/2; 30s, 9 1/2.  
Apples—In 50-lb. bxs., lb.: Fy., 16; extra ch., 15; ch., 15.  
Pears—Bulk basis, lb.: Fancy, 10 1/2; ex. ch., 9; ch., 8 1/2; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; 12-oz. 45 to cs, 5.25; ch., 16-oz. cartons, \$3.00 for 36s; do, 12-oz. cartons, 45s to cs, 3.10. In bulk: Sun Maid, 1.75; fy., 1.90; ch., 1.75.  
Sulphur-bleached Thompson, extra fy., 5.37 1/2; fy, 5.12 1/2; ch., 4.87 1/2; soda-bleached, 4.75.  
Loose: One-crown, 4.15; 2-crown, 3.40; 3-crown, 3.65; 4-crown, 3.20.

NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21 1/2; I X L, 19 1/2; Ne Plus, 18 1/2; Drakes, 16; hard shell, 11 1/2.  
Chestnuts, Cal. lb. .... 10@20  
Peanuts, Va. .... 15  
Pecans, lb. .... 19@20  
Pine Nuts ..... 20@22

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

BEANS

Jobbers' prices, cwt., recleaned:  
Limas ..... 13.50  
Bayous ..... 9.25@9.50  
Small Whites ..... 13.00  
Large Whites ..... 12.40@12.50  
Mexican Reds ..... 9.00@9.25  
Blackeyes ..... 8.50  
Pinks ..... 8.40  
Red Kidney ..... 13.00  
Cranberry ..... 12.50  
Teparies ..... 10.50

RICE

Agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows Paddy rice, \$4.10

per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

HAY

Under date of March 9, Scott, Magner & Miller says:  
Receipts past week amounted to 1157 tons. Consumers are buying only for their immediate needs, the general opinion being that the market is not likely to take on any decided change one way or the other. So far as can be determined all of the stocks now held in the country will be used prior to the receipt of new crop. This, however, cannot be determined definitely as every shower of rain in different localities brings out a little more hay from farmers' barns that was being held against the possibility of no rain. This surplus of hay, known to the trade as the invisible supply which cannot be figured on definitely, sometimes amounts to a great deal more stock than one would have any idea of.  
Fancy Wheat Hay  
(light 5 wire bale) ..... 30.00@31.00  
No. 1 Wheat or Wheat and Oat Hay ..... 28.50@30.00  
No. 2 Wheat or Wheat and Oat Hay ..... 25.00@28.00  
Choice Tame Oat Hay ..... 28.00@30.00  
Other Tame Oat Hay ..... 25.00@27.00  
Wild Oat Hay ..... 24.00@26.00  
Barley Hay ..... 24.00@26.00  
Alfalfa ..... 24.00@26.00  
Stock Hay ..... 18.00@20.00  
No. 1 Barley Straw ..... 60@90

GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

SEEDS

Prices in round lots, lb.:  
Millet, recleaned ..... 4 1/2 @ 5 1/2  
Alfalfa ..... 20@21  
Flax ..... 6@6 1/2  
Hemp ..... 4 1/2 @ 5 1/2  
Rape ..... 2 1/2 @ 3

Citrus Fruit Market

Los Angeles, March 13, 1918.

No picking has been possible for several days because of the storm. The supply in Eastern markets is very light and prices are soaring even above those which have prevailed earlier in the season. Some spectacular sales close up to the \$8.00 mark have been made. Some seedlings and other than Navel fruits have held around \$5.00. Valencia's will be in the market very early.

Lemons are likewise very strong shipments.

Shipments

Shipments of oranges from Southern California to date since November 1, 1917: 3725 cars; lemons, 1290; total, 5015. To same date last season: Oranges, 11,163; lemons, 2161; total, 13,324. From Central California to date: Oranges, 1897; lemons, 109; total, 2006. To same date last season: Oranges, 4038; lemons, 161; total, 4199. From Northern California to date: Oranges, 202; last year, 842.

AT THE AUCTIONS

March 6  
New York: 8 cars oranges, 1 lem. Nav. \$3.70-\$6.10, Tang. \$3.30-\$3.50. Bloods \$2.70, lem. \$7.50.  
St. Louis: 6 cars. Nav. \$3.70-\$6.10, lem. \$4.40-\$6.70.  
Cleveland: 3 cars. Nav. \$3.30-\$5.85, lem. \$6.25.  
Boston: 3 cars. Nav. \$3.90-\$5.30, Seed. \$6.00-\$6.20.  
Pittsburg: 2 cars. Nav. \$2.55-\$6.25, Seed. \$1.10-\$5.50, lem. \$7.85-\$8.05.  
Cincinnati: 1 Nav. 1 lem. Nav. \$3.85-\$5.00, lem. \$4.25-\$5.75.  
March 7

DAIRY COMPETITION AWARDS

Continued from Page 339

tered Holstein cow, and by 10 cows in a grade herd, sired by a registered Holstein bull; two silver cups offered by the Holstein-Friesian Association of America, Brattleboro.

1st. A. W. Morris & Sons Corp., Woodland, Miss Valley Mead DeKol Walker, 819.42, 966.92.  
2nd. F. Stenzel, San Lorenzo, 540.24, 558.86.

16 a. For the highest record by a registered Ayrshire cow—1 silver trophy offered by the Pacific Rural Press, San Francisco.

E. B. McFarland, San Mateo, Willowmoor Vesta 4th, 612.06, 661.02.

17. For the largest production of butterfat during 10 consecutive months by a cow bred by the owner; one gold medal, awarded by the College of Agriculture of the University of California.

1 Gold Medal, A. W. Morris & Sons Corp., Woodland, Miss Valley Mead DeKol W., 819.42, 966.92.

18. For the largest production of butterfat during 10 consecutive months by 5 cows in a herd, bred by the owner; one gold medal awarded by the College of Agriculture of the University of California.

1 Gold Medal, A. W. Morris & Sons Corp., Woodland, 791.86, 851.52.

WEATHER CONDITIONS

San Francisco, Cal., March 9, 1918.				
—Rainfall—			Temp.	
Stations	Wk.	Season.	Norm.	Max. Min.
Eureka	1.61	18.63	33.77	56 44
Red Bluff	1.00	8.01	18.77	58 42
Sacramento	.81	5.85	14.81	60 38
San Francisco	.19	8.81	17.53	60 44
San Jose	.43	4.85	12.75	64 36
Fresno	2.00	7.50	6.96	64 42
San Luis Obispo	3.59	14.48	15.20	62 38
Los Angeles	2.30	9.37	11.96	70 44
San Diego	.58	3.94	7.71	62 46

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What kind are you going to buy this year? Every single White Leghorn we are hatching comes from eggs from the Hubbell White Leghorn Farm at Van Nuys, all stock Hoganized twice in 1917. Excellent strain crossed with genuine McFarland stock, large prolific layers. Our price only \$12 per 100. We also hatch many other varieties of chicks, ducks, turkeys, geese, etc. Our retail store is the largest in the world of its kind. Visit us. Free 66-page catalog, send or ask for it.

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WORLD'S LARGEST CHICK DEALERS



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Honey will save Sugar

The contented bee will collect from blossoms and ripened fruits materials that would otherwise be wasted; but in order that this be done, with the least inconvenience, requires a model hive and

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are models of convenience and furnish an ideal comfortable home for the industrious bee. They are made of clear, soft, straight grained Redwood, thoroughly seasoned, dove tailed, ready to put together. The honey frames are made from fragrant white pine, accurate and smooth.

Send for Free Catalog.

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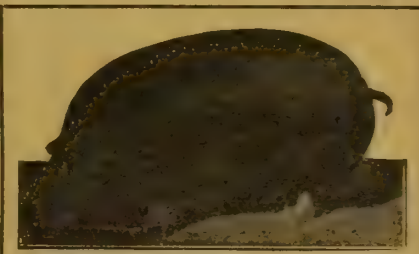
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M. Bassett

Hanford, Kings County, Cal.



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PREVENTED AND CURED PERMANENTLY

YOUR COWS MADE PROMPT. REGULAR BREEDERS BY

STERILOID



STOP LOSING CALVES

TREATMENT: If STERILOID is used at the first sign of

have a healthy calf. If your cows or heifers do not come in season, or fail to get with calf, use STERILOID. Cows get with calf after only one treatment. Write today for FREE BOOK. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with STERILOID. Also contains letters from breeders who have used STERILOID successfully.

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Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

A. L. TUBBS CO.

Callistoga - California



*A new tire that has the goods  
—and it looks it!*



*Made also with ribbed tread*

A BIG TIRE—and a big-button, non-skid tread—with endurance, beauty, resiliency, speed, economy, safety, comfort, luxury—incorporating all the elements of Fisk quality and experience plus the desirability of cord construction.

It is backed by an old-fashioned trademark which enjoys a world-wide reputation for integrity—and the utmost confidence of buyers everywhere.



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Time to Re-tire?  
(Buy Fisk)

It has everything that brains, care and practical knowledge can put into a tire—with a lot of extra miles that you can obtain only from Fisk bigness, Fisk quality and a countrywide system of complete and fully equipped Service Branches.

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# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

March 23, 1918

SAN FRANCISCO

## Wonder Crop and Mortgage Lifter



A Pioneer. Since California has been a State it has grown alfalfa;  
now over \$40,000,000 worth annually.



# Wade's Drag Saw More Than Pays for Itself in One Season

## —saws 25 cords in a day

HUNDREDS of WADE Gasoline Drag Saws are making light work of sawing logs into short lengths for farmers all over the West. It is the most popular farm machine that has ever been put on the market, because it is a big time, labor and money-saver. The initial and upkeep costs are almost nothing when compared to the immense savings it makes for you in a single season.

The New 1918  
Model of the  
**WADE**  
DRAG SAW  
is Now Ready

All 1918 Model Wade Drag Saws are to be equipped with our new improved 4 H. P. ENGINE—we have INCREASED the HORSE POWER of the engine WITHOUT INCREASING THE COST. This 4 H. P. Engine gives you an abundance of power and, therefore, a greater output per day—be sure to get a WADE—accept no substitutes.

The WADE is made of the best materials throughout, and the whole machine is constructed for hard work in the woods — practically never gets out of order, and is always ready for use. The husky little 4-H. P. engine used on the Wade fairly hums the 6-ft saw through your toughest logs. (Larger saw blades on special order.)

Wade's  
Gasoline Wood Saw  
(Portable)

**\$165** DELIVERED  
Anywhere in the U.S.A.  
1918 Model with 4 H. P. Engine

One man can move the WADE along the log, while two men can easily move it from log to log. It weighs only 285 pounds complete. The WADE is especially low in upkeep cost and gasoline used—the tank holds two gallons (enough to cut 16 to 20 cords). It is the cheapest, easiest, fastest way for you to saw your logs.

## Does 10 Times the Work of 2 Men!

Think of it! TEN TIMES as much as two men can do! The WADE will easily cut 25 cords of wood in one day.

Can you afford to pay for slow, expensive day labor when you clean up with a WADE the same amount of work in one-tenth the time?

Fuel and labor are higher than ever before—and present conditions indicate that they will continue so for a number of years—get a WADE Drag Saw and keep your labor costs down and sell your wood while it is high in price.

A good many WADE Drag Saw owners are making good money by helping their neighbors saw their wood.

Send today for this interesting booklet, "How Dan Ross Saws Forty Cords a Day." Dan Ross lives at Corbett, Oregon, and has used a WADE Drag Saw ever since they first came out. You will profit by reading his experience.

Fill in Coupon Today

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PORTLAND, ORE. - SPOKANE, WASH.

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How Dan Ross  
Saws Forty  
Cords a Day

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Gentlemen:—Please send me the Booklet, "HOW DAN ROSS SAWS FORTY CORDS A DAY," also full information on the NEW 1918 MODEL WADE DRAG SAW.

Name .....

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# California Cultivator

Vol. L, No. 12

LOS ANGELES: MARCH 23, 1918

One Dollar Yearly

## Dairy Made Butter

One of California's Most Practical Dairy Product Handlers, E. H. Hagemann, Writes for Cultivator Readers of Best Conditions of Cream and Best Methods of Home Making of Butter



GOOD butter can be expected only to be produced from good cream. Milk given by healthy cows will nearly always, when properly milked and handled, yield good cream, that is, cream

possessing a sweet and agreeable taste and odor. If through carelessness or lack of understanding of the requirements, the milk and cream are not produced and cared for properly, the cream will usually acquire bad flavors which cannot be removed and which go directly into the butter. Bad flavors may be caused by certain materials consumed as food, such as onions, cabbage, turnips, rag-weeds and spoiled feeds, or by cream absorbing odors of stables, cellars, kitchens, etc.; but by far the greatest source of bad flavors is through the growth in milk or cream of bacteria introduced into the milk by dust settling from the stable air or small particles of dirt or manure falling into milk pail from the cow. Many more are introduced by old and carelessly washed milk utensils.

Brushes are to be preferred to rags for use in washing dairy utensils because they get into the corners much better, and rags invariably harbor and carry bad flavors and bacteria. All utensils should be washed clean, scalded and allowed to dry in the sun if possible. Mineral or soda washing powders are to be preferred to soap for cleaning utensils.

Time, equipment and conveniences are often lacking in the farm dairy, and while the necessary equipment and conveniences should be at hand, it is not necessary for them to be elaborate for the production of good cream and butter, if one has the understanding of the care necessary and proper time at which the work of churning, etc., is to be performed.

### Milking and Care of Milk

Milking should not be done just after handling hay or bedding, or when the stable is full of dust or bad odors from any cause. Milking should only be done with clean dry hands; milking with wet hands dipped into the milk is filthy. The milk should be removed from the stable as soon as possible after milking to a clean, cool, airy place, free from dust, flies and odors. If cream separator is used the work of separating should be done as soon as possible after the milk is drawn and the cream cooled directly from the separator. If milk is set in pans it should be given preliminary cooling by setting can with milk in cool water for a while, during which it should be stirred to remove animal heat, and then poured into the pans, as pan setting of milk ordinarily takes too long for cream to rise to get good quality.

Precooling the milk before setting is important to have the cream rise for skimming as quickly as possible. Pan skimming should be done before

the cream gets too old and sour; it should not be left longer than 24 hours. Pan raised cream should be stirred a little after each skimming so it will have a well mixed appearance, free from lumps, and kept cool till ready to churn. Too much milk should not be skimmed with the cream as very thin cream is one of the causes of butter not coming. A cream should be skimmed that will test about 35 per cent butterfat.

### Ripening the Cream

Holding the cream too long before churning, causing it to become old and sour, is the cause of more bad flavored butter than any other thing. Do not think because there is a small amount of cream it is not necessary to churn more than once a week, but aim to churn at least two or three times a week, or while the cream has yet an agreeable milk acid flavor instead of a very sour old taste.

For holding cream have a regular can fitted with a cover through which the handle of the stirrer may project. The second can should be smaller,

commercial starter or by selecting several samples of milk in perfectly clean quart jars and allowing it to sour. Select the one that shows the most solid curd and the cleanest flavor for your starter. Mix this with the desired amount of selected whole milk from a cow that is giving the most milk or from a cow that was recently fresh, and allow this to stand at a favorable temperature for a short time or until it is sour enough to use in the cream.

### Churning

The barrel churn, which is made in different sizes, is a very popular churn for farm butter making. The churn should be kept in a sweet and clean condition and should be rinsed with cold lime water just before cream is put into the churn.

Lime water is made in the following manner: Slack eight or ten pounds of fresh lime in ten or twelve gallons of water, stir thoroughly; then let stand over night to settle, and use the clear lime water from top of vessel, when water can again be added

too soft or too firm when ready to be worked.

### Salting

When all the wash water has drained off close outlet of churn and evenly sprinkle the salt over the surface of the butter at the rate of one ounce of dairy salt to one pound of butter. Then sprinkle equal amount of water to salt in weight over the salt and butter in churn, and mix butter, salt and water with butter spade or ladle. Close cover of churn tightly and revolve churn slowly about ten times and allow it to remain in the churn with the water and salt solution about ten or fifteen minutes before working. A certain amount of water must be present in the churn with the salt, as the water dissolves and is a distributor of the salt, otherwise there is danger of streaks in the butter and uneven coloring. One gallon of cream testing 30 per cent should make from two and one-half to three pounds of finished butter. Therefore the amount of salt to use can be estimated very closely; also one should never fail to judge his product by taste.

### Working

For large dairies the combined churn and worker is the best, while for the smaller the V shaped lever or square shaped roller workers give good satisfaction. For very small amounts the butter can be worked in a butter bowl by means of a ladle. Working should be done by pressure instead of by rubbing or sliding of the ladle or lever over the butter, turning the outer edges of the butter over to the center after each operation, until the butter has a smooth compact appearance. It should not be gritty with undissolved salt and when cut into with a stretched wire should have a uniform color and not appear streaked.

### The Package

Put the butter on the market in a package that is neat and attractive. The one-half, one and two pound block prints, wrapped in parchment wrappers, with a neat design of name of dairy and maker printed on outside of wrapper or carton, are neatest in appearance. Neat butter molds of different sizes for printing butter can be secured from all dairy supply houses.

### Emergency

If the flavor of the cream for a churning for some reason cannot be controlled and develops a strong rancid, old or very sour taste, mix thoroughly with a little water one-half to one teaspoon of common baking soda, and add per gallon of cream. The soda will neutralize the excess acid in the cream and partly overcome old flavors. Stir thoroughly and allow to stand 15 minutes. Add starter as per directions and in from two to three hours the cream will be ready to churn. If starter is not at hand, add one pint of fresh sweet milk, or half starter and half sweet milk, but starter is to be preferred.

### ONLY AMERICA CAN HELP

"Our position is critical, particularly until the next harvest, but the United States can save us.  
"You Americans have the men, the skill, and the material to save the Allied cause."

—Sir Joseph Maclay, British Shipping Controller.

but of size sufficient to hold all the cream of one skimming. Cool the cream in this can before pouring it into the large can. All cream intended for one churning should be mixed together and held not less than three hours at churning temperature before churning takes place.

### Use of Starters

The value of starters in butter making cannot be overestimated, either on the farm or in the well equipped creamery. While butter can be made without a starter, it cannot be made as uniform in quality. To make the starter, whole milk or skim milk can be used. Take a certain amount of either, depending on the amount of cream to be churned, one pint of the starter to gallon of cream or one gallon of starter to ten gallons of cream, or about ten per cent. Place this milk in a sterilized covered vessel where it can be kept at a temperature of 75 to 85 degrees Fahrenheit. It should coagulate or become clabbered in from 18 to 24 hours, and should be ready to use and be mixed with the cream not less than two or three hours before churning. A starter is good when the coagulum or clabber is solid, without gas or airholes throughout the mass, and has an agreeable acid taste.

It is sometimes impossible to obtain a good starter from the mixed milk of the herd. This is especially true in the fall or when a number of the cows go dry. In that case better results can be obtained by using a

each day, stirred and allowed to settle, which will last for several months, making a new supply when it loses its strength.

Strain the cream into the churn when the cream is the right temperature. What that temperature should be must be determined for each farm. It should be such that with the churn not more than half full the butter may be churned in 30 to 35 minutes, which varies with the season: summer, 52 degrees to 58 degrees Fahrenheit; winter, 58 degrees to 64 degrees Fahrenheit.

The cream during ripening should be maintained at such a temperature that it will not be necessary to change the temperature many degrees to bring it to the required temperature for churning. The churning should stop while the butter granules are small, about the size of wheat grains, when the butter should be drawn off.

### Washing

When the butter milk has all drained off, sprinkle cold water over the butter without revolving the churn, until the water runs out quite clear, then close the outlet and add as much water as there was cream in the churn. Close the cover and revolve the churn 15 or 20 times at the same speed as for churning and allow the water to drain out thoroughly. The temperature of the wash water should be about the same as the buttermilk. It may be necessary to have the wash water a little warmer than the buttermilk in the winter and colder in the summer. The butter should not be



## Value of Manure

Written for California Cultivator by W. H. Kaufman



IN a recent issue of the Cultivator is a very suggestive article concerning the value of manure. This subject is of enough importance to warrant our thinking clearly about it.

The value of manure is equal to the value of the extra crop it will produce less the cost of application. This at once opens a long list of contingencies: How much will it increase the yield in pounds? What will the crop be worth per pound? To say that a ton of manure has so many

pounds of nitrogen; that this equals so many pounds of a given nitrate, and that this particular sort of nitrate costs so many cents per pound—all this gets us nowhere, for possibly our particular field does not need nitrate. A ton of manure is worth as much as a hen, and it all depends on what sort of manure and what sort of a hen! To give a fixed value to horse manure, hen manure, and so on, is useless.

Some years ago I wrote to several experiment station superintendents and also to the department of agri-

culture at Washington, asking whether it would pay me to haul out peat on my field. Every answer discouraged the plan; most of the answers stating that peat had little plant food. Not being willing to accept this consensus of opinion I hauled out many loads of peat, spreading both peat and barnyard manure on large areas and also using much chemical fertilizer. I could see no difference between the peat and the barnyard manure, but could see no result whatever from chemical fertilizers. This proved that my soil did not need chemicals but did need humus. Before anyone can give a sensible answer as to the value of manure he must know three things:

First: What crops will be raised on the field during the term of years which the manure will affect the crops.

Second: What will be the selling price of those crops.

Third: How much a ton of manure will increase the successive crops.

Ten tons of manure per acre on river bottom lands, to be cropped to oats, will cost the farmer \$40 per acre, will damage his crops that much the first year by causing the oats to fall down. I suppose it is a conservative estimate to say that ten tons of manure per acre on oat land, rich river bottom land, would mean a total loss of considerably over \$100 per acre (during three to five years); say \$10 per ton. On my particular fields (a close clay) I would rather have a ton of straw than a ton of hen manure; on a light sandy soil the straw might be a positive damage, the hen manure very valuable. I mean to make it perfectly clear that there can be no definite, no fairly sensible answer to the question of the value of a ton of manure. It all depends on whether this particular kind of manure is adapted to the particular soil and the particular crop, and after that we must know just how great will be the increased yield during the term of years and what the price of a unit of that crop may be.

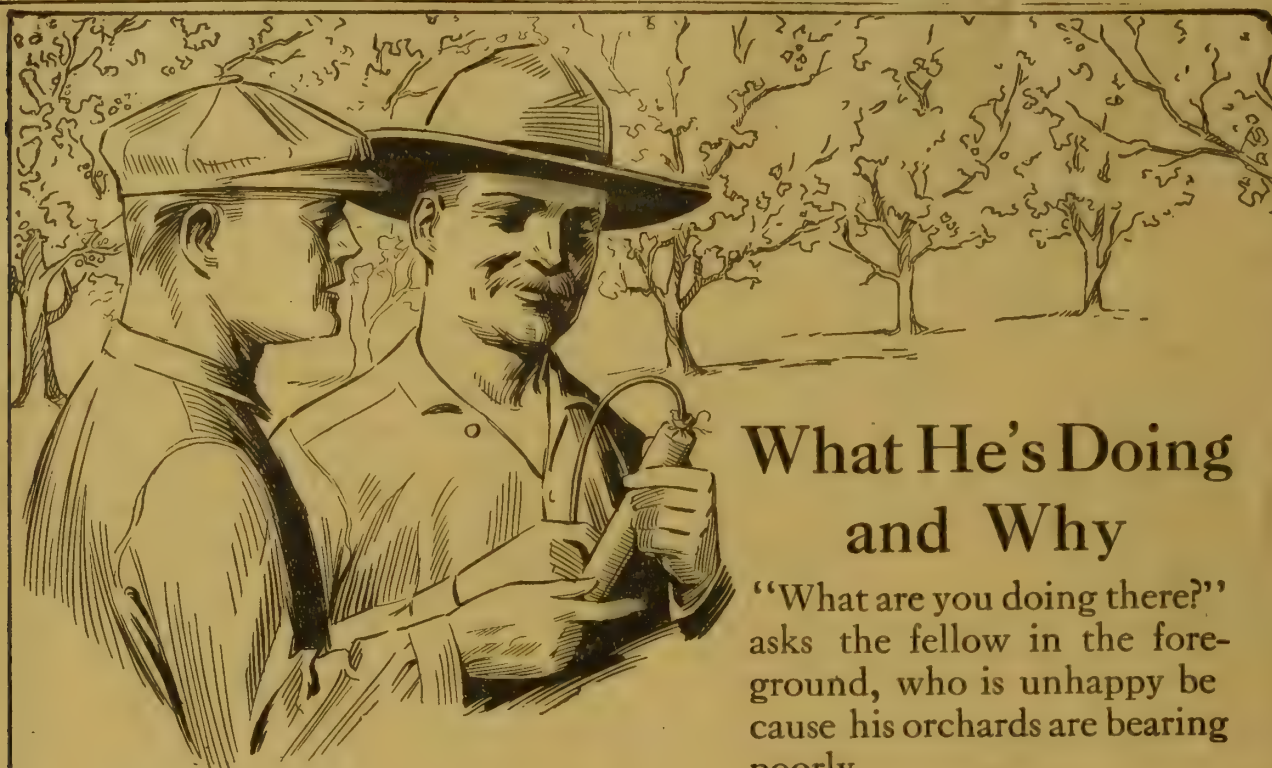
For some 12 years I have specialized in field peas. My land needs humus; so I plow under the vines. I might feed the vines, but they would not be worth as much when turned to manure, for I want not immediate plant food, but humus, and straw lasts longer than manure. Last year I had something like 125 acres of peas, say 150 tons of pea straw. This keeps my soil increasingly fruitful. The 12 years' cropping has left my soil much better than when I began. From some of this land I will sell over \$600 worth of peas from last year's crop, after 12 years' cropping, without rotation or commercial fertilizer or barnyard manure, simply pea straw.

Peas will yield about 20 per cent to 25 per cent more pounds of grain than will oats; and on an average year peas are worth about three to five times as much as oats per pound; and also peas will continually fertilize the soil, while oats will deplete the soil.

My farm is upland; an alder bottom with from eight to 18 inches of soil, then a yellow clay subsoil. As the soil is very rich, tilth is more important than any other one factor; and straw humus, or straw just before it becomes humus, is very desirable.

I found that a ton of average horse manure from city stables, planer shavings bedding, brought me the first year about a half ton additional potatoes, apparently regardless of the amount applied. I have had on small areas, very heavily manured, over 40 tons per acre of marketable potatoes. The manure cost about a dollar a ton to haul (I brought back a load when I hauled farm products to town) and as the average price of potatoes on my farm was at that time about \$12, the manure was worth about \$5 per ton.

As dry pea straw is about as rich as barnyard manure (that is for peas on my land it is about equal), and as pea straw is all prospective humus, while barnyard manure is three-fourths water, I count pea straw as worth, ton for ton, four times as much as barnyard manure—for peas on my land. For other crops on other land it might be worth much less than



## What He's Doing and Why

"What are you doing there?" asks the fellow in the foreground, who is unhappy because his orchards are bearing poorly.

"I'm giving my trees a new lease of life," answers his prosperous neighbor whose orchards always do well. "I'm getting ready this fall for a bumper crop next year. I'm breaking up the ground around the roots of the trees with

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"By blasting holes between the rows of trees you shake up ground that you can never reach in any

other way. And how the roots do grow through it!

"If you have never tried this on your orchards it's time you did. Write today for the book, 'Progressive Cultivation', which tells all about it. It is sent free on request."



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California

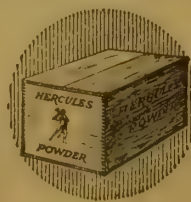


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Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

### Prices

Per 1000

10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

Yucca Manufacturing Co.  
1880 Willow Street, Los Angeles, Cal.

## THE SELF-OILING WINDMILL

has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

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SMITH-BOOTH-USHER CO.  
Southern California Distributors for  
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Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

Rogers Brown &amp; Co.

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Los Angeles, Cal.

barnyard manure or much more.

Taking a broad average of soils, crops, prices, farmers and seasons, one might start with an estimate that manure is worth \$5 a ton, and then by experiment find out what it is really worth on his farm, with his soil, his crops, his prices. To get down to so fine a point as to say that oat straw is worth \$3.30 and wheat straw is worth \$2.58 is quite absurd. Such minute statements imply, and lead the novice to believe, that the author has scientific data as to what the novice's farm needs. For plant food the liquid manure is worth more than the solid. For humus the solid

is much more valuable; although the liquid manure will greatly add to the tilth of clay soils, thus having the effect of humus, although it really seems to be a chemical affair.

If for a given crop a given field does not need manure (as an oat crop on river bottom soil) manure may be a damage and no help whatever.

Let's get rid of the idea that farming is a cut-and-dried affair. There is no business or profession that requires more intense application than farming; and every farmer has to work out a system for his own particular farm. When he does this he will be a successful farmer.

## The Malaga Raisin Industry

Louis G. Dreyfus, Our Consul at Malaga, Spain, Writes of Spanish Method of Handling This Fruit.



THE two principal varieties of grapes grown in the Malaga district are the muscatel and the Pedro Ximen. Raisins and wine are both made here from the muscatel and wine from the Pedro Ximen.

The vines are not trained on arbors, but are pruned to form bushes that cover an area of about one square yard at harvest time. The vines are set out in rows ten feet apart. During the spring and summer they are carefully cultivated and sprayed with sulphate of copper to destroy insects. The grapes begin to ripen about the first of August. Laborers with large flat baskets or trays gather the fruit. It is not all cut out at one time, but the field is gone over periodically and only the ripe clusters are cut from the vine with scissors.

### The Drying Process

The raisins produced near Malaga are not treated with sulphur, lye, or oil, as is the practice in other parts of Spain. In or near the grape field there is thrown up an earth terrace inclined toward the setting sun. This is divided into sections about ten yards long and two yards wide, around which a low brick or stone wall is built, to protect the raisins and to support the canvas stretched over them at night or during inclement weather. The object of this slanting surface is to keep the sun constantly shining upon it. The bottoms of the drying beds are covered with fine gravel to retain the heat.

Immediately after being gathered, the grapes are spread out on the beds for exposure to the burning sun. At nightfall the raisins are covered with canvas to protect the fruit from the heavy dew, and, as stated, the canvas is also spread over them in the event of rain. There is rarely any rain in this section during May, June, July, August and September. During the process of drying the grapes that remain green or become spoiled are carefully removed, and the clusters are turned from time to time in order that they may color uniformly. The drying process takes about three weeks, so that the first raisins of the season are ready for packing about the end of August. Heaviest shipments go forward in September.

### Packing Methods and Materials

Before packing the raisins are sorted and graded. After small and imperfect raisins have been cut off the clusters are laid in boxes lined with white paper and containing usually 22 or 25 pounds of fruit. Good fruit which has become detached from clusters through shaking and raisins cut from small and irregular clusters are separated from the rejected fruit

and are also packed for shipment. The boxes of raisins are then brought to Malaga by the growers for disposal to the shippers and dealers. The prices realized vary considerably according to the quality of the fruit and the quantity of the crop, also according to the condition of the industry in the other countries where raisins are produced and the general demand in the world markets.

It is estimated that one-third of the raisins exported to the United States go forward in the original packing as received from the vineyard, the boxes being opened at Malaga for inspection and to replace the paper lining by a fancy paper dressing. The rest are repacked in one, two and five pound fancy cartons. There are two methods of packing raisins for export, the "French" and "English." The "French" method, so called from the fact that the fruit is packed according to the demands of French and Continental buyers, is to pack the raisins either in clusters or loose, just as taken from the drying beds and without manipulation or pressing. The "English" method is used especially for British and American markets. Under this method the raisins are pressed out between the thumb and forefinger (called in the trade "thumbing" or "facing") in order to flatten out the raisin to improve its appearance.

The boxes in which the raisins are packed are usually obtained under contract from box makers. They cost from 60 to 90 centimos each, and are usually made of pine imported from northern Spain. Foreign shooks have not succeeded in competing because of the difficulty of recovering the drawback when the boxes are exported. The wrappers and cartons are sometimes very elaborate lithographs. Formerly Germany supplied a large portion of the paper goods and ribbon used; at present these are mainly of national manufacture.

### THE THIRD LIBERTY LOAN

The campaign for the third Liberty Loan will be opened on the 6th of April, the anniversary of the declaration of a state of war between the United States and Germany.

The amount, terms, and conditions of the loan are dependent upon further legislation and will be announced as soon as congress has granted the necessary powers.

Secretary McAdoo chose the 6th of April as the day to open the campaign as the most fitting date to call for a patriotic response to the summons to duty to every American, to ask from the people at home the same fervent patriotism that actuates our gallant sons on the battlefields of France and on the waters of the Atlantic.

## PRUNE TREES



COATES FRENCH  
ROBE DE SERGENT  
SUGAR  
STANDARD

on Myrobolan and Almond root.  
First Class four to six foot and six to eight foot.

Absolutely Clean

Almonds Apricots

on Almond and Myrobolan. Fine stock four to six feet. Write, wire or phone at once. All trees dormant and in perfect condition.

LEONARD COATES NURSERY  
COMPANY, INC.

Morganhill California

## Kill Squirrels Gophers

The only exterminator that is 100 per cent efficient and guarantees results or money back.

**KILMOL**  
SQUIRLEGOPHENE

It contains special chemicals. Kilmol fumes not only asphyxiate the squirrel or gopher, but eat away their lung tissues. Even should the animal reach fresh air, he can't survive. No other exterminator is as effective as Kilmol. That's why Kilmol costs a little more—but economy in labor warrants the advanced price. For best result use repaired waste balls saturated with Kilmol.

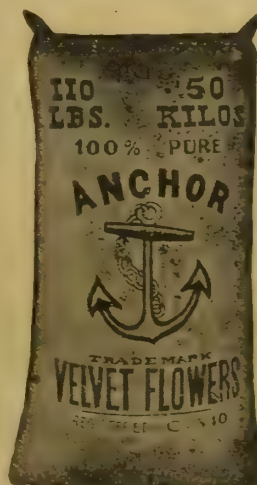
New formula of U. S. Government Poisoned Barley is effective in dry weather. Kilmol and U. S. Government Poisoned Barley are used and endorsed by the biggest and most successful ranch owners.

Remember, results guaranteed or money refunded.

Your local dealer carries Kilmol, Waste Balls and U. S. Gov't. Poisoned Barley.

Mfd. by Herbert F. Duzan, 1170 Sutter St., San Francisco

## SULPHUR



Fleur de Soufre  
Anchor Brand,  
Velvet Flowers of Sulphur and Eagle Brand.

Packed in barrels and double sacks are the finest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVENING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

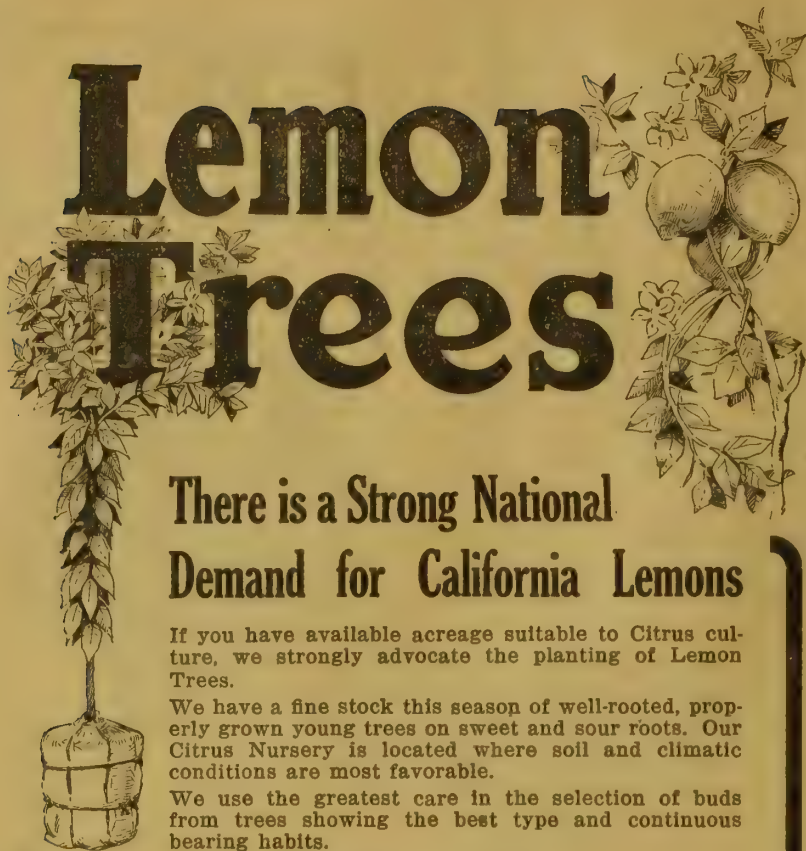
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BOUGHT AND SOLD  
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# Lemon Trees



## There is a Strong National Demand for California Lemons

If you have available acreage suitable to Citrus culture, we strongly advocate the planting of Lemon Trees.

We have a fine stock this season of well-rooted, properly grown young trees on sweet and sour roots. Our Citrus Nursery is located where soil and climatic conditions are most favorable.

We use the greatest care in the selection of buds from trees showing the best type and continuous bearing habits.

### The Eureka Lemon

Medium size, sweet, smooth, glossy, abundant acid and very little rag. Popular on account of its heavy summer crop, maturing when Lemons are in great demand.

### The Lisbon Lemon

Medium size; sweet rind and strong acid; few seeds; an excellent keeper; fruit very uniform. Tree a strong grower, thorny, but thorns decrease as tree grows older. Very popular in the San Joaquin Valley. Very hardy and a prolific bearer.

### The Villa Franca Lemon

Oblong; rind thin, without any trace of bitterness; pulp acid, juicy, nearly seedless. A fine commercial variety.

### Illustrated Catalogue Mailed Free

This year's 96-page Catalogue contains some very interesting and valuable information on the planting, pruning and general care of Citrus Trees. Every grower should have a copy for reference.

**Fancher Creek Nurseries**  
213 Holland Building  
**Fresno, California.**

## Orange Seed Bed Stock

Both Sweet and Sour. Excellent Fiber Roots  
From \$20 to \$30 per Thousand

**W. G. Hall** Glendora, Cal.

## WALLACE NURSERIES

(Established in 1871)

Growers of selected 1, 2 and 3 year old

### Orange, Lemon, Grapefruit Trees

Conditions encourage immediate planting. DON'T DELAY. Write for our prices. Trade in your surplus property. SALES OFFICE: 502 I. W. Hellman Bldg., Los Angeles.

## 100,000 Sour Orange Seedlings

Splendid-big plants, 10 inches and up.  
1920-1921 should be "high tide" years for Citrus trees.  
Get in on this tide. Write us today for prices.  
Selected Navel, Valencia, Lemon trees. Fruit-wood buds.

**McMillan--Graffen Nurseries**

Address, Puente or Spadra, Cal.

## CITRUS Seed Bed Stock

Sour Orange Seed Bed Stock, strong, thrifty, one year plants 10 inches and up. Absolutely free of scale.

**Walker-Hubbard Nursery Co.**

San Fernando, Cal. Office First National Bank Bldg.

## Dedication of Citrus Experiment Station



THE citrus experiment station buildings, located in Riverside, are to be formally dedicated, Wednesday, March 27, 1918. This exercise stands

as an official recognition of the establishment of a working branch of the college of agriculture, University of California, devoted to typical Southern California problems in agriculture.

The scope of the institution, as now organized, is broader than its name implies. Work of a fundamental nature is being undertaken, dealing with the various phases of soil and crop management, results of which will have a bearing on all forms of

the citrus experiment station may help to lead to the adoption of more permanent, better balanced, and more profitable practices. It is to this end that the buildings are to be dedicated.

### Program

9:30 A. M. Auditorium Polytechnic High School.—"Dairying as a Factor in the Citrus Industry," by Dean H. F. Van Norman, University Farm School, Davis; "Development of California Fruit Industries," by Prof. E. J. Wickson, former dean and director, College of Agriculture and Agricultural Experiment Station, Berkeley; "The Trend of Discovery in Evolution and the Utilization of Its Concepts," by Dr. D. T. MacDougal, director of the department of Botanical Research, Carnegie Institution, Washington, D. C.



Main Building Citrus Experiment Station

commercial plant production. For example, studies are already under way looking toward the determination of those practices of soil management that may be conducive to a permanent agriculture under local conditions, regardless of the crops grown. The adaptation and improvement of various field crops to meet the soil, climate and disease conditions of the surrounding territory is a function that will receive no little attention.

The efforts of the scientific staff, which are centered around the laboratories and field plots at Riverside, are by no means confined to these alone. Studies in all branches of the work, crop adaptation, disease occurrence and control, moisture requirements of crops, soil management, are undertaken in numerous locations throughout Southern and Central California to supplement the local work.

It is not expected that this institution will have a great effect directly in solving the problems of the individual farm. Such problems, so far as the college of agriculture can assist in their solution, will be handled through the farm bureaus and county agents. The investigations originating in this institution should, however, furnish the basic knowledge and understanding of agricultural facts upon which the solution of individual problems may be intelligently founded. Further than that, the farm advisers and the experiment station staff are all parts of one large organization and thus they will constantly be in sympathetic touch with each other.

Thus far the advance of agriculture in Southern California has been in accord only with temporary or immediate economic ends. Permanency of agriculture, as well as social, conditions has not entered greatly into the development. It is entirely conceivable, and sincerely to be hoped, that

2:00 P. M. Dedication Exercises, Citrus Experiment Station.—Dr. Thos. F. Hunt, dean and director, College of Agriculture, Agricultural Experiment Station, presiding; address, President Benjamin Ide Wheeler, University of California; "The Work of the Citrus Experiment Station," by Dr. H. J. Webber, dean and director; "Irrigation and Agricultural Control," by Dr. John A. Widtsoe, president, University of Utah, Salt Lake City.

7:30 to 10 P. M.—Public reception, director's residence.



Scenes at Citrus Experiment Station



## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

### Debt Outlawing

How long can money due for wages remain unpaid before it outlaws?—Subscriber, Corona.

Unless the debt is evidenced by some contract or acknowledgment in writing the statute of limitations would run limit at the expiration of two years from the date upon which the laborer was entitled to receive his pay.

### Road

A sufficient petition for establishment of a road has been made to the board of supervisors; viewers have been appointed and have surveyed the road which has been traveled for over 50 years. Can a landowner now change the road from where it has been surveyed?—Subscriber.

The viewers are simply appointed

### Homestead Title

A man and wife take up a homestead claim and reside upon it until they prove up; then the husband mortgages it without the wife's knowledge. Is the property bound by such mortgage without the signature of the wife?—Subscriber.

Prior to April 27, 1917 the husband was entitled to sell or encumber the community property without obtaining the signature of the wife; therefore, if the mortgage was executed prior to that date it would bind the property. By amendment to the code effective upon the date mentioned the requirement is that the wife must join in any instrument by which the community real property is leased for a period in excess of a year, or by which it is sold, conveyed, or encumbered; provided, however, that such instrument although executed solely by the husband to a third person taking in good faith without knowledge of the marriage relation shall be presumed to be valid and that no action may be commenced to invalidate the instrument after the expiration of one year from the date of the recording



Somewhere in Arizona

Sod plowing with three-bottom 12-inch gang. Note even furrows and depth of plowing. The tractor is surely doing its bit in greater food production.

to make a report of the conditions to the board of supervisors. After the report is in the board must appoint a day for hearing the report and give notice of such hearing at least two weeks before the same by publication in a newspaper in the county. At such hearing the board hears all of the parties interested for or against the road and may thereupon declare the report of the viewers to be approved or rejected in whole or in part. Action by the board which would constitute an abandonment of such road as mentioned would doubtless free the land of the right of way for public use; such action, however, could not prejudice purely private rights.

of the instrument in the office of the county recorder.

### Contract of Minor

A boy 16 years of age who is living with me, but who is no relation, makes a contract for a course in a correspondence school. I also signed the agreement. Our signatures were obtained upon the representation of the agent of the school that the lessons were of such nature that even with the insufficient education which the boy then had he could readily understand them. He, however, after the first lesson found it was impossible for him to understand and so informed them. He had paid them \$25. They are now threatening suit. Can they recover against the boy or myself?—Subscriber.

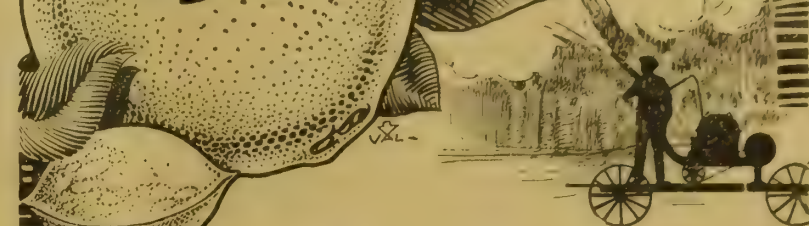
A contract of a minor under the age of 18 years relating to any personal property not in his immediate possession or control is absolutely void. The school not only cannot recover on the boy's contract, but he can recover the \$25 which he paid. Upon proving the falsity of the representations made to induce the elder person to sign the contract, it is highly probable that a court would not give judgment against you, as book agents and correspondence schools are not in high favor, and the falsity of the representations would vitiate the consideration for the guarantee, if such was made.

### FARM BUREAU MEETING POSTPONED

The Pomona, La Verne, Claremont farm bureau center meeting scheduled for Pomona high school the 22nd has been put off one week—till the 29th.

Yucaipa Valley, San Bernardino County, is hoping for early establishment of a cannery.

# Save the Walnut and Orange Groves by Dusting



## With a Niagara Dusting Machine

This machine saved many groves last season by destroying aphids with Niagara Tobacco Dust mixed with lime. The "Niagara way" is the most successful method of destroying Red Spider. The Niagara is the greatest time and labor saving machine for destroying pests on the market. There is a Niagara Duster for every purpose. Write for descriptive folder and ask about Niagara Dusting Sulphur. The Niagara is endorsed universally. Save your crops easily and at little expense.

### Western Distributing Agents

F. A. FRAZIER

325 13th Street  
Oakland, Cal.

OR

*German*

Established 1871  
Seed & Plant Co.  
325-329-330  
SOUTH MAIN STREET  
LOS ANGELES - CAL.

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

## A Schmeiser Leveler of the "Giant" Type

WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresno to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

Send today for full information and our latest catalog of earth-moving machines.

## Schmeiser Manufacturing Company

22 Mechanic St.

Davis, Cal.

Manufacturers of

Sure Pop Almond Hullers and Separators, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises, and Schmeiser Portable Automatic Hay Derrick. We sell the Martin Ditcher and Grader.

## GARBAGE TANKAGE

9 Units Nitrogen  
7½ Units Phosphoric Acid  
3 Units Potash

All for \$60.00 f. o. b.  
Los Angeles

Write for Free Fertilizer Booklet C

SOUTHERN CALIFORNIA  
FERTILIZER CO., INC.

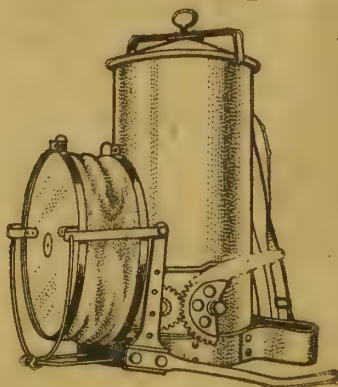
602-610 Kerckhoff Bldg.  
N. E. Cor. 6th and Main  
Los Angeles



## Red Spider and Mildew

Are Quickly and Cheaply Destroyed  
with Sulphur if Applied with the

## AMERICAN BEAUTY DUST SPRAYERS



Grass Valley, Calif., Sept. 25, 1917.  
The California Sprayer Co.,  
Reedley, California.

Gentlemen: Yours of September 18th just received, and as you wish me to express my opinion of the American Beauty Dust Sprayer, I will say that I am very well pleased with the machine. Have not had my grapes so free from mildew in the last ten years as they are this year. I have used one other sprayer, a machine, but it never did give satisfaction.

Yours very truly,  
O. L. TWITCHELL, Sr.

Get them at your dealers, or send us

\$16.00 for the Standard size, or  
\$13.50 for the Junior size.

We will send the machine on one week's free trial. If it is not satisfactory return it, and we will refund your money.

Send for Our Free Book

## THE CALIFORNIA SPRAYER CO.

6001-6029 Pasadena Ave., Los Angeles, Cal.  
Reedley, Cal.



## Ornamental and Fruit Trees

We have for sale this season a magnificent stock of Fruit and Ornamental Trees, Climbing Plants, Shrubs, Palms and Roses.

Write for prices on Cherry, Walnut, Citrus and Olive Trees, and Resistant Grape Vines.

Send for Illustrated Catalog and Price List.

## California Nursery Co.

Niles, California.

P. O. Box 406

## Larger Crops

ARE A NECESSITY THIS YEAR  
INCREASE YOUR CROPS  
AND PROFITS

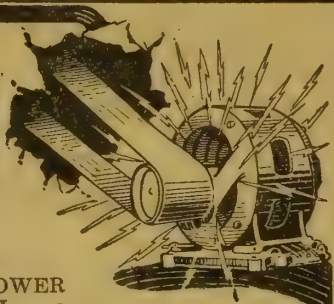
Have sufficient irrigating water independent of the rains. CROCKER WHEELER ELECTRIC MOTORS will help by furnishing ECONOMICAL POWER for pumping and other purposes. Insure your profits. Don't wait. Write or call now for information on these Motors. Submit your pumping problems to us.

### SMITH-BOOTH-USHER Co.

The Pump and Engine House of the  
Pacific Coast

Exclusive  
Distributors

LOS ANGELES



### DEALERS

We have a very liberal proposition for unoccupied territory—write for further particulars.

Corys

## THORNLESS Blackberry

Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

Ekstein Nurseries

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# LIME

Pulverized Limestone.....\$3.35 per ton  
Ground Limestone.....\$2.50 per ton

This is the One Element Lacking in  
Most California Soils. Write for Booklet  
Riverside Portland Cement Co.

640 Title Insurance Bldg., Los Angeles, Cal.

When writing advertisers, mention The Cultivator.

## The Farm Home

Written for California Cultivator



NO CLASS of home grounds may be made to appear as comforting and satisfying, at moderate cost, as those of the farmer. They would, as a rule, but have to harmonize with their surroundings. The up-to-date farmer knows full well the value of keeping his livestock comfortably housed and well cared-for. Therefore, the very foundation of the institution suggests shelter, protection, snugness, somewhat of seclusion, and above all, comfort; for the latter means dollars and cents to him and his, and must be

farms; and worked upon them, too, where every modern piece of machinery was obtained to further farm operations, but the wife still used a washboard on Mondays, old-style flat-irons on Tuesdays, a dasher churn on Wednesdays, and so on throughout the week. But this was not in California, and it occurred more than 30 years ago. Woman's lot is now much easier and as a rule in California her lot is as comfortable as that of any farmwife in this country. Further than this, we have some farm homes that are nothing less than superb; in fact,



Near Santa Barbara

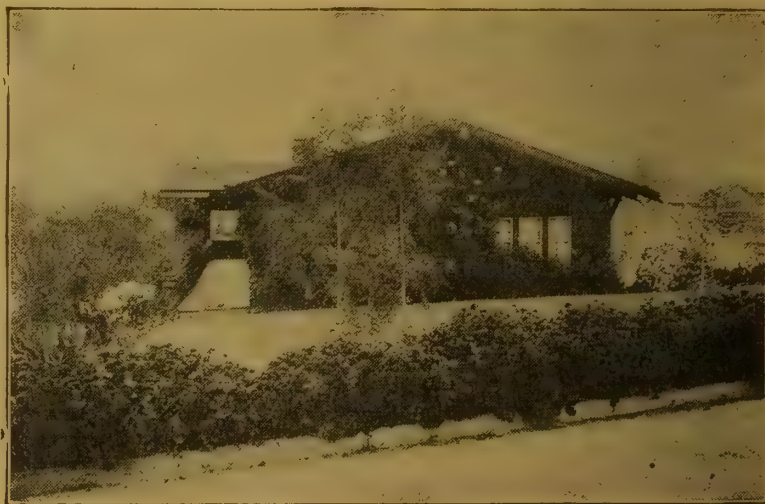
An old-time home place where palms and other ornamentals have created a scene of wonderful beauty. Photo by California Nursery Company.

provided before he may be assured of lasting comfort for himself. What landscape designer of taste would ask for a more pleasing task than to plan home grounds to harmonize with such surroundings?

Yet it is with regret that we note many farmer's premises where every care is bestowed upon the four-footed beasts and their quarters and the latter are often somewhat attractive in

their superiors do not exist. Would that we could say as much for all.

But to return to the garden and the value thereof; should we not have the home grounds so attractive as not only to keep the boys and girls on the farm because of its comforts and conveniences, but to draw the friendly neighbor and even the leisure-loving passer-by? How about embellishment of home grounds from a cold-



Take Advantage of Circumstances

There is no reason why the farm home should not have as attractive setting, using a natural slope or any other help of nature to make the house look as if it "belonged" to its surroundings. Photo by California Nursery Company.

addition to their unquestioned sufficiency in general, yet the grounds about the residences are sadly neglected. Only that part from which a direct revenue is obtainable is given serious consideration. Calves have a more suitable place to play than children and I sometimes think that even the calves notice that they are of greatest importance; they hold their heads so high and look so "all-fired" proud. I am sure that the poor children often wish they had a nice green to gambol upon, but it is too often alfalfa for the cattle and bare soil or gravel for the children. I have seen

blooded business point of view? Do such investments pay? The man of means, looking for a rural home, preferring that to residence in a city; is he attracted by squalid surroundings, or does he search for a community or section where taste is displayed and the landscape made beautiful with trees and flowers? If your farm is neglected and your grounds unadorned those who settle about you will belong to the same class. If you and your neighbors beautify your home grounds and keep them well cared for, the home-seeker is assured of culture and refinement, for all know that the



love and care of plants and flowers has an ennobling and elevating influence. Surely he stated aright who said that: "the appearance without is an index to the character of those within." It rests with you as to how you will be indexed for these indexes are not necessarily costly. They are merely pages in the book you own and need but to harmonize with their fellows; but what kind of a book have you made for yourself? The world judges of the contents largely by the cover; see that it is well-designed and the design carried out in suitable colors. Then will the many come to buy and all will wish to look therein.

Let us not have our home grounds gaudy or garish. Let us consider first the uses and then all the comforts, conveniences and floral luxuries we may have consistent with those uses. Have roads and paths where needed, and none where not needed. Have them go reasonably direct from one point to another. This does not necessarily mean straight lines; neither does it mean many or abrupt curves. All should suggest ease and pleasure to either driver or pedestrian.

Plant trees primarily for shade; not for ornament alone. Backgrounds in mass plantation, for forest or wood lot effect, are always allowable and usually desirable, but do not overplant the

foreground with trees beyond the consideration of shade and shelter. Frame your picture with shrubs; that is their chief use. Also fill in the harsh right-angle formed by ground and house walls by planting a frame-work of shrubs against the house. Leave fine long views open, but blot out all undesirable views and unsightly objects with trees or cover such objects with vines if upon your own premises. Then make the whole picture bright with plenty of flowers in good colors. Now let us look to comfort also. Have one or more arbors, garden houses, seats covered or uncovered, a place to sling a hammock, a lawn upon which to lie as well as attractive to the eye. Unless near an ocean, lake, or large stream, a little pool of water with plants and fish is very attractive and interesting and the cost is small. A few vines on house and other structures will lend grace and beauty, soften the harsh monotonous lines of architecture and suggest shelter, snugness, and seclusion—a home-like atmosphere that cannot fail to charm. There; the farm home is complete, and satisfying, not only to your own family, but to all who visit it. And the cost? A mere trifle. The best investment you ever made; one that will grow in value with each succeeding year and with no additional cost.

## Roselle

Roselle has been grown in California but not to the extent it should be when the delightful acid, fine-flavored jelly it will make is considered. The Arizona experiment station has found it exceptionally well fitted for growing under Arizona conditions. The station issues the following regarding its culture:

The Roselle plant is an annual which grows easily in any soil. There are two varieties, an early and a late. The early variety should be sown, as there is great danger that the frost will destroy the late. The plants will mature earlier if the seed is started in paper cases and the plants set out as soon as danger of frost is over. The seed may be planted in the field, however, after the ground is warm. It should be sown four feet apart in the rows that are six feet apart. Cultivate it as you do okra. The plant grows rapidly and the pods should be ready for use by September. The pods

grow in the axil of each leaf and contain the fruit which is used for preserving.

In preparing jam or jelly the fruit is cooked with very little water until it is soft. It should be put through a colander to remove the seeds, then strained through a cheese cloth. The juice may then be used for jelly and the pulp for jam or sauce. Sauce made from the pulp of the Roselle plant is often substituted for cranberries as it has a tart flavor. The jelly and jam taste much like that made from currants.

The Roselle plant is grown extensively in Australia and the "Queensland Jelly" shipped in quantities to Europe is made in Australia from the fruit of this plant. The adaptability of the Roselle to soil conditions and the excellent quality of its products for food suggests that it may become very valuable in the Southwest as a substitute for the "small fruits" of which we have so little.

## Interesting to the Gardener

About the most instructive feature of any gardener's library is the seed and plant catalog of the modern day seed dealer. These catalogs have increased in scope until mere lists of plants are the least of their features. For instance, we have one before us in which nearly half of the page is given up to cultural suggestions for "A Big Home Garden"; then a quarter of a page is given to "A Few Words About Irrigating." A half of another quarter of a page is given to "A Word About Sowing Seed." Then in an inch or two is given "Lists of Seeds," and even there more or less of cultural directions. Another entire page is given to instruction as to how to make a hot bed, to the number of plants on an acre, and then to a list of agricultural books. Another entire page is devoted to "All Year Work Chart," and hardly a page in the entire catalog is given to exclusively advertising the goods of the house that puts it out. The modern day seedsmen are alive to the needs of garden-

ers and are furnishing a world of information.

### ORANGE COUNTY LIMA BEAN GROWERS

Lima bean growers near Santa Ana recently met at Greenville, Orange County, and discussed matters of co-operative market, building of warehouse, installing cleaners and perfecting an organization which would secure just returns to the producers. There is excellent prospect of organizing an association with not less than 1250 acres of beans represented.

In per capita ownership of automobiles California is practically at the head of all the states of the Union. While New York state has the largest total, with well up towards a half million autos, that state has less in per capita ownership, there being an auto for every 25 people, while in California there is an auto for every nine people. From this standpoint Iowa was ahead of California, with one in every eight in 1916, but it is estimated that this state has now passed her.



# Extra Tested

## To Yield You Extra Wear

Racine Country Road and Multi-Mile Cord tires actually do yield more miles of good service. The secret lies in the many Extra Tests to which these proved quality tires are subjected in the factories.

### RACINE Country Road and Multi-Mile Cord TIRES

are Extra-Tested throughout. Each of the Extra Tests adds extra value—months of extra wear—miles of extra service.

For instance: every inch of fabric that goes into the Racine Country Road tires, is lens-examined against flaw in warp or weave. This is the Extra Test for perfect fabric. Out on the road it shows its worth.

RACINE COUNTRY ROAD TIRES are specially designed and Extra-Tested for country road service. 5000 Mile Guarantee—and big dividends in extra mileage can be expected.

RACINE MULTI-MILE CORD TIRES are real cord tire quality—Extra-Tested. Also red and gray tubes Extra-Tested. Sold by substantial dealers. It will pay to look up the one nearest you.

For Your Own Protection Be Certain Every Racine Tire You Buy, Bears The Name

### RACINE RUBBER CO.

Racine, Wis.

5000 MILE GUARANTEE

# Farm for Profit

## and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

## HAUSER PACKING COMPANY

9th and Mateo Sts. PHONE 10336-Bdwy, 5600 Los Angeles Cal.

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Established 1877

Forty-first Year

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A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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### Saturday, March 23, 1918

#### OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

#### THIS WEEK'S COVER

The forty million dollars direct return to California from alfalfa is a most interesting item in our prosperity campaign, but the direct return is small compared to its meaning to the live stock industry and the state's greater prosperity. No one seems to have a very definite idea as to the first coming to the United States of alfalfa, other than that about the time California became one of the United States alfalfa was one of its most important crops. But long years before that the mission fathers brought in the seed of the "Chilean clover" which has since meant almost unnumbered millions of wealth to this country.

More alfalfa; more live stock; more prosperity.

#### RAISING THE WIND

The time was when windmills dotted the California landscape at frequent intervals. Later we said; "Let gas do it," and gas did it effectively and cheaply. But the price of gas is now materially higher; wind power remains at the same old quotation, and greater efficiency at lower cost is becoming essential. May we not return to more general use of the windmill without setting aside the efficient gasoline engine?

#### DAIRYING ADVANCED

In no period of California's dairy industry has advancement been so rapid as during the 16 months of the state dairy cow competition which has just ended. This may not be entirely due to the impetus given to the industry by this competition, but there can be no question that its influence has been great. The competition, which began in the fall of 1916, ended the evening of March 15 with

the awarding of prizes, a list of which was given in last week's issue. The Cultivator was represented at the dairy conference at Davis, at which time the awards were made, by Messrs. Briggs and Hughes, and the story of the conference and liberal extracts from some of the addresses made at that time will have prominent place in the next issue of this paper.

#### KEEPING BOOKS?

Whether he wishes to or not the farmer is now confronted by the fact that at least a simplified form of bookkeeping is necessary. The demands of the income tax gatherer to know as to our outgoes and incomes will come to us with considerable force at the beginning of another year. We have already stumbled through our report for the last year, or will have done so within the next seven days—or be subject to a severe fine. But now is the time to make next year's return, or, rather, to make the data available which will make an intelligent return possible.

These words are not for the farmer

naturally do not desire any immunity from rules applicable and necessary to the community as a whole. But where the enforcement of the pound-for-pound rule seems to demand an unusually heavy sacrifice, persons having farm-raised substitute cereals on hand in considerable quantity should write or consult their county or state food administrator as to proper method of procedure.

Where farmers certify in writing the exact amount of substitutes on hand or wherever substitutes cannot be obtained, the 50-50 plan may be modified, upon approval of the federal food administrator for that state.

Special rulings have also been made where farmers exchange wheat for flour. While such matters will be handled with all fairness possible, the food administration calls attention to the long list of authorized substitutes and emphasizes the paramount fact that the object of the 50-50 plan is to reduce consumption of wheat flour so that more can be shipped to the Allies.

#### W. S. S.

Boy Scouts are doing a great work: First, they are fitting them-

#### THE CHALLENGE

The most potent enemy of a country does not always come with thundering guns, poisonous gases and lines of marching men. There is a silent enemy. No gun on earth can kill it; no submarine on the sea can destroy it; no death-dealing contrivance in all the world can stop its murderous course.

This enemy is starvation.

This is the most dreaded foe our associates in this war are facing today. We in America can and must check the relentless advance of starvation in the Allied countries.

Europe's call for food is a challenge from which we cannot afford to turn away. If we value our own lives and those of other individuals we must throw all the energies of willing hearts, ingenious minds and strong bodies to the great task of saving the enormous amount of wheat, beef, pork, butter, and sugar that it will take to keep the wolf from Europe's door.

We are not asked to go hungry ourselves or even to make any large sacrifice, but merely to change our eating habits a little.

The spirits of those who have already died of starvation in France, Belgium, Poland, and Serbia call us to this small self denial. The thought of those who still struggle bravely on after nearly four years of war makes us glad to send them help.

It is only the slacker who would say "This is not my business. I will eat what I please."

who has kept books, but for the farmer who has been content with "making both ends meet" regardless of how it is done. He should appreciate the good nature of the collector this year and not presume upon it another year.

It will be a satisfaction in making out the next report not only to know but to know that we know.

#### FLOUR SALES TO FARMER

Subscribers of the Cultivator, who have their own mill and have been grinding corn, barley, feterita, or other wheat flour substitute, have requested information as to securing flour on the market without purchasing other and unneeded substitutes. We took the matter up with State Food Commissioner Merritt and, while at first it was thought no exception could be made, we have, under date of March 11 this ruling:

The food administration recognizes that the problem of saving by the farmers of the country will probably have to be handled in some cases in a somewhat different manner than in cities where ease of delivery and wide variety of food stocks make wider latitude in diet possible. The farmer frequently grows a considerable portion of his cereal grains and in using these at home he performs a patriotic service in not only effecting a substitution for wheat but also in relieving the railroads of the burden of transporting his foods. Farmers

selves to be efficient and worthy citizens and in addition they are doing some work in the present World's situation which is in addition to its good training proving most effective. One of their activities is along the line of selling of Thrift Stamps and War Savings Stamps.

There are many of us, from youngest to oldest who are entering into the "game" with the boys and thoroughly enjoying saving the dimes, nickels and pennies to go into Thrift Stamps and watching eagerly for the time to come when these may be exchanged for the War Savings Stamps.

Recently in the home of a young married couple, where the purchase of War Savings Stamps now and then would cause no great inconvenience, instead of buying in cold blood, the habit was formed of collecting every penny that appeared in the household transactions, putting into the "ginger jar," which when it became full would count out approximately \$4.13 or \$4.14, the necessary amount at this time to buy the War Saving Stamps, and the readiness with which they would pounce upon any penny which appeared in anybody's possession around that house was such that the jar was soon filled and the larger stamps were bought often-er than one would anticipate.

We Americans are being taught some lessons in thrift and incidentally some lessons in patriotism.

#### PROFITABLE PATRIOTISM

The needs of our country give opportunity for revelation of character and the patriotic spirit. Some offer their lives, give of time and effort even to impairment of health, give of money even to mortgaging the home—give, give till it Hurts. Others smugly draw down per week as much as does a Sammie for a year's service—if his life is spared that long—in the trenches.

There are Patriots—and patriots.

#### This Week's War News

The Italian front remains quiet with lines intact.

The closing of all California saloons and the securing of laborers from Mexico is being seriously urged by many Californians as an aid to the present labor situation.

The first anniversary of America's entrance into the war, April 6, will be observed by the launching of the new great liberty loan drive. The amount is not yet announced, but many anticipate it may be for \$10,000,000,000.

It is assumed that Germany will use her advantage in Russia as an opportunity to renew peace proposals, in fact, some suggestions have "leaked through" which indicate the campaign has already begun.

The campaign against German spies in the United States has been waged more fiercely during the past few days, and many have been captured. "Beware of spies" placards have been posted in many cities.

The Allies are bringing greater pressure to bear on the western front. No general advance has been made but artillery action, and especially on the American front, short drives have won small sections of the German trenches in the sector near Verdun.

Negotiations were taken up by tween the Allied powers and Holland in the endeavor to transfer Holland's merchant ships in harbors of America and its allies. All offers were refused by Holland and with little question some time today (Wednesday) the ships will be seized.

The "daylight saving" law has been enacted by congress, signed by the president, and will be in full force on and after March 31 and until October 27. All clocks are to be advanced one hour, and fuel and light saved because of more work in daylight hours will aggregate millions.

British forces announce that German prisoners of war are to be distributed over areas which the enemy's aircraft are subjecting to attack—this because it has been learned by the Allied governments that their soldiers captured by Germans have been placed in all towns which are subject to airplane attacks.

There have been no extended air raids on either Paris or London during the past week, but one large fleet of French airships bombarded Cologne, and reports by way of Berlin are in effect that many were killed. American airships are getting into action and it is now thought that these air fighters will be a greater factor.

Petrograd is now thought to be under entire control of the German army, with Germans advancing in all parts of Russia, especially along the Black Sea. Almost complete anarchy obtains in all portions of Russia, and large numbers of German troop prisoners in Siberia are revolting and capturing arms. Many of these are known to be in the section of Lake Balkal. President Wilson is still withholding approval of any advance in Siberia or Russia on the part of Japan.



# Agricultural News Notes of the Pacific Coast

## Northern California

Wild geese are creating havoc in the grainfields of Butte County.

Butte County has given \$2500 to aid the land fund of the state colony recently located near Chico.

Glenn County farm bureau meetings are scheduled for Willows, March 25, 26; Elk Creek, March 28.

Sacramento County farm center meetings: Carmichael, March 19; Del Paso, 20; Franklin, 22; Hood, 27.

March meetings of Glenn County farm centers: Orland, 18, 19; Plaza, 21, 22; Willows, 25, 26; Elk Creek, 28.

Farmers all over the Sacramento Valley are protesting at grain bag prices and endeavoring to secure relief.

The annual convention of the California Development Board is to be held in Oakland Friday and Saturday of this week.

The regular monthly meeting of the Humboldt County Dairy Association recently spent an entire session discussing labor and wages.

Oakland is planning for an exposition of resources and productions of the Pacific Coast, to be opened about August 15 and continue 30 days.

The cannery at Benicia, Contra Costa County in making a bid for try, has ornamented all its workers with blue caps and aprons trimmed in white.

California produced a half million pounds more cheese in 1917 than in 1916, but the production of condensed, evaporated and powdered milk shows an increase of over 7,000,000 pounds.

The California Peach Growers Association anticipate an average of eight cents per pound for last season's crop. Two years ago the average was three cents. Moral; organize.

R. P. Cundiff, for years county horticultural commissioner of Riverside County, but more recently connected with the state horticultural commission as field deputy, in Sacramento Valley, died of pneumonia.

Collins of Tulare County is after the "slackers," and by "slackers" he means the pesky ground squirrels or the fellow who fails or refuses to obey the statutes of the county and state regarding cleaning up this pest.

Sonoma County grape growers recently met at Cloverdale and discussed the present vineyard and wine situation. President Swett of the state viticultural commission will address the next meeting at Santa Rosa.

A five year agreement has been made by the Oakdale and South San Joaquin irrigation districts which will secure to them use of storage water from the Sierra and San Francisco Power Company at the rate of 75 cents per acre foot.

The campaign for bulk handling of grain is gathering force in practically every county north of Sacramento. At a recent meeting at Willows committeemen were appointed to work to secure the erection of elevators at every large shipping point.

Grain growers and general farmers of Yolo County are planning for a general organization which will aid the farmers in these strenuous times. The first fight is on the sack question and it is suggested that grain elevators will aid in solving this.

## Central California

Tulare is holding mass meetings to discuss castor beans.

Pacific Grove, Monterey County, is to have a shipbuilding plant.

Beekeepers of Kern County will meet at Bakersfield, Monday, April 1.

Oranges of Exeter, Tulare County, have sold in London at \$6.30 per box.

Tulare County swine men recently sold seven cars of fat stock at auction.

Kern County wants a cotton gin and will plant 1000 acres to cotton if one can be had.

Monterey County live stock men report the recent rains as worth millions to their county.

A 48 year old vineyard at Lemoore, Kings County, still produces 20 tons of fresh grapes per acre.

Kings County farm bureau has a committee appointed to investigate marketing and purchasing problems.

The board of supervisors of Monterey County have voted to supply fund for expenses of a farm adviser.

Merced County expects to plant over 1000 acres of sweet potatoes, and this by one syndicate of Fresno men.

Porterville wheat producers find that after all deductions are made that wheat nets to the producer f. o. b. \$3.45 per cental.

Tulare County farm bureau will hold its next fat hog sale at Visalia, March 23. A former sale netted to farmers over \$12,000.

No more white beans can be shipped from California until 30,000,000 pounds have been commandeered by the army and navy.

The recent rains had but little influence on the waters of Tulare Lake, and grain farmers predict that the lake will dry up during the coming summer.

The auto observation tour of farm advisers and farm bureau delegates, beginning at Berkeley and ending at Bakersfield, and occupying one entire week, was most successful.

Bids received for figs grown on Kearney Estate at Fresno have been declared too high by the state food administration, and bidders have been forced to recall the bids.

Kern County's rural auction centers were recently cited in the San Francisco meeting of the Commonwealth Club as proof of the great benefit of such sales to both producer and consumer.

Apple growers of the Pajaro Valley are planning how to meet the ever increasing demand for "the big red apple." The market will demand appearance rather than quality in the matter of apples.

Selma and Kingsburg in Fresno County claim that practically 100 per cent of the raisin acreage of those counties is signed with the Associated. Practically 90 per cent of the acreage of the state will now market through it.

The industrial welfare commission has ordered that no person, firm or corporation shall employ, or suffer or permit an experienced woman or minor to be employed in the fruit or vegetable packing industry in California at a rate of wages less than \$10 per week, nor inexperienced person, less than \$8.00 per week.

## Southern California

The Los Angeles County farm bureau now has four assistant farm advisers.

The world's greatest balloon school is to be established in Los Angeles County.

Ventura County reports the recent rains as making possible greatly increased bean acreage.

Anaheim is having trouble with its sewer farm, or rather with people who object to its location in their neighborhood.

Los Angeles County farm bureau meetings next week: Burbank, March 24; Little Rock, 26; Monrovia, 26; Lancaster, 27.

Citrus growers are somewhat concerned over prices of fertilizer and are turning every way to secure increase of humus and fertility.

San Bernardino is making an effort to secure the next state poultry show which has been held during the past few years at Coalinga.

Contract has been let for the construction of a cannery at Arlington which is to be ready for the coming season's fruit and tomato pack.

Ranchers of El Cajon Valley, San Diego County, will market their garden and farm products through their own central market on Broadway, San Diego.

The state highway commission will commence construction of an important section of the state highway in San Luis Obispo County early in April.

Owing to the greatly increased demand caused by Camp Kearney San Diego is endeavoring to arrange a large free market for fruits and vegetables.

Los Angeles City is rushing work on its big storage reservoirs and has water sufficient at present time to irrigate thousands of acres within the city limits.

Coachella Valley, Riverside County, is hoping for a new cannery and to that end a canvass is being made as to acreage which will be contracted for tomatoes.

The stock of Lima beans in California on March 1 was much larger than on March 1 of 1917. There were 250,000 sacks of Limas and 75,000 sacks of Blackeyes stored at that time.

The fight against saloons in Imperial Valley has been finally won, and the town of Imperial, the only saloon center in the county, has succeeded in abolishing its last saloon.

Owing to the present slump in cotton prices and marketing conditions, a delegation of Imperial Valley cotton growers propose to go to Washington and take it up with the national food administration.

The Los Angeles chamber of commerce has cablegram from England in effect that the embargo is lifted to the extent that currants, raisins, prunes and walnuts will be accepted by the British government to the extent of 50,000 pounds monthly.

The Laguna Water Company of the Imperial Valley, is still pushing for its rights to take water from Laguna Dam. Mark Rose has been in Washington making arrangements for opening to entry, desert claims. It is possible 250,000 acres may be irrigated under this system.

## The Coast and General

Idaho has 28 county farm agents.

A new cannery is to be opened at Blackfoot, Idaho.

The Northwest Egg Association has been organized at Walla Walla, Washington.

Seven hundred acres of farming land near Chandler, Arizona, are irrigated by pumps.

Colorado experiment station is urging treatment of celery seed to prevent blight.

A bunch of steers was recently shipped from Reardon, Washington, which netted \$120 each.

South China exports about 80,000 bales of silk worm cocoons, nearly all of which go to Europe.

The Arizona experiment station is investigating as to the value of peanut vine meal for live stock.

Payette, Idaho, has organized a wool growers' association and will pool all wool of that section.

Great Britain has requisitioned the Irish flax crop. The best grade commands 40 shillings per stone.

Forest fires burned 916,000 acres of national forest land in 1917 and caused a loss of \$1,358,600 to timber.

Measles were never so prevalent on the Pacific Coast as this year, California alone reporting nearly 265,000 cases.

Washington will produce less wheat and more barley; this largely because prices have been more favorable to barley.

Ten boxes of extra fancy Hood River apples donated to the Red Cross were recently sold in New York City for \$630.

California's surveyor general is leasing 95,000 acres of state school lands to farmers who will produce food crops.

Cottonseed oil mills of the United States received between August 1, 1917 and January 31, 1918, 3,544,509 tons of cottonseed.

Philippine Island sugar beet producers are exercised over the report that a great sugar industry is to be developed in Japan.

There are 3000 acres of sugar beet seed farms in Colorado, and the coming season's output of seed is estimated at 35,000 bags.

Facts About Sugar reports that the United States over will show 20 to 30 per cent increase in sugar beet acreage the coming season.

The department of labor hopes to have a series of at least 50,000 farm labor employment offices, or one in every large farming community.

Sugar factories will be erected on some of the reclamation lands, and it is hoped this will result in correcting the present sugar shortage.

An investigation committee has been appointed to learn as to sugar beet growing costs and costs of beet sugar manufacture in the state of Colorado.

Arizona claims the largest war garden managed by the employees of the Inspiration Consolidated Copper Company, which has over 100 acres in one large garden.

"The most important dairy meeting yet held in the West" has been said of the Western Dairy Products Show and Convention recently held at Yakima, Washington.





## Start Right to Grow More

**N**EVER before has there been so loud a call for more and still more grain, coming from all points of the compass. Never did you face so great an opportunity to help the world and yourself. Never were good tillage tools so necessary!

Good tillage implements—like **Deering, McCormick and Osborne** disk harrows, peg and spring-tooth harrows, cultivators, etc.—make mellow, uniform seed beds, free from lumps, moisture-holding, allowing crops to grow to vigorous full yield. Real cultivation means more bushels and more dollars, and the dollars will pay for your investment.

**Deering, McCormick and Osborne** disk harrows have these big, new improvements: The **Third Lever**, which controls the depth of penetration, regardless of soil condition. The **Exclusive Attachment of the Tandem**, which forces the tandem always to cut the ridges left by leading gangs, yet allows perfect flexibility at turns.

Remember the other tried and thoroughly-satisfactory features—built-in angle steel weight boxes; adjustable forecarrage; tall, hard oilers, convenient and protected; 4-wear wood bushings, improved scrapers, etc.

This year every added bushel counts doubly. Start right with right seed beds. See the local dealer and write us now about **Deering, McCormick and Osborne** tillage tools.

**International Harvester Company of America**

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Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.  
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah  
San Francisco, Cal. Spokane, Wash.



For years the standard of farmers everywhere—Mica Axle Grease. Its high-quality petroleum grease would alone make good axle grease. But the powdered mica makes it better. It can't gum or cake and it lasts twice as long. No hot boxes.

Get a can from your dealer today.

**STANDARD OIL COMPANY**  
(California)

## Get 'em Quick!

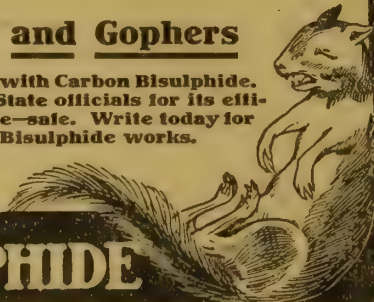
Rid your place of squirrels, gophers, prairie dogs, etc. Do it now when the young of these crop-destroying pests are being born. It's easy and cheap—when the ground is full of moisture to

### Exterminate Squirrels and Gophers

and other rodent pests. Just gas them with Carbon Bisulphide. Used and recommended by U. S. and State officials for its efficiency and economy. Simple to handle—safe. Write today for prices and folder telling how Carbon Bisulphide works.

**WHEELER, REYNOLDS & STAUFFER**  
626 California St., San Francisco, Cal.

**with**  
**CARBON BISULPHIDE**



The California Cultivator issues from 24 to 48 pages weekly and only costs One Dollar Yearly

## Varieties of Alfalfa

At "Farmers Week" recently held by the University of Arizona, at Tucson, W. E. Bryan, assistant plant breeder of the agricultural experiment station, discussed alfalfa varieties. The following is a synopsis of his talk:

### Common Alfalfa Group

Origin of common alfalfa, probably Western Asia. Introduced into California about 1850. Common alfalfa is made up of a number of different strains. Definition of common alfalfa, "All the alfalfas that are not clearly of hybrid origin or that do not have fairly distinct and uniform varietal characteristics." Several seed generations necessary for an imported variety to become acclimated. Alfalfa seed importations still being made. Never safe for the general grower to plant large amounts of imported alfalfa seed before they are tested, either by the agricultural experiment station or by an experienced grower.

### Turkestan Group

First imported about 20 years ago. Introduced for the purpose of growing in the cold dry region of the West and Northwest. This variety is not adapted to Southwestern conditions,

yielding less than the present acclimated varieties.

### Variegated Group

Of no practical importance to the grower. Valuable only for breeding drouth-resistant varieties. Variegated varieties are distinguished by their differently colored flowers, which are purple, greenish, blackish, and yellow.

### Non-Hardy Group

Two most important varieties of this group are the Peruvian and Arabian alfalfas. The group completely lacks hardness; completely winter kills in the northern states, but during the mild winter months in the Southwest will grow at a temperature lower than the more hardy varieties. Hairy Peruvian is the most satisfactory variety of the non-hardy group. Arabian is somewhat similar to Hairy Peruvian but is shortlived. Hairy Peruvian is the best variety for the low irrigated valleys of Arizona and the Southwest in general. Hairy Peruvian is not drouth resistant, and requires as much or more water than other alfalfas. It must be sown thickly and cut early in order to get the best quality hay.

## Effective and Economical

In the good old days when California and some of the rest of us were younger, baling wire and tin cans were often effective means of accomplishing results without too great an expenditure. We recall well that in early spring when the weeds were starting by the millions and we wished to do deep and effective cultivation, and at the same time discourage the tiny weeds, we would stretch baling wire across the old-time "A" walking cultivator, thus securing an effective home made "weed cutter." Sometimes a wire would last nearly the entire day. Again, accidents would happen, and replacements were necessary, but bal-

ing wire was cheap and ever present.

Now comes a San Ysidro, San Diego County, subscriber, W. P. Wolfe, and he writes:

"An inexpensive simple weed cutter for the spike-tooth cultivator is made by tying a telephone wire one inch from the bottom end of the last colter on the side beam. Wrap once around the bottom of the last colter of the center beam, then across to the last colter of the other beam and you will be surprised at the work it will do. Where the ground is loose it leaves not a weed, where the cultivator alone goes over them leaving them in the ground."

## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Oil Coating for Reservoir

Have a reservoir which holds water well except for fact that when wet the banks and bottom "stir up" so easily that mud makes the water unfit for swimming and the banks break down easily. Have been advised that an application of crude oil and then layer of sand would give me a hard surface that water would not penetrate and which would not readily be broken up by persons swimming in the reservoir or walking on the bottom while wet. Can you advise me as to the truth of this statement and practicability of the idea. I have 5500 square feet of surface to cover (bottom 3500 square feet and banks, inside, 2000 square feet). How much oil and sand would I need and how much would the oil cost? Is there any other method that would give me a reasonably hard surface at a similar or less cost? The soil of the reservoir packs well and gives a good solid foundation though when wet is very soft and muddy on the surface. It is more to prevent the stirring up of mud than as a watertight contrivance that this idea was submitted to me. Any other suggestions regarding this that may occur to you would be welcome. — Subscriber.

The bottom and sides of the reservoir can be brought to the condition

desired by a coating of crude mineral oil. The method should be as follows: Draw off the water and allow the soil to become dry enough to have it to crumble nicely when stirred. Pulverize the soil to a depth of two and one-half inches and make the sides and bottom of an even grade. Take the crude oil and heat to a temperature of 180 degrees to 200 degrees, sprinkle this hot oil over sides and bottom at the rate of two and one-half to three gallons per square yard and rake in as fast as put on, getting it down to at least two inches below the surface. The oil should be heavy asphalt oil and should have at least 60 per cent of asphalt by weight. Lighter oils will partially evaporate and crumble where exposed to the air. Heavy oil can be had in the Sunset district near Bakersfield and probably in other places. The hot oil can be distributed very nicely by using a watering pot with a flat nozzle about three inches wide and one-eighth inch opening the full width instead of the usual rose sprinkler. If the work is well done there will be no free oil on the surface, but if some oil should show in places it may be covered with sand or sandy soil. This surface will be smooth and hard when settled and cold and not need any further covering. We cannot give an estimate of



cost, but as only about 600 gallons of oil will be required it should not be excessive.—J. B. N.

#### Blackeye Beans—Rabbits

A subscriber recently inquired as to immunity of Blackeye beans from depredations of rabbits. We answered in effect that presumably the rabbits' appetite was sufficient to enjoy any form of bean growth. A subscriber called our attention to the catalogue of a large seed house and to the sentence in the description of the Blackeye, "Rabbits will not eat the Blackeye." In addition we have the following from H. L. Hyland of Etiwanda who writes:

"I am a reader of your paper, and notice in your March 9th issue an inquiry in regard to rabbits eating Blackeye peas or beans. We planted some Lady Washington and Tepary beans last year, and the rabbits ate them up clean. We then planted the piece to Blackeyes and they didn't bother them at all. Several of our neighbors planted Blackeyes also without fencing and were not bothered any."

#### Raising Kids

How soon can kid be taken from mother and given other food?—Subscriber, Redlands.

If the kids are allowed to be with their dam they should be left with her until four and one-half or five months old, or until she weans them herself. At about six weeks or two months kids will begin nibbling hay or green stuff, and eating bran or rolled barley. They will chew their cuds about this age, and when this is noticed they should have access to hay or green feed together with all the milk they will take. If they are to be bottle fed, they should be removed from the dam immediately after birth, not allowing her to lick them. This is the kindest way; it is cruel to allow the mother to know her kids and become fond of them and then remove them. They should be fed five times a day at first, then gradually lessen the feeds so that at two months of age they are having their milk three times a day, morning, noon and night, with access to alfalfa hay or green feed all the time. Kids that are carefully reared on a bottle will make just as good growth as if left with their dams provided care is given to cleansing the feeding bottles, and they are given the fresh living goat's milk.—Martha W. Howland.

#### Egg Eating

I have a flock of 14 S. C. B. Leghorn pullets that eat every egg they can get at. What shall I do? Please mail me at your earliest convenience a list of the stuff recommended to put in the egg to break them of the habit.—Subscriber, Evans City, Pa.

This vice may result from faulty nest construction, such as too large a nest or open and exposed so hens may walk in it or from accidentally broken eggs which gives the first taste. Darken nest and gather eggs often. Mrs. Koethen's "Poultry for Profit" says: "When the habit is once formed it is difficult to break, and often the only cure is to eat the hen. Filling an egg shell with a mixture of cayenne pepper or other disagreeable but harmless condiments or drugs, and leaving it in the nest for the hen to taste, will sometimes effect a cure. Leaving china eggs in the nest or about the house for the hens to peck at is also discouraging. It has also been advised to trim the point of hen's beak until it bleeds."

#### Nitrate of Soda

How is nitrate of soda used as a fertilizer? How much is used to the

acre, and where and how can it be purchased?—Subscriber.

If the soda is not packed into lumps it may simply be broadcasted at the rate of 100 to 500 pounds per acre. It may be purchased from any fertilizer company advertising in this paper. It has been announced that the United States department of agriculture will sell nitrate of soda at around \$75 per ton Coast shipping points, but none has been delivered to Pacific ports. When delivery can be made then farmers can have distribution. We believe dealers are holding ordinarily now for about \$100 per ton. For applying to lawns and around flowers or in vegetable garden it is probably safer to dissolve in water. A handful to a sprinklerful of water, sprinkled over lawn, gives almost immediate results.

#### Renewing Pasture

I have foothill range in Fresno County. What seed can be sown to renew it or to increase the crop of forage pasture? — Subscriber, Tollhouse.

The inquirer does not say what the original growth was, but if a successful pasture growth was grown originally, reseeding with the same crops would doubtless prove most successful, that is, if bur clover or alfalfa were strong growers, seed of those crops is easily secured. In addition, we might refer to Many Flowering millet. In the Cultivator of November 3rd last, and again on December 29th, reference was made to Many Flowering millet, or sometimes called Indian millet, a grass which was introduced some 30 years ago by the university, and which has proven very successful. Seed for this grass is now being offered for sale. It should be worth a trial in Fresno County.

#### Peanut Shucks

I have a rich sandy loam soil. Last year I planted peanuts; the vines grew very profusely, lots of big white shells, but only about 30 per cent had kernels in. What can be done to get a better percentage of perfect nuts?—Subscriber, San Gabriel.

Presumably the cause of this trouble was lack of moisture in the ground at the time of blossoming. Successful peanut growing calls for plenty of moisture, especially at blooming time.

#### Feed Values in Maintenance Ration

Please let me know the food values of rolled barley, cottonseed meal and cottonseed cake when fed with rice straw to cattle and horses; also the amount of each for a feed. I want to find something to feed my cattle and horses that is cheap. I don't expect to keep them fat but to pull them through this dry year. How much straw (rice) will each need a day, and which of the above will be best and cheapest?—Subscriber.

It would not be advisable to feed rice straw as sole roughage to either cattle or horses, except as an emergency or in the case of idle or wintering stock that are not expected to make any growth. Rice straw has nearly the same feeding value as oat or barley straw and makes a good partial substitute for hay in feeding cattle, sheep or horses. If of good quality, one and one-half to two pounds of straw will take the place of one pound of hay. The amount of straw and of the concentrates mentioned that will be eaten depends largely on the kind of stock fed. I do not know how much rice straw either cattle or horses would eat if fed hay or other roughage in addition; somewhere between 20 and 30 pounds per head daily would perhaps be a fair estimate in either case. At present feed prices, one would not be justified in feeding as much grain as

Continued on Page 378



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Don't wait until it's too late to silo the first crop of alfalfa with its weeds and foxtail. Don't wait until the demand for material from other sources sends prices sky high and prevents your getting it when you need it.

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61 BEALE STREET, SAN FRANCISCO

## Those 10 Young Bulls

that we will sell in R. F. Guerin's sale of registered Holsteins on his farm near Visalia, Cal., Thursday, April 4, 1918

are nearly all sired by the 30 pound bull, Sir Veeman Korndyke Pontiac and are therefore grandsons of the great Sir Veeman Hengerveld. At least two of these young fellows are good enough to head small purebred herds, one of them being out of a 28 pound dam and the other out of a 27.42 pound four year old that milked 680.1 pounds in seven days and is in hands where her chances are exceptionally good to make a much larger record. All of these young fellows are good enough to head the best herd of grade Holsteins, and dairymen will do well to attend this sale for the purpose of buying one or more of these good youngsters.

### 69 Registered Holstein Cows and Heifers, 11 Registered Ho'sein Bulls

Comprise this sale, including high record cows and daughters of high record cows, and the great young herd sire, Sir Veeman Korndyke Pontiac. Every animal guaranteed to be a breeder, tuberculin tested and sold subject to tuberculin retest by the buyer, and pledged to absolute sale without reserve, limit, or by-bid. Catalog Free on Request

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by the

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This offering will be made up of about 45 females and 40 bulls. All Western bred. Consignors to the sale: Cazier & Sons, Wells, Nevada; H. H. Gable, Esparto; W. J. Bemmerly, Woodland; D. O. Lively, Mayfield; Dean Duke, Likely; Simon Newman Co., Newman, California.

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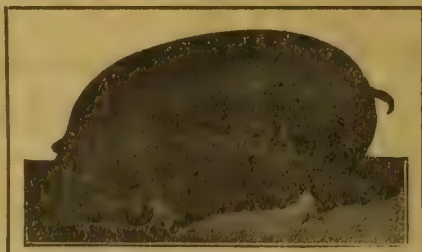
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GIVES GREATEST VALUE FOR LEAST MONEY  
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## Who's Who

With the issue of August 11 the Cultivator started its series of "Who's Who" articles to bring before its readers some of the livestock producers of California who are responsible for the large development of the industry. Where did they come from and how long have they been engaged in California development, also how do they look, so pencil and camera are to be used, and some homely, everyday photographs and notes regarding them will bring us closer together. Bear in mind we say "homely photographs" and not photographs of homely people. The idea we wish to convey is that so far as possible we will secure photographs in everyday surroundings at the homes of the livestock producers.

Written for California Cultivator By C. A. Briggs

### GION W. GIBSON



IN THE days of old, the days of gold, the days of '49" many men of vision began to see that California's real gold lay in the crops and herds of the virgin land. In the year 1850 Joseph S. Gibson began to look for a suitable location to establish a



Gion W. Gibson

farm home near what is now the town of Williams. Two years later he established himself on the farm which his son Gion W. Gibson, the subject of this sketch, now manages.

Mr. Gibson the elder before his death organized his family as a corporation, and it is this corporation, known as the J. S. Gibson Company, that "Gion W." manages. There are 1850 acres in the farm with a well equipped plant of farm buildings and machinery and a large herd of pure bred Holstein cattle. Sheep are also kept. The farm is devoted entirely to grain and stock raising. Gion W. Gibson, the manager, is known to every breeder of the Black and Whites in the state as a royal good fellow and a successful man in his chosen calling. He was a classmate of Herbert Hoover at Stanford where he specialized on engineering. His practical knowledge of farm machinery and his university training along these lines are of great value to him in his large farm operations.

### A GOOD FOUNDATION COW

The real foundation cow, the cow that will herself produce and then reproduce through her offspring in an unusual degree is much more rare in the history of registered dairy breeds than might be supposed offhand. For instance, in the present day development of registered Holsteins the cow that will produce 30 pounds of butter in seven days has become quite common, although it is still and will continue to be a standard by which values will be largely measured. With so many 30 pound records being made it would seem at first thought that many cows must have several daughters that would have 30 pound rec-

ords, but the Holstein-Friesian Blue Book tells a different story. In the whole history of Holstein breeding in the state of California there are only two cows that have each produced two daughters that have made official records of over 32 pounds butter in seven days. One of these is Winifred Hotaling, bred by Richard H. Hotaling, once owner of the famous pioneer Sleepy Hollow Herd. Winifred

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Germ Free

## Blackleg Filtrate

and

## Blackleg Tissue Aggressin

The New, Safe and Efficient Agents for Protecting Calves from Blackleg.

Cutter's Blackleg Filtrate positively protects against Blackleg.

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Neither the Filtrate nor the Aggressin can possibly produce Blackleg in even the most susceptible animals since both are germ free.

Both have given 100% protection wherever used.

Prices—  
10 dose pkge. Filtrate....\$2.00  
50 " " " .... 8.00  
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N. B.—Cutter's Filtrate (a "cultural product" aggressin) is full 5 c.c. to the dose, as we believe that smaller doses, whether concentrated or not, afford less protection.

Write for booklet telling what germ free vaccines are and wherein "cultural product" Aggressins differ from Cutter's Aggressin made from animal tissues.

While these new "germ free vaccines" have advantages that should be known to every stockraiser, we see no reason for a quick change to them by stockraisers who have had satisfactory results from the use of

## CUTTER'S BLACKLEG PILLS

"California's Favorite" for nearly 20 years

Year in and Year Out they have given better satisfaction than any other vaccine made, and as far as price and convenience of administration are concerned, they have all the advantage.

Prices:  
10 dose pkge. Single pills \$1.00  
50 " " " .... 4.00  
10 dose pkge. Double Pills 1.50  
50 " " " .... 6.00  
Cutter's Pill Injector.... 1.50  
Insist on Cutter products. If unobtainable, order direct. We pay shipping charges.

The Cutter Laboratory, Berkeley, Calif.  
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"The Laboratory That Knows How"



Hotaling lived through her prime at a time when there was little official testing done in California and died at the age of 14 years without having been given an opportunity to make official her excellent known production. She left behind her six splendid daughters, all of which are living, one of them, Winifred Hotaling 2nd, having records of 33.92 pounds butter in seven days, 19,951 pounds milk and 874.12 pounds butter in one year, and another, Winifred Hotaling 3rd, an official record of 32.19 pounds butter in seven days, made the first seven days on test, immediately after which she was shipped to the Guaranty Sale at Sacramento last December where she sold at public auction for \$1750. The other four daughters of Winifred Hotaling are all owned by R. F. Guerin, Visalia, and will be sold at public auction by California Breeders' Sales and Pedigree Company on Mr. Guerin's farm, Thursday, April 4, 1918.

A GREAT HOLSTEIN

Verona De Kol Beets is the twenty-fourth cow to obtain a place on the list of pure bred Holsteins that have produced more than 40 pounds of butter in seven days. Her figures are



Verona De Kol Beets

40.08 pounds of butter, 720.9 pounds of milk in seven consecutive days, made as a junior four year old, at the age of four years, two months. She is owned by J. T. Shanahan of New York, who thought enough of her to pay Oliver Cabana, Jr., \$10,000 for her at the famous Worcester sale last June. Last year, as a junior three year old, she produced 32.59 pounds of butter from 526 pounds of milk at just three days over three years of age. Had she freshened four days sooner she would have made a world's record as a senior two year old. Her new record places her fourth as a junior four year old.

OVERFAT HOGS AT OUR FAIRS

Written for California Cultivator  
By L. J. Belknap, of Jersey Queen Farm

In a resolution passed by the Poland-China Breeders' Association of Corvallis, Oregon, recently they cut out all hogs from our fairs over one year old. Following is their resolution: "Resolved, That to conserve nation's food supply we recommend the elimination of all breeding classes of swine over one year of age at all the international, national, state and county fairs in the United States for the period of the present war."

Possibly they may consider this a patriotic move, but I can not see it that way, but rather a very unpatriotic move. I believe that we would greatly hinder or retard hog breeding

by such a move. Did you notice, Mr. Swine Breeder, the interest which centered about the show pens at our last state fair? There was no class of exhibit at the fair which attracted more attention than did the hogs. And many sales attested to its worth.

Now, this brings us to a very important phase of the exhibiting of our breeding stock of hogs, viz, overfatting. I took it upon myself a few weeks since to correspond with our leading hog raisers including our state university farm at Davis, and received answers from all whom I addressed, and the opinion of every one was that something should be done to eliminate the overfat breeding hog from our fairs, not by keeping them at home but by showing them in common flesh. As the university professors said, "It is not only a great loss in feed but renders sterile many of our best breeding stock by overfatting." I also notice by articles in the Duroc-Jersey Bulletin and the Berkshire World that this question is receiving much attention in the East. What shall we do about it? I would suggest that a meeting of all swine breeders be called to meet at Davis, at our state farm and start things moving in the right direction. I be-

medium condition, let the barrows show what the breed will do in fat production. This would be a great saving in food and also in saving or cutting out the liability of rendering sterile our best stock. What do you say Mr. Breeder? Shall we abide the decision of the Oregon Poland-China Breeders' Association and thus work against all concerned or shall we take the matter up and fully discuss it and reach a middle ground which will be of advantage to us all and especially our government in these strenuous times.

GOATS MAKE FIRE BREAKS

A thousand head of goats have been hired by the forest service to clear the brush from the fire breaks in the Angeles national forest, according to the acting district forester. The goats were shipped to the slaughter houses in Los Angeles and were destined to be sold in the butcher shops. The butchers, however, refused to accept them, whereupon the owner rented them to the forest service for \$20 a month to keep the fire breaks clean.

The fire breaks are trails 50 feet wide and about 35 miles in length, along the ridges of the San Bernardino Mountains. They were built for the purpose of preventing the spread of forest fires, and in order to be effective they must be kept clear of all inflammable litter. To keep them clean has cost the government in labor as much as \$5000 a year. The goats will do it for \$20 a month and thrive on the feed besides.

**FARMERS NOT A POISON**  
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**FOR CALF SCOURS**  
Breeders testify that B.K. stops scours. It is powerful in killing germs, yet mild and healing. Relieves irritation, stops infection. Easy, simple and cheap treatment. Write for evidence from users. Get our free book "Save Every Calf" from your dealer. B.K. is on sale at drug and general stores. Dealers wanted in every town. General Laboratories, Madison, Wis. 3122 So. Dickinson St.

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Registered young bulls from best families.

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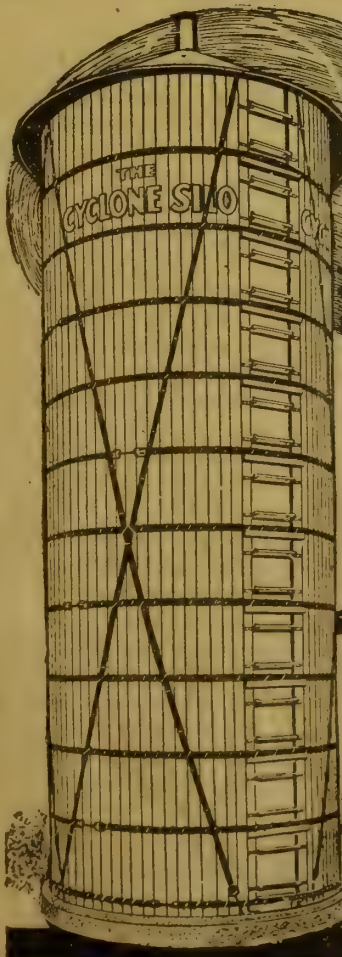
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## Northern California Live Stock Notes

Written for California Cultivator By W. S. Guilford

## HOG SHORTAGE

**T**HERE is a big shortage of hogs in California according to the reports of those who have been investigating the situation. This is sure to make breeding stock, both pure bred and grade, very much in demand when the prices of feeds again reach normal.

And it is sure to bring registered animals more in demand than ever before. Good feed is absolutely essential, but good blood is necessary for the most economical production of high class pork.

## IMPORTANT MEETING

A meeting that promises to be far reaching in its effects was held at the Palace Hotel in San Francisco, March 6, 1918. Representatives of various state swine breeders associations met with the directors of the California Swine Breeders' Association to discuss plans for better marketing of the hogs produced in the state.

It will be of interest and benefit to every one who owns a hog of any kind, or who is in position to keep a hog, to get in touch with Secretary Royce at Davis.

## PATRIOTIC SERVICE

"More pork" will be one of the big factors in the winning of the war. Of this fact there seems to be no question. Ham and bacon are two of the food products most necessary and useful to the army.

In the work of increasing pork production in California a great service is being done by President C. B. Cunningham of the California Swine Breeders' Association. He has spent his time and money freely and unselfishly in the work. He has a thorough knowledge of the hog business and his words carry conviction. Mr. Cunningham has bred and developed at Mills in Sacramento County, one of the greatest herds of Chester White hogs in America.

## CALIFORNIA ATTRACTS

In order to become the great pure bred live stock breeding center that it deserved to be California needs a great many more big constructive breeders and developers. We need a lot of the big men from the industry in the East, men who know the details of the business and who will fully realize the possibilities here.

Every year more such men are attracted to California. It is reported that A. J. Lovejoy, the great Berkshire breeder, is to bring his herd to the Natomas project at Sacramento and make his home there.

And now James E. Poole of Chicago, one of the greatest live stock writers and authorities in the world, is in California to "rest up" — and probably to locate. "Jim" Poole knows more of the ins and outs of the market end of the live stock industry than any man living. He is connected with the Breeders Gazette, Shorthorn World and is a member of other prominent agricultural publications.

There is no limit to the possibilities in the pure bred live stock industry in California, for a man of Mr. Poole's experience and ability, and the Cultivator welcomes him into the ranks.

## CULTIVATOR SERVICE

When C. A. Briggs first entered the employ of the Cultivator as general live stock field man, we had a long talk about the live stock situation and the Cultivator's relation to it.

There has never been a big live stock industry develop in any territory without the help of strong agricultural publications that keep in close harmony with the breeders. So it was agreed that the mission of the Cultivator and of Briggs and Thomas and Messenger and Hughes and all the rest of us—was to continue to do in the future what had always been the policy in the past—be of the greatest possible service to the industry in every possible way.

There is no more popular man in the business than C. A. Briggs, and his middle name is "Service."

In the broad general survey that he is constantly making of the live stock situation he has been concerned for a long time about the hog marketing



Senorita Ceres Mechthilde

A splendid registered Holstein cow closely bred in the blood of Ignaro De Kol. Her dam made 25.78 pounds butter in seven days, 707.31 pounds in one year. Owned by R. L. Holmes, Modesto.

situation. California producers, especially those who find but a few animals at a time, have not been getting as high prices as the Eastern markets seem to justify.

How can this condition be remedied? asks Briggs of himself. And "Cooperation" is the only answer. So he suggests this to the Poland-China breeders at Hanford. They are heartily in favor of a big state wide movement. Raisin growers, walnut growers, bean growers, many other producers "get together"—why not hog growers?

The Poland-China Association, a live organization composed of some of the most progressive businessmen in the state, authorizes Briggs to carry the message to the Western Berkshire Congress and to the Duroc-Jersey breeders. Committees are appointed, and the meeting with the California Swine Breeders' Association before referred to is the result.

## PORK VS. FANCY POINTS

One of the important things being discussed in connection with the shortage in pork and the relation of the registered hog to it is that pork not fancy points is the thing that counts.

The animal that makes the greatest number of pounds of good meat in the shortest time, on the least feed, that is the one that will help win the war regardless of the way the nose is turned or how the ear is kinked.

There was never a time when it was more important to make utility the first consideration than right now.

## BIG PREPARATIONS FOR RICE

The high price of rice and the wonderful returns of last season are the cause of great activity in the rice business. New projects are being



## This Concrete Feeding Floor

Prevents waste of high-priced corn—it delivers the bacon.

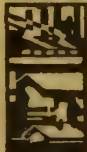
In these days you can't afford to feed grain to mud-holes. It's pork we need.

Concrete feeding floors mean permanent floors—no filth, no disease, no place for rats to nest.

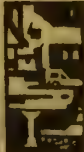
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will have three yearling bulls and three yearling heifers in the

## Great Shorthorn Sale on April 11

All rich in the blood of their herd bull True Dale. True Dale won first for Get of Sire at Sacramento, 1916-1917 and at Portland International, 1917.

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Will Consign 4 Head Bulls to  
Shorthorn Sale



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and other bony tumors. Cures skin  
diseases or Parasites, Thrush, Diphtheria.  
Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address The Lawrence-Williams Co., Cleveland, O.

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Put your stock in the profit-producing class. The most positive, economical and easy method of restoring and keeping in perfect health and vigorous condition your horses, cattle, sheep and swine is to regularly use

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This Guaranteed Stock Tonic and Conditioner has stood the test for nearly fifty years and is demanded by farmers who make stock keeping pay big profits.

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Pure Scotch Blood Lines.Show Herd won highest honors  
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breeding FOR SALE**E. F. Slocum & Son** R 1 Willows, Cal.Better service is assured by the advertiser if when  
writing you mention the California Cultivator.

started, ditches are being dug, pumping plants installed and thousands of acres prepared for planting. And the dry winter has been very favorable for this work.

**DEMAND FOR SMALL FLOCKS  
INCREASES**

The demand for small flocks of sheep by owners of small farms in the Sacramento Valley increases steadily. Many of these are able to get a start by buying a few old ewes from some large flock owner, ewes that are too old to do well in a large flock but that are good for one or two more lambs if kept where they can get plenty of feed without too much competition. These small flocks will make a demand for a considerable number of pure bred rams in the near future.

**THE ONE FARM SOW**

I have been riding through a good section of the Sacramento Valley today, have passed possibly 75 or 100 farms. These were big grain ranches, small fruit farms, stock farms, diversified farms, and, in the edges of the towns, one, two and five acre plots.

I can think of no reason why every one of these should not keep at least one sow. Now no hogs of any kind are kept on a great many of them. Of course it would be a little bother, but quarters for a sow and litter are easily constructed, and enough feed of one kind or another goes to waste to keep a sow and litter.

There are scraps from the table, skim milk that would otherwise go to waste, waste fruit in season, vegetables from the garden at the end of the season, an armful of green weeds or grass now and then, lots of things that are relished by hogs. It will pay to supplement this with a little grain as occasion demands, but think of the results to be obtained. A 200 pound pig at 14 cents brings \$28, and the year's supply of fresh and salt pork for a family amounts to a considerable sum, more than one would think until it is figured up.

But more than all this, those in best position to know declare it a patriotic duty to do everything possible to increase the world's supply of pork. And when the "one sow" farmer starts in business it will be easy for him to secure a good pig or an older animal and have some animals in every litter to sell to his neighbors for breeding animals at better than pork prices.

It is a well known fact that one sow and litter can be made to do better than a single animal in a big herd. This is because of the individual care and attention received and the greater diversity of feed.

One of the most striking features of the 1917 California state fair hog show was the comparatively large number of prizes won by beginners in the business, men who had only one or a few sows. There is a wonderful opportunity now in the Sacramento Valley and in many other sections for a great increase in the number of successful hog raisers and in the number of hogs produced.

**GREAT BERKSHIRE**

Now Berkshire people are all talking Epochal, and Epochal stock is now given a boost by one of his offspring selling to an Illinois breeder for \$10,000. This is a new record price for the breed. Epochal was purchased some months ago by H. W. Gossard, an Indiana breeder, after looking over this country and England.

Shorthorn breeders of Canyon County, Idaho, have organized an enthusiastic Shorthorn association.

**First Spring Sale of  
SHORTHORNS**

Under Auspices of

**California Shorthorn Breeders Association**

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Bulls for range man

Bulls for the registered herds

Cows and heifers of quality

All animals tuberculin tested

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**CALIFORNIA SHORTHORN BREEDERS ASSOCIATION****320 Sharon Bldg.****San Francisco, Cal.****Fred Reppert, Auctioneer****Our Consignment at the Shorthorn Sale**

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By Golden Goods Junior

All are strong, healthy animals—the choice of last year's breeding. Out of pure bred Scotch cows.

Bulls are suitable to head any herd. Heifers are highest quality.

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California

This stock may be seen at our ranch any time before the sale. Ranch located in Portola Valley, seven miles from Redwood City.

**Innisfail Farm, Suisun, Cal.****Dairy Shorthorns****Will Consign to Shorthorn Sale, San Francisco, Cal.**

"Shasta," Bull, white, calved April 12, 1915. A splendid individual. Weight 1875 pounds. Best milk breeding. Winner at State and County Fairs.

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Breeders of Grand Champion Cow, Sacramento, 1917

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Have entered three head in the sale. Roan Lady and bull calf, sired by Roselawn Choice, and the prize winning white heifer "London's Aloha," also sired by Roselawn Choice, Reserve Champion Bull.

Beef Shorthorns, Registered Jersey Stock, Shire Horses and Duroc-Jersey Hogs for sale.

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\* A cow's health is not complete without a perfect udder. Caked Bag, so likely to occur at the calving period, is quickly eliminated by applying Bag Balm, the great healing, penetrating ointment.

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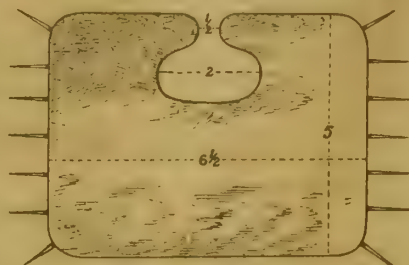
## Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal. Unsigned communications receive no attention.

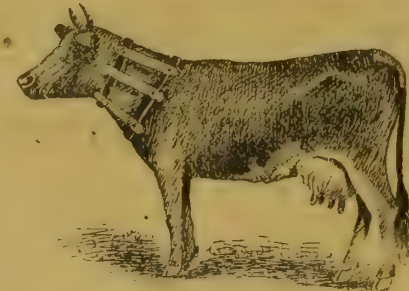
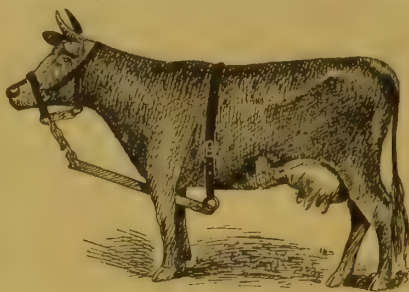
### SELF MILKER

We have a Jersey heifer that freshened January 19, giving ten quarts of milk, and since then she has become a self milker. She is a good cow and we would like to keep her. Can you suggest a cure for the trouble?—Subscriber, La Mesa.

Of course you do not need to be told that medicine will do no good in this case. Nothing rubbed on the



teats is bitter enough nor offensive enough to stop the habit. The only successful method is interference. Some are easily cured by placing a flap in the nose. A flap can be made by using a piece of wood or fibre about three-eighths of an inch thick



and about five by six or six and one-half inches. Cut a notch in the side like the accompanying diagram and slip it into the nose. A few spikes in the edge will make it more effective. Some cows are smart enough to throw this to one side and continue the habit.

Another method is by placing a halter on the head and a surcingle around the body just behind the shoulders and fastening a stick about the size of a rake handle with one end to the halter and the other end to the surcingle. The stick should be about three feet long, and a chain or strap about a foot long should connect the front end with the halter. This will give plenty of freedom to the head for all necessary movements but prevent her reaching the udder.

Still another good method is by

placing a cradle about the neck. This is done by riveting several pieces of wood about the size of a lath to two straps, one long enough to reach around the neck just back of the head and the other long enough to reach around the neck just in front of the shoulders. If the slats and straps are made the right length this will not interfere with the necessary movements but will prevent her reaching the udder.

Chose the one of these methods that suits you best and make the parts to fit your cow. No exact measurements can be given as cows are not all alike.

### Foundered Hog

We have a half grown hog that has a very peculiar ailment. He got the milk warm from the separator morning and evening then a feed of corn or squash. All at once he refused to eat and did not want to get up. He finally regained his appetite but his legs are swollen up to the knees, his ears and tail are hard and crumpled as if they might have been frozen. He is peeling all over, and the hoofs look as though they would come off. Could it be foundered? Can you help us out in this difficulty by giving the cause and the remedy?—Friend, Turlock.

Yes it is founder, and the warm separator milk is probably the whole cause of the trouble. Separator milk is full of air that has mixed with it in passing through the separator and is very hard to digest. Better let the milk sour the old fashioned way.

### Dog and Cat Ailing

My dog has been troubled with eczema and diarrhoea. His coat is dull and shedding in patches. When he runs or plays he seems to tire and sometimes seems distressed and pants hard for a long time. Feed oat meal mush and milk for breakfast, one and one-half pints milk at noon and two dog cakes in the evening. My cat, eleven and a half years old has lost weight rapidly within the last two months and is very thin with poor appetite. Takes very little milk or meat at a time and drinks a great deal of water. Its breath is very foul. Has a caught as though there was something down in the throat, but does not expel anything. The hair looks dull and he is cross at times. What shall I do for them?—Subscriber, Herald.

The dog has been overfed and probably had too little exercise. The liver and bowels are having a hard time to handle the oversupply of food. Some of the vegetable liver pills such as are made and sold for human use would do him more good than any prescription that you could get filled. One pill given twice a week for two or three weeks would be enough. Also reduce the feed. Feed very little in the morning, nothing at noon and a good square meal at night. Give him plenty of exercise. The age of the cat is enough to account for all its ailments. Decayed teeth probably cause the offensive breath. It would be a kindness to the cat to end its troubles with a dose of chloroform.

### A HIGH CLASS YOUNG SIRE

Sir Veeman Hengerveld is again tied for second place among all Holstein sires for the number of daughters that have records of 30 pounds butter or over in seven days, he now having 15 to his credit. Several of his daughters and granddaughters, including the famous Chimacum Wayne Boone, 33.69 pounds butter in seven days as a four year old, 23,576.4 pounds milk and 1067.47 pounds butter in one year, are in leading herds in the Northwest, but California has the distinction of being the home of his only son in the West. This son is Sir Veeman Korndyke Pontiac, owned by R. F. Guerin, Visalia, in whose herd this fine young sire already has

Continued on Page 375

## The California Polytechnic School

San Luis Obispo, Cal.

Offers

## For Sale

the Following Stallions:

The Clydesdale Stallion,  
Chief Guardsman, 18756

Grand Champion in both open and State classes and winner of first premium in both classes, at State Fair, Sacramento, Cal., September, 1917.

The Percheron Stallions:

Master, 122755

School Boy, 117687

Director, 117686

and one unregistered stallion, foaled April, 1916.

The first three Percherons were exhibited at the 1917 State Fair, receiving five ribbons—Reserve Champion, First, Second, Third and one Third Premium Award.

To any one purchasing the unregistered stallion the opportunity will be offered for selecting such name as may be desired.

The above stock is second to none and an excellent opportunity is afforded for securing first-class breeders at reasonable prices.

This School now has more studs than it has use for in its course of instruction and for breeding purposes and for that reason the above are offered for sale.

Correspondence and inquiries solicited.

## California Polytechnic School

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San Luis Obispo, Cal.



of Oregon, Washington,  
the silo-less man goes to  
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er feed—mostly grain,  
use of a silo con-

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Silos to sup-

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PLANT YOUR LAND NOW TO  
WINTER RHUBARB  
You should get big crop by next  
fall. Others making \$1000 per  
acre, so can you with WAGNER'S GIANT  
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## The Localization of Truck Crops for Shipment in California

By R. G. Risser, Assistant Truck Crop Specialist, Bureau of Crop Estimates

**S**OME excellent examples of the localization of truck crop production are found in California. The large commercial shipping districts are

confined to a comparatively few sections of the state and specialization is carried to a high degree by growers.

During the season 1917-8 California grew 5482 acres of celery. Seventy per cent of this acreage was confined to the San Joaquin-Sacramento delta counties; 22 per cent to Los Angeles County; four per cent to Orange County, and four per cent to all other counties.

During the same season California grew 6775 acres of lettuce. Fifty-three per cent of this acreage was grown in Los Angeles County, 37 per cent in Imperial County, and 10 per cent in all other counties.

At the same time 7115 acres of

Probably by far the largest asparagus district in the United States is located in the San Joaquin-Sacramento delta. In 1917 there was 23,210 acres in this district alone. Aside from this delta section, the Imperial Valley, with 283 acres, is the only carlot shipper.

Brussel Sprouts are grown extensively in but one place. San Mateo County had approximately 400 acres during the winter of 1917-8.

Cassabas are grown commercially in Los Angeles, Orange, Imperial, Stanislaus, and Tulare Counties, the acreage being fairly evenly divided.

Watermelons are grown commercially in Tulare, Fresno, Merced, Imperial, Riverside, Los Angeles, and scattering counties. The acreage in 1917 was 3600.

Cabbages for commercial shipment are confined almost entirely to Los



Practical Economy and Efficiency

In the Imperial Valley the lettuce grower and truck gardener gathers the products of the field, proceeds to the railway, where, with specially constructed wheels, as shown in the engraving, his truck is driven on planking laid level with the surface of the rails, when the grooved, or car, wheel feature which has been attached to the regular motor truck, drops onto the rails, and 30 or 40 miles per hour over the railway right of way to the loading station is possible. A locking device is provided for the steering gear, so that once on the rails all the driver has to do is to step on the gas or apply brakes. On railway between El Centro and Holtville.

cauliflower and broccoli were being grown in California. Sixty-seven per cent of this acreage was grown in Los Angeles County; 26 per cent in the vicinity of San Francisco Bay, and 7 per cent in scattering counties.

In the year 1917 California grew 17,300 acres of cantaloupes. The commercial production was confined almost entirely to two counties, Imperial and Stanislaus, the former having about four times the area of the latter.

In the same year, 9000 acres of fall onions, i. e. the main crop of late onions for shipment and storage, were grown. Ninety per cent of this area was located in the San Joaquin delta.

The production of the Bermuda type of onions is even more restricted, being grown commercially in but two counties, Riverside and Imperial. These two counties have growing for April, May and June shipment this year, 892 and 520 acres respectively.

The commercial growing of rhubarb is also very limited. Aside from the districts which grow for canning and shipment in mixed cars, Alameda County, which has approximately 700 acres, is the only county which ships in carlots as a general practice.

Globe artichokes are grown in a small way in various parts of the state, but the extensive commercial production is done in San Mateo County, exclusively. About 3700 acres are under cultivation on the coast of this county.

Angeles, Orange, Imperial, San Mateo, San Diego, Ventura, Sacramento and San Joaquin Counties, the bulk of the spring shipments coming from the two counties first mentioned.

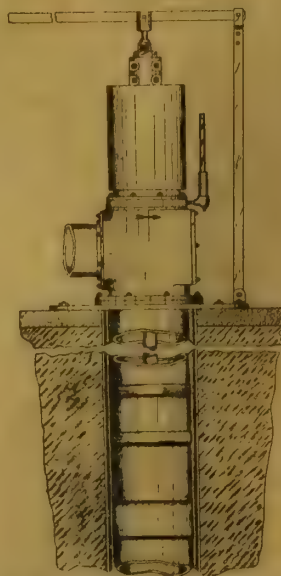
Cucumbers are grown for shipment in Los Angeles, San Diego, Yuba, and Alameda Counties. Last year 72 straight cars were shipped out, all coming from Los Angeles County.

Potatoes are more widely adapted to local conditions than some of the other crops, but the production of early potatoes on a commercial scale is restricted to districts which are relatively less frosty. The largest producing district for potatoes in the state, which is located in the San Joaquin delta, produces a small proportion of the early crop. Less than ten per cent of its plantings could be called early potatoes. The early potato districts of the state are limited to a few counties which have favored locations suited to early planting and rapid growth. Out of 58 counties in California, only ten are important as producers of early potatoes. The area of early potatoes in 1917 for the state was 19,423 acres.

Strawberries are grown for the markets of San Francisco, Oakland, and other cities in several of the central coast counties, but the principal districts for distant shipments are in Sacramento and Los Angeles Counties. Shipping districts of secondary importance are in Imperial, Placer, Fresno, and Siskiyou Counties.

## Kimball Direct Flow Turbine Pump

(Patented)

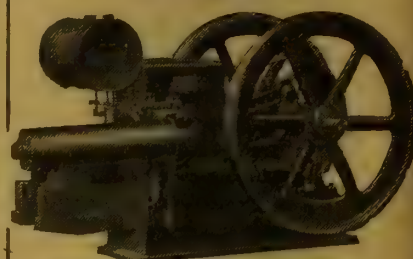


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Pump your water with a WITTE. All you need is a centrifugal and my Special Model Kerosene-Distillate Engine. I can lay your engine down at least cost. Save the middleman's profit—Get your engine NOW, while prices are still low. Have reliable power for all your work. Made in standard sizes—2, 3, 4, 5, 6, 8, 10, 12, 15 and 22 H. P. Battery or magneto equipment. I am in a position to offer you the best prices and make immediate shipment. 90-Day Trial—5-Year Signed Guarantee. Largest exclusive engine factory in the world selling direct to user. Cash, Payments, Bank Deposit or No Money Down. Suit yourself as to terms. Don't make a deal until you have investigated my offer.—Ed. H. Witte, President.

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Casing—3, 3 1/2, 4, 4 1/2, 5, 5 1/2, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6 1/2-inch 20-lb. box thread.  
Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 inch.  
All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

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Tomatoes are quite widely grown for canning, but the shipping districts are much more limited. While tomatoes are shipped in carlots from Merced, Sacramento, Santa Clara, Alameda, Yuba, and San Joaquin Counties, over 90 per cent of the shipments originate in Southern California, principally from Los Angeles and Orange Counties, but also from Imperial and San Diego Counties. About 1500 cars were shipped out to the markets in 1917.

From the foregoing it is evident

## Shipping Seasons of California Vegetables

By R. G. Risser, Assistant Truck Crop Specialist, Bureau of Crop Estimates

**S** HIPPING seasons for California vegetables vary considerably from year to year, depending upon temperatures, rainfall, and other factors. Abnormal conditions during the past two seasons particularly have had a striking effect upon the shipping seasons, but in a general way figures for the shipments of the calendar year 1917 will indicate the periods of heaviest shipments.

### Celery

Celery is one of the vegetables which is shipped in largest quantities from California when shipments from other districts are lightest. The months of largest movements are December for the northern or central portion of the state and January for the southern section. Midwinter shipments, under way after the New York and Michigan crops have been harvested and before Florida begins to roll her crop, are expected to command the highest prices and generally do, consequently 56 per cent of the year's shipments from Central California in 1917 and 87 per cent of the year's shipments from Southern California in 1917 went forward during the three winter months. The shipments for the season 1916-7 were cut short in January, February and March by severe freezes which delayed the maturity and movement of late plantings and resulted in ten per cent of the year's shipments in that portion of the state taking place in April. During the season 1917-18, difficulties in marketing and transportation retarded the movement of the crop in the southern portion of the state especially, while a mild winter in the central district permitted heavier shipments than usual during the latter part of the winter. These two conditions have operated to bring more of the celery into Florida's shipping season than would have been expected.

### Cauliflower

Cauliflower is another California truck crop which is harvested largely when other producing sections are less active. The months of heaviest shipments in 1917 were January for the southern district and March for the central section. Ninety per cent of the crop in the South was moved in the four months, December to March inclusive, while 78 per cent of the crop from Central California went forward in the two months, February and March. In 1916, November was a heavy shipper for the South, but the dry fall of 1917 delayed the maturity so that the big volume of shipments did not start until the latter part of December.

### Lettuce

In the movement of the lettuce crop

that the truck crop industry of California is highly localized. While records show that upwards of 30,000 cars of vegetables are shipped out of the state annually, it is also known that many of the counties only produce a small percentage of their own requirements for vegetables.

(Note: It is the intention to follow this report with one of the localization of vegetables grown for canning in California, and one on the localization of vegetables grown for seed production in California.)

there are the seasons of three different districts to consider; the long continued shipping period of Los Angeles, the short late winter period of the Imperial Valley, and the semi-annual or fall and spring periods of Sacramento. The months of heaviest shipments were May and November for the latter, and March for both Los Angeles and Imperial in 1917. In 1918 February was the month of the peak load in Imperial, and the entire season is earlier. In fact, the month which held the record for largest shipments in Imperial in 1917 is expected to be a period of light shipments from that valley in 1918. Another difference between the two years is the fact that the peak load of 1918 does not occur for these important districts coincidentally, as it appears to have done in 1917.

### Cabbage

Ninety-five per cent of the 1917 cabbage crop of Southern California was shipped in the four months, April to July inclusive, and 86 per cent of the 1917 cabbage crop of Central California was shipped in the four months, January, February, March and June. The crop which moved during the first three months of the year was produced in the region of San Francisco and the portion moved in June was produced principally around Sacramento. The peak load for Los Angeles and Orange Counties was later than usual, being in June for 1917, while the peak of the Sacramento district occurred in the same month, and the largest shipments from San Francisco took place in February.

### Asparagus

The lateness of the spring of 1917 is well illustrated by the development and movement of the asparagus crop, particularly from the extensive producing district in the delta of the Sacramento and San Joaquin rivers. In 1917 the first shipment of asparagus went East on February 22nd and in 1918 the first shipment went East on February 8th. The shipments of the early spring of 1917 continued to be short on account of the cold spring and more of the crop than usual did not come on until after the canneries started work in April. The earliest date of shipment on record for carlots is March 10. This year the carlot shipping season for the delta district in Central California and the shipping season for Imperial Valley are expected to start simultaneously.

**Cucumbers**  
The backward spring also had its effect upon the movement of the cucumber crop. In 1916 the first car rolled April 20, while in 1917 the first car did not roll until May 16th. Twenty-five per cent of the crop

Continued on Page 377



The Tree Trunk

Deep Cultivation

ALL around the Tree



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Send right now for the Bean catalog with full details, learn the price of this remarkable tractor, and the name of the nearest agent who will give you a true demonstration of the TrackPULL doing the kind of work you have waiting for it on your place. Mail us this coupon now, before you forget it.

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### POULTRY

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**Smilo Grass**—An Evergreen, Perennial, drought-resistant bunch grass for forage and pasture. Thrives on dry hills. A limited supply of seed and plants will be sent postpaid on receipt of price. Seed 50 cents an ounce, \$5.00 per pound, roots 50 cents per dozen. One-fourth pound seed will plant one acre. For further information send stamped envelope. G. D. Stead, Oak Dale Ranch, Spring Valley, Cal.

## SEED POTATOES

**Fancy stock White Rose, Early Rose, American Wonder, Oregon and California Burbank and British Queen Seed.** Specially grown. Send for quotations. Wm. A. Curtis Co., 400 Front St., San Francisco, Cal.

**HEADQUARTERS for ALFALFA and SUDAN Grass Seed.** Our Field Seeds are cleaned to the highest standard of purity. When buying from us you are not paying for chaff or weed seed. Write for prices and samples.

**VALLEY SEED COMPANY,** 502-504 J St. Sacramento, Cal.

**Vegetable Plants**—Largest Growers of vegetable plants in the West. Send for our price on tomatoes, peppers, cabbage, sweet potatoes and in variety. Also 100,000 Globe onion plants. Better than sets and much cheaper. SUPERIOR NURSERY CO., Fifty-ninth and Comp-ton, Los Angeles, California.

**Seed Oats**—Pure strain White spring oats, heavy, one the largest yielders in the West, as high as 115 bushels to acre being produced, thoroughly tested. Plant good seed, order now, good seed is scarce, prices right. Carlton Nursery Co., Carlton, Ore.

**For Sale**—Amber cane, 5 tons pure dwarf white milo maize; 5000 pounds pure Sudan; 1000 pounds common alfalfa seed 18c; 1100 pounds Recleaned Arizona alfalfa, 22c; 1200 pounds Peruvian alfalfa. Box 501, Fowler, Cal.

**Plant a Few Acres of Dwarf Milo Maize** for seed. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sweet Potato Plants** for sale. We make a specialty of shipping to outside points. Wholesale and retail. Prices on request, stating quantity. Plants ready April and May. Address Box 522, Merced, Cal.

**Rhubarb Plants**—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00. Wagner's Giant Crimson Winter \$3.00. 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Standard White Rose Potatoes** make the BEST SEED when grown in this HIGH ALTITUDE. Order now. \$1.75 per cwt. W. L. Jones, Yucaipa, Cal.

**For Sale**—Pink beans. Choice seed. Hand cleaned. Ten cents per pound in lots of fifty pounds or over. A. Osburn, Redlands, Cal.

**Soudan Grass**—A few thousand pounds of Soudan grass seed for sale. Write for prices. L. A. Gunther, Los Molinos, Tehama Co.

**Strawberry Plants**—Everbearing, strong, northern grown. Americus, \$1.50 per 100; \$3.00 per 250. F. I. Moffet, Ellensburg, Washington.

**Mitchells Everbearing strawberry** our specialty. \$1.00 per 100 plants, \$5.00 per 1000 plants. Primma Vista Gardens, Arlington.

**Sweet Potato, Chili pepper and other vegetable plants** in any quantities. Geo. M. Ketscher, Santa Ana, Cal.

**R.O.S.E'S** 50 cents per dozen. Write for Catalogue C and special prices. Kavan Nurseries, San Bernardino, Cal.

**New Hybrid Alfalfa**—Great underground stooler, growing thicker (not thinner) with age. J. L. Lawson, San Jose.

**For Sale**—Avocado and Mango seed. Write for prices to Mrs. L. M. Chafes, Sherman, Cal.

## GEESE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alhambra, Cal.

## AUTOMOBILE TRAILERS

**All Sizes.** See our stock. Immediate deliveries. Lowest prices. Arnott & Company, Inc., 112-118 So. Los Angeles St., Los Angeles.

## GOATS

**Toggenburg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, Cal.

## MACHINERY

For Sale

WHY BUY NEW?

SAVE YOU HALF

MATERIAL GUARANTEED

Ranch tools, plows, cultivators, drills, harrows, 50 windmills, 150 redwood, iron tanks, pumps, sundries.

**USED PLOWS, CULTIVATORS, DRILLS.** All sizes, walking, 14-inch riding. Moine plows, \$32.50; 3-disc, \$50; extension disc cultivator, \$29.50; 4-gang Stockton, fine shape, \$35; spike harrows, \$16; sundries; cheapest in town.

**SIX USED GRAIN AND BEET DRILLS.** Ready to ship; 10-ft., \$95; beet drills, \$39 up. Plows, harrows, WINDMILLS, POWER MILLS, MORE FOR LESS—12-ft. Aermotor power mill, develops 2 h. p. in 20-mile wind, costs nothing to run, \$68; cost new \$140; 16-ft. mills for irrigating, \$95; saves you \$150. 8, 10-ft. mills. Now is the time to get what you want, when we have complete stock ranch tools.

**HOW'S THIS?** 10,000-GALLON CORRUGATED galvanized tank, \$175; 8000-gallon, \$135; 900-gallon steel riveted 3-16 wagon tank, \$80, with wagon, \$95.

**COMPLETE PUMP OUTFIT:** PUMPS 50 inches at 50 feet; 3-inch Krogh vertical pump frame shaft, 9 h. p. engine belt on cars, \$250.

**ODDS, ENDS**—Slin scraper, \$6; oil wagon tank, engine and sprinkler, \$90; wheel scraper, \$25; feed chopper, \$4; bone grinder, \$10; galvanized chicken feeders, \$1.50; power blower, \$8; hot water boilers, \$3.50; riding weeder, \$14; sickle grinder, \$9; wagon tank, \$26; 4-inch riveted pipe, 16 cents; sundries.

**COMPLETE PUMPING PLANT,** \$450; pumps 14 inches at 100 ft. This job not junk, only used two years; 8 h. p. engine, 20-stroke Buckeye pump, jack, hardwood rods, 100-ft forged couplings, 7-inch brass cylinder, 8-inch casing, \$450. This saves you \$300. This job won't last long. Get busy it's a bargain. Office DEMMITT CO., 120 No. Main, upstairs. Yards, 816 Yale, Los Angeles.

**For Sale**—One 18 h. p. "Olds" distillate engine, mounted on wagon. One 50 h. p. "Olds" distillate engine; one 20 h. p. "Muncie" oil engine; one water well drilling rig; one wooden wagon running gear. The above used machinery may be priced at our shop. Will be sold at a very low figure. Dunn Manufacturing Co., Oxnard, Cal.

**REMANUFACTURED PIPE** All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

**WEISSBAUM PIPE WORKS,** 169 Eleventh St., San Francisco.

**Gasoline Engines,** the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St. Los Angeles

**For Sale**—Holt caterpillar tractor, John Deere disc plow and harrow. W. O. Tingle, 456 North Lake Ave., Col. 6177, Pasadena.

## CATTLE

**For Sale**—Imperial Sir Ormsby De Kol No. 136008. He was 2 years old January 16; is well grown and has large bones; is evenly marked and a perfect individual. His sire is McClood Prince Ormsby, half brother to Pietertje Maid Ormsby, 35.56 pounds butter in seven days (world's record 1911); half brother to the sire of Duchess Skylark Ormsby, 1507.36 pounds butter in 365 days (world's record over all ages and breeds). He is for sale only because I am retiring from business. For further particulars and price address J. W. Hastain, Brawley, Cal.

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co. Cal.

**SHORTHORN CATTLE, SHROP-SHIRE SHEEP,** Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves,** Registered \$50.00 unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit. Tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

**For Sale**—Young registered Jersey cow and thorobred (solid fawn) bull calf. Also fine grade Jersey (tests high) and heifer calf. Robt. Stevenson, Box 387, Watsonville, Cal.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, Cal.

**Venadera Jerseys,** the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires (registered)**—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn Phoenix, Ariz.

**Young Holstein Bulls,** bred right, grown right, priced right. Creamcup Herd M. Holdridge, Modesto, Cal.

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. E. Greenough, Merced.

**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys**—1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

## ENGINES

**Several New and Slightly Used Engines.** ARNOTT & CO., Implements, 113 S. Los Angeles St., Los Angeles.

## FARM LANDS FOR SALE

**Buy Land Where They Raise the Prize Crops.** In Sebastopol County 49 acre farms, \$25 per acre. Ten yearly payments, 6 per cent interest. Visit our office and see the great exhibit of PRIZE WINNING Vegetables, Fruits, Grains, Alfalfa and other Grasses raised on adjoining farms. They prove our claims that this is the best land in Western Washington. Paved roads. Four passenger trains a day. Graded School, Cannery, Creamery, Cheese Factory. Plenty of work for the laboring man in the mills and camps, where 75 settlers are all boosters. DON'T LOSE A DAY in asking for our illustrated literature.

**BROWNELL LAND CO.,** 904 Third Ave., Seattle, Washington.

**For Sale**—169 acre improved ranch, 11 miles from Los Angeles, 1 mile from Westminister. Good alfalfa, beet and bean land. Plenty water and good buildings, \$225 per acre. Potted on Oct. 1 September. W. F. Marks, 226 S. Main St., Los Angeles.

**Information Free** about state and government land bargains especially stockraising, homesteads. Joseph Clark, Sacramento.

**For Sale or Exchange**—4 acres in city of Santa Cruz, for Los Angeles or Orange County acreage. William Richard, Santa Cruz, Cal.

## A HIGH CLASS YOUNG SIRE

Continued from Page 370

around 30 choice young daughters, and 65 of the cows and heifers in the herd are now bred to him. Mr. Guerin is going to keep all of the daughters of Sir Veeman Korndyke Pontiac as the breeding females for his future herd, but everything else in the herd, including Sir Veeman Korndyke Pontiac himself, will be sold at public auction on Mr. Guerin's farm, Thursday, April 4, 1918, by California Breeders' Sales and Pedigree Company. Mr. Guerin has always been a great admirer of the wonderful old sire, Hengerveld De Kol, and has used two grandsons of the great century sire in his herd, bringing them from the East at long prices. As a result the herd now contains no less than 42 great granddaughters of Hengerveld De Kol. These are practically all bred to Sir Veeman Korndyke Pontiac, who is out of a 30.13 pound daughter of Sir Korndyke Pontiac Artis whose dam is Pontiac Atis, 31.71 pounds butter in seven days, 1076.91 pounds butter in one year, and she is a daughter of Hengerveld De Kol. Thus will the calves these cows drop carry still more the blood of one of the very greatest past sires, and they will also have a wonderfully strong infusion of the blood of one of the greatest of the present sires, Sir Veeman Hengerveld, for not only is he the sire of Sir Veeman Korndyke Pontiac, but he is also represented on the dam's side, the 30.13 pound dam of Sir Veeman Korndyke Pontiac being out of a 29.88 pound four year old daughter of Sir Veeman Hengerveld.

At the live stock show held in connection with the Southern Cattleman's Convention at Little Rock, Arkansas, recently, a 15-year-old boy, exhibited a roan grade Shorthorn steer calf weighing 950 pounds at 11 months of age. This calf was the production of the first cross of a registered Shorthorn bull on an Arkansas scrub cow. The weight of the calf at 11 months was nearly 150 pounds more than the weight of the dam. It sold for \$200.

At a meeting of the board of directors of the Lindsay-Strathmore irrigation district attorneys were instructed to make application to the state water commission for the right to divert waters of the Kaweah and St. Johns Rivers.

## SURELAY CALENDAR

The Surelay folks, in other words, the Sperry people, have put out the finest wall calendar for poultry people we ever saw. It is a wall hanger about 11 inches wide with a vertical measurement of 12 or 14 inches. The lower half gives the regular monthly calendar leaf with perforations, leaving the large half of the leaf containing an egg and poultry record which makes a whole poultry yard bookkeeping system. There is a blank for each day in the month, permitting account of Eggs Gathered, Market Price, Value Eggs Sold, Value Poultry Sold, Value Eggs and Poultry Used by Family, Pay for Feed and Supplies. Then below this daily account is place for Monthly Summary, Total Received for Eggs Sold, Total for Poultry Sold, Value of Poultry and Eggs Used by Family, with of course place for totaling. Then there is blank for Cost of Feed and Supplies, Profit for the Month, Profit from Previous Months and Total Profit. Then there is a place for monthly invoice where Laying Hens, Pullets Not Laying, Cocks, Cockerels, and Baby Chicks make their showing of On Hand, Purchased or Hatched, Sold or Used and Balanced.

We doubt not if request is made of the Sperry Flour Company, Stockton, this calendar will be mailed.



## A Cheap and Practical Brooder

Written for California Cultivator By C. A. Nidever



THE following is the plan of a thoroughly successful and practical brooder house.

It is built with the idea of low cost, successful brooding and serviceability for other uses while not used as a brooder, such as store house, granary, etc. When a farmer raises a flock but once every two years it is wise to have a brooder

house that can be used for other purposes while not brooding the chickens. Even if a flock is raised every year the brooder is in actual use only about three months of that year.

The plan given here is for a straight up and down board house 22x18 feet which will take care of 1000 chicks. However, by remodeling, the brooding system proper can be fitted to any old outbuilding that may be on the place. It can be used to brood any number of chicks desired. All that is needed to carry the heat is any kind

pit forms one side of the sand box, or brooder.

Build the sand box four feet wide and deep enough to have six inches of sand over the top of the stove pipe. Dirt can be used up to within six inches of the top, but sand should be used on top as it is cleaner.

As the stove must set down to connect with the pipe running through the sand, the end of the pit will have to be enlarged to allow plenty of space, say five feet by six feet. Be careful to line the wood with tin wherever the pipe goes through.

Hoovers are built on top of the sand box. On the pit side set up a 1x8 board on the floor. On the opposite side set a 2x4 on 4 inch blocks. Cut 1x8 boards for partitions. Place the blocks to fit the partitions. Dividing the brooder in compartments prevents crowding. Swing four inch doors from the 2x4 to the floor. Make these to swing up and catch with a hook.

Set up studding to the ceiling joists from the 2x4 that forms the floor side of the hoover. Patch a small mesh wire netting from the hoover doors to the ceiling the full width of the house. This is to keep the chicks on the floor space.

Make cloth hovers to fit the partitions in the brooder. These should swing by hinges from the side away from the pit. These hovers can be raised or lowered from the pit to regulate the heat in the brooder.

When the chicks go into the brooder at night, lift the hovers and distribute the chicks equally among the compartments. This can all be done from the pit which makes the work very easy.

It would be best to have the chick floor made of tongue and groove lumber but plain boards will do if made tight. Put plenty of sand on the floor and the cracks will soon fill.

The floor lumber should be cut to run to the brooder or sand box. Cut the lumber to cover only half of the floor joist next to the sand box.

After the brooding is over, clear out all of the hovers and wire netting, nail a 2x4 on the wall in the pit on a level with the floor and cut boards to lay across the pit and sand box. This

gives you floor space over the whole house to be used for storage purposes until next brooding season.

In putting in the top brooding fixtures nail lightly so that they will come out easily to be laid away until wanted again. Nail a slanting board to fit the corners of the chick floor to prevent crowding.

Hang a thermometer in the house and keep the temperature warm at all times.

Put a damper in the stove pipe where it enters the sand and one also at about six feet from the floor after the pipe leaves the sand. These help regulate the heat.

Set in four windows on the south side of the house 12 inches from the floor.

There should be a door from the chick floor to the yard, a door and steps into the pit from the outside and a door and steps out of the pit into the chick floor. This last door can be made of wire netting.

The house should be lined with tar roofing paper and cracks covered with batting on the outside.

For the first three or four days the brooder doors should be closed at night. After the chicks learn where to keep warm leave the doors open all the time. This will allow them to move outside if too warm and back in when cold.

For the door leading from chick floor to yard I have used common boards and set a window in. This also serves for the exit for the chicks to the yard.

A man with a working knowledge of a saw and hammer and a little ingenuity can build a first class brooder, either by remodeling an old building or using new lumber, if he will study these instructions. If built properly it is about as successful a method of brooding as can be found.

### STORRS EGG LAYING CONTEST

Storrs, Connecticut, March 8, 1918, report for the eighteenth week ending March 6, 1918.

The hens in the laying contest at Storrs shelled out 3660 eggs in the eighteenth week. This is a yield of a little over 52 per cent, is nearly 400 eggs better than for last week, and is by far the biggest yield in any one week since the contest opened last November. Barred Rocks and Rhode Island Reds were the only two breeds to make the honor roll in the eighteenth week.

As the output of newly laid eggs increases as it is obliged to do for the next few weeks, the price naturally eases off a little. The season for preserving eggs for home use will soon be at hand. If one waits until too late in the summer, say June or July, the eggs do not keep so well, and another thing, a rise in price is likely to set in about that time.

The three best pens in each of the principal varieties are as follows:

#### Barred Plymouth Rocks

Jules F. Francois, 567; Rock Rose Farm, 515; Tom J. Adamson, 515.

#### White Wyandottes

Obed G. Knight, 646; Brayman Farm, 531; J. Frank Dubois, 527.

#### Rhode Island Reds

Richard Allen, 577; Pinecrest Orchards, 520; Chas. H. Lane, 457.

#### White Leghorns

J. O. LeFevre, 555; Braeside Poultry Farm, 528; A. P. Robinson, 504.

#### Miscellaneous

Oregon Agricultural College (Oregon), 579; Cook & Porter, (Buff Wyandottes), 564; H. P. Cloyes, (Buff Wyandottes), 489.

**BUTTERMILK ADDED**

THE U. S. GOVERNMENT AGRICULTURAL EXPERTS have proven that buttermilk prevents and cures White Diarrhoea and is of great importance in poultry feeding.

Send to U. S. Agricultural Dept. Station, Berkeley, Cal., for Bulletin 162 (free) explaining the value of buttermilk to poultry.

Globe A-1 Buttermilk Mash is a food poultry like and eat in preference to grain.

Costs no more than ordinary mash, but it's worth more because of the DRY BUTTERMILK added.

Sample and valuable feeding information free.

**GLOBE MILLS, Los Angeles**

**BUTTER GLOBE MILK DRY A-1 MASH**

**Try the Coulson System of Feeding**

Our free book "Chickens from shell to Market" gives full particulars.

**Coulson Co., Petaluma Cal.**

**Right Now use DEVIL'S DUST** Sold Everywhere

and Kill Lice and Mites

Devil's Dust is a deadly poison to all insect life; harmless to poultry, stock, plants.

**Globe Mills Los Angeles, Cal**

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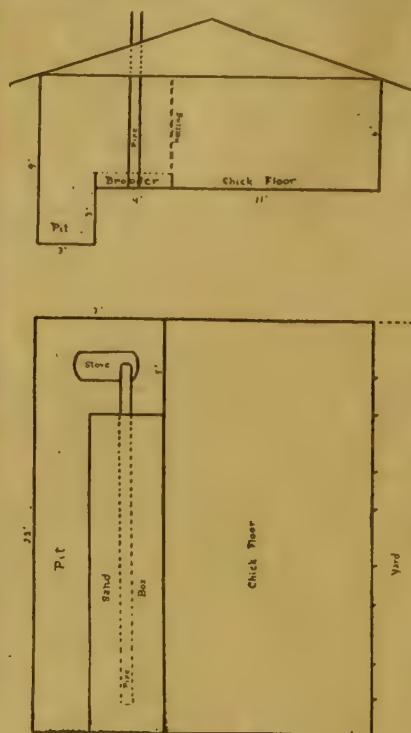
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Sales conducted in all parts of California and adjoining States. Twenty-five Years' Experience

**BEN. A. RHOADES, Auctioneer**

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Plan for Practical Brooder House

of a stove, a heater stove preferred, with six inch stove pipe running through the dirt or sand and then out the roof.

Lay off the ground for size of building wanted and dig a pit three feet deep and three feet wide the length of the building. Lay the sills so as to floor the pit also. The outside of the house will wall one side of the pit. The other side of the

## The "California Special" Plants Every Variety of Beans Including Horse Beans

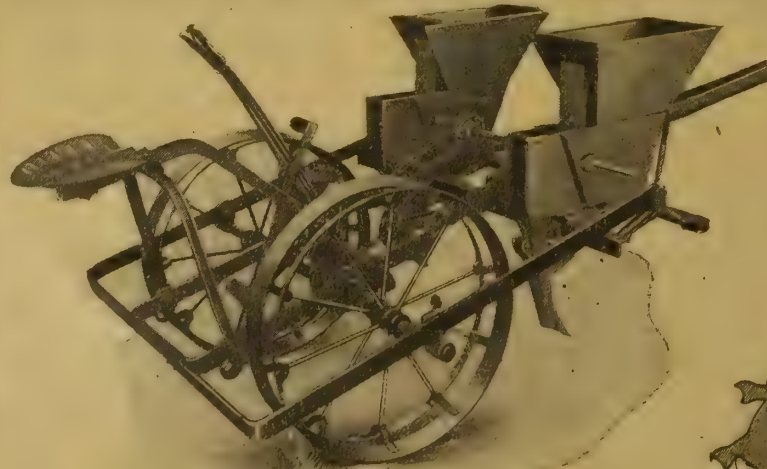
Make sure of a good stand of beans on your valuable bean land, by using the thoroughly dependable "California Special" Bean Planter.

Each planter is equipped with a set of rotary droppers adjustable to plant any variety of beans from small white to large limas. This is the best and most dependable dropping device known for planting beans. The dropper rotates without friction through the hopper cupping the seed as delicately as though each were selected by hand. The seed passes from dropper to boot which runs at any depth set. Shoe runners will be

furnished where desired. Each boot is hinged with wooden peg. Open wheels run back of boot. These press inward and downward around the seed but do not pack the ground directly on top. The California Special is the last word in bean planting machinery. The frame is especially strong—is made low for orchard work if desired and is so evenly balanced and adjusted as to make it easy to handle. Made in 2, 4, 6 and 8 row sizes.

Rotary dropping device insures uniform planting. It cannot injure any of the seed.

Catalogue and circulars sent on request. We make a complete line of bean and beet tools.



This planter will save the price of itself in not injuring the seed bean during the process of planting.

**Ventura Manufacturing & Implement Co.**  
Ventura, Cal.



VEGETABLE SHIPPING

Continued from Page 373

moved in May, 65 per cent went forward in June, and nine per cent was shipped in July.

Cantaloupes

The cantaloupe crop was also late. Not since 1913 has there been such a late start as there was in 1917. The following table indicates the important facts shown in the records for Imperial Valley.

Season	1st Car	Peak Load	First Car	Peak Load	Last Car	Days
1913	June 4	June 24	July 30	57		
1914	May 16	June 15	July 16	61		
1915	May 25	June 23	July 21	67		
1916	May 16	June 12	July 19	65		
1917	June 4	June 26	Aug. 1	55		

This table shows a relationship between the lateness of the peak load and the shortness of the season. The late seasons are the short ones. The table also shows that there has been more variation in the dates of shipment of the first cars than on the dates of shipment of the last cars, and that there is least variation in the peak load.

HOLD YOUR LIBERTY BONDS

One who subscribes for a Liberty Bond and gets credit as a patriot for doing so is not acting patriotically if he immediately sells that bond, that is, unless he imperatively needs the money, says Secretary McAdoo. It is not the mere subscription that helps the government, it is the actual loan; shifting the bond to some one else does not help.

The same objection lies to exchanging Liberty Loan Bonds in trade. Merchants offering to take Liberty Loan Bonds in exchange for merchandise are doubtless actuated by patriotic motives, but such transactions tend to defeat a primary object of the bond sale, the encouraging of thrift and the discouraging of expenditures. Bonds so exchanged are in most cases immediately sold on the open market which tends to depress the market price and affects adversely the sales of future issues.

Secretary McAdoo expressly states that there is no desire on the part of the government to prevent or interfere with legitimate trading, in good faith, in Liberty Bonds.

It is one of the great objects of the treasury department to have these bonds held as permanent investments by the people and paid for out of savings, thus at once providing funds for the government and conserving labor and material.

There are the soundest reasons for holding Liberty Bonds. Their quotations under par on the stock exchange means a loss only to those who sell. The financial history of the United States shows that in times of peace all of its bonds have gone above par, some as high as 139. The tremendous growth of our resources and of our trade, our domestic trade alone having increased from \$30,000,000,000 to \$64,000,000,000 in the last four years, warrants the belief that our government bonds are the soundest investments in the world and with the restoration of peace conditions will command a handsome premium in the market.

BEEKEEPERS ORGANIZE

At the recent meeting of beekeepers at Lompoc, Ventura County, there was organized the Honey Producers' Exchange, with the following charter members: Robert M. McCain, inspector of apiaries; Fred A. Parker, W. J. Oats and A. L. Jacobs. These men are the first in the state to enroll in the cooperative exchange, and represent an ownership of over 2000 colonies of bees.

FARM LABOR IN CALIFORNIA

Professors R. L. Adams and T. R. Kelly are authors of "A Study of Farm Labor in California," issued by the state college of agriculture as Circular 193. It is a 76 page circular and takes up California's labor problems from almost every standpoint. In this report a "farm labor shortage" is considered to be present whenever one or more of the following factors are being generally experienced by farmers throughout the state.

- (a) Losses in acreage, quantity, or quality of normal production.
- (b) Inability to expand sufficiently to meet war demands for products, especially those specifically requested by the federal government.
- (c) Payment of higher than normal wages, either as cash or as perquisites.
- (d) Importation of labor from outside sources.
- (e) Difficulty in obtaining and holding men.

Discussion follows as to transient labor needed, farmers' responsibility, with reference especially to wages, houses, hours, etc. The liquor question is also given full attention. Another point touched upon is anti-loading or vagrancy laws, importation of Oriental and Mexican labor, losses due to shortage of labor, and in fact, every phase of the labor situation is very fully discussed.

SAVE FARM MACHINERY AND IMPLEMENTS

On many farms there are implements such as grain drills, planters, harrows, binders, etc., which are not at all protected from the weather, but are rusting away, with the wood parts cracking and going to ruin. This is particularly undesirable at the present time when all implements, tools and machinery are scarce and selling at a high price, and are badly needed to offset the scarcity of labor. If it is not possible to provide sheds in which to store the implements they can be easily and cheaply protected and preserved by applying oil to all parts. Any oil will be suitable for this purpose — crude oil, or oil which has been drained from automobiles will be excellent. A few minutes' time and a few cents' worth of oil will save many dollars' worth of implements.—Agricultural Agent Cochise County, Arizona.

TRY RAISING CANE

Many a farmer supplemented his supply of sweets last season by growing some sugar cane. How about growing a patch this year?

The Poultry Breeders' Association of Southern California recently met in Los Angeles and discussed the matter of hatching more chicks. Speakers scheduled were B. R. Holloway, and A. A. Peters, vice president of the American Poultry Association and now representative of the United States department of agriculture. The board of directors recently elected as officers for the ensuing year the following: President, W. J. Stewart; first vice president, Harold Waltham; second vice president, H. L. Gill; secretary-Treasurer, Walter M. Ross; auditor, H. D. Armstrong.

Manchuria is now a great factor in the world's supply of beans. Efforts are being encouraged by the government to improve the quality and especially the yield of varieties now grown. The result in 1917 was that an increase of 20 per cent in yield over the preceding year was secured, principally due to improved seed planted.

### The Evolution of Irrigation

Just as the Open Irrigation Ditch was superseded first by wooden flumes, and then by concrete flumes, so were the latter in turn forced to give way to the "K-T SYSTEM" of underground conduits, equipped with gates and valves. This provides for a perfect distribution of the water at the exact spot required, and at just the time it is needed. It also eliminates the constant losses resulting from evaporation, seepage, and ditch choked with weeds—wasting land, water, time and money.

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**Krogh Pumps are Absolutely Water Balanced  
No End Thrust Possible No Set Collars Used**

**THE NO TROUBLE PUMP**

Fitted with Ring Oil-ling Bearings  
Renewable Babbitted Bushings  
Ring Oil-ling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

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Budded on Sweet and Sour Orange Seedlings. Those budded on sour seedlings are best adapted to the heavier soils. Let us know the location of your land, character of soil and irrigation facilities, and we will be glad to advise you. All trees delivered to customers in the best possible condition. You will find our catalogue of deciduous, citrus and ornamental trees and roses very helpful.

**Fresno Nursery Co.**  
Address Dept. A Fresno, Cal.

### SURFACE IRRIGATION

**PIPE "BUILT TO LAST"**

BODY MADE FROM SINGLE SHEET OF GALVANIZED OPEN HEARTH STEEL 10 feet long, with extra heavy taper collar on one end and band of heavy steel on the other—making each section 10 1/2 feet. Made with lock seam (four thicknesses of steel), which gives unusual strength and durability, besides—ABSOLUTE PROOF AGAINST LEAKAGE.

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**Woolwine Metal Products Company**  
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**T**HE government says so. It is deeply in earnest. It asks you to supply the food—more food and more food—for ourselves and our allies. Your patriotic duty to your country now is to produce food.

Modern methods include power farming, deeper plowing, better cultivation, greater economy. The farm tractor offers the way.

On the University Farm at Davis, California, April 17th, 18th and 19th, there will be a tractor demonstration. On April 20th there will be the annual farm picnic, but no demonstration.

There will be tractors, plows and other modern and improved farm implements in actual operation. Big exhibit tents will be filled with power-operated machinery. The University will conduct scientific tests to show tractor efficiency.

Make reservations with the Chamber of Commerce of Sacramento or Davis, or write for information to Room 1015 Monadnock Building, San Francisco. Special railroad rates are offered. Ask your station agent.

**The California Tractor and Implement Association**

## John Deere Beet and Bean Planters



See the new John Deere Beet and Bean Planter. The latest thing made. Will plant any kind of seed. Special prices on last year's model Beet Seeders while they last.

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Los Angeles

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MYERS STAYON AND TUBULAR DOOR HANGERS AND TRACKS  
FROM YOUR DEALER OR IF MORE CONVENIENT  
WRITE US. ATTRACTIVE BOOKLET ON REQUEST.  
**F. E. MYERS & BRO.** No. 1300 ORANGE ST. ASHLAND, OHIO.



### QUESTIONS AND ANSWERS

Continued from Page 365

In the past, but on the other hand, if no other roughage but rice straw is available, it is necessary to supplement it with more grain than if hay is fed with the straw. It is doubtful, however, whether it will pay to feed more than a couple of pounds, or at the outside four pounds per head daily under present conditions. Since there is but little difference in the market price of rolled barley and cottonseed meal at this time, a mixture of two parts of the former to one of the latter, by weight, will be as cheap as any and will prove a better feed, for cattle at least, than barley only when fed with rice straw. A feed of one pound of barley and one-half pound of cottonseed meal twice daily, with as much rice straw as they will eat, will make a fair maintenance ration for both cattle and horses and may enable the former to make slight gain in body weight. The following statement shows the nutrients furnished in a pound of the feeds given, but it should be remembered in this connection that digestible components of rough feeds furnish less net nutrients than similar amounts in concentrated feeds, on account of the greater loss of nutrients in the digestion of the former feeds.

	Per Cent Moisture...	Per Cent Protein...	Per Cent Digestible Carbohydrates and Fat...
Rice straw .....	7.5	.9	38.5
Barley .....	10.8	9.4	75.9
Cottonseed meal .....	7.8	37.6	43.0

#### Lime on Cut Potatoes

Is it best to scatter air slacked lime over potatoes after they are cut or will it injure them? — Subscriber, Whittier.

In order to prevent fungous diseases many planters believe in dusting the cut surfaces with gypsum, air slacked lime, or sulphur. Gypsum is generally preferred. Regarding cutting we know of planters who stick literally to cutting either one or two eyes in each piece, and cut the potato in such extremely small pieces that there is not sufficient starch or nourishment for the young sprout to get the right start. This is one of the reasons why some planters advise planting entire potato rather than cutting. We believe best returns may be had by cutting potato seed, but do not cut too small.

#### Morning Glory

What is the best way of exterminating Russian morning glory? — Subscriber, Whittier.

The best discourager yet devised for morning glory is almost continuous cultivation. No plant can resist the removal of all its leaves or breathing surfaces. There are chemical remedies but they are usually so expensive and destroy the ground for all other crops for so long a time that they are hardly profitable. Amongst these are arsenic, common salt, distillate, and several proprietary products.

#### Blackeye Beans

Does light frost injure Blackeye beans; and how early should they be planted? Will they mature in 30 days? — Subscriber, Fresno.

Blackeyes will stand but little frost in common with other members of the bean family, although they are rather hardy. The planting of beans before the soil is warmed up is liable to result in seed decay. There is little ad-

vantage in planting prior to the first of May, although home garden beans may be planted at any time, for there is no great loss if crop does not come.

#### Corn for Ensilage

What is best kind of corn to plant for ensilage?—Subscriber, Gardena.

Any good, large dent corn. Golden Beauty is a very heavy grower. The Eureka Ensilage and the Orange County Prolific are also good varieties.

#### Applying Manure

Will manure applied now influence this year's crop? — Subscriber, Gardena.

Yes, but this question might call for an answer much longer, for a book might be written on the one question. There are soil conditions for certain crops which might make heavy application of stable manure injurious to the crop, even to the extent of complete destruction of the crop. For instance, grain crop on light sandy soil, into which coarse strawy manure has been plowed, would probably prove a complete failure. On the other hand, well rotted manure applied to any orchard or garden crop where irrigation is to follow might give large return on the investment. Stable manure has advantage as a mulch and benefits the soil physically, and it also carries elements of fertility in a most satisfactory form.

#### Leaky Silo

Have a re-saw silo that leaks in one or two spots and spoils surrounding silage. It is constructed of one-half by 12 inch redwood in two layers with all joints broken, and in addition it is lined with tongue and groove flooring. The leaky spots are about two feet square. Can they be painted with some leak-proof preparation? — Subscriber, Gardena.

A leaky roof is an exasperating proposition, and it is hard to locate the exact point of the leak. With the silo described, only a suggestion can be offered, and that is to make thorough application of melted asphaltum in effort to seal every possible crack or crevice.

#### Laying Out Alfalfa Field

Am preparing to plant 160 acres to alfalfa. There is a fall of one foot across the 160 acres to the west and slightly greater to the south. The soil is silty and the highest corner is the northeast. How best may I lay this out for irrigation and more economical planting?—Subscriber.

Water for irrigation should always be delivered on the highest corner of the land to be irrigated. If for some reason, such as poor water bearing strata under the high corner, it is not practical to place the pump at the high corner, there should be a pipe to carry the water to that place. The land in question is so nearly level that care must be taken to prevent drowning out the alfalfa by standing water, and the proposed stream of 75 miners inches is too small to be used economically. A reservoir 200 feet square and capable of carrying water to a depth of four feet will assist greatly since the stream from the pump can be combined with a stream of 125 inches from the reservoir, thereby getting water enough to cover an acre of land four inches deep in an hour. We would advise laying off the land with the borders running in the direction of the greatest slope, making the borders 66 feet apart and the head ditches 660 feet apart, having an acre to each panel. In this way an acre an hour can be irrigated and the reservoir will contain water for a day's work at a time, provided the land is fairly heavy and an even sur-



face is secured before sowing the seed.—J. B. N.

#### Rough Skinned Fruit

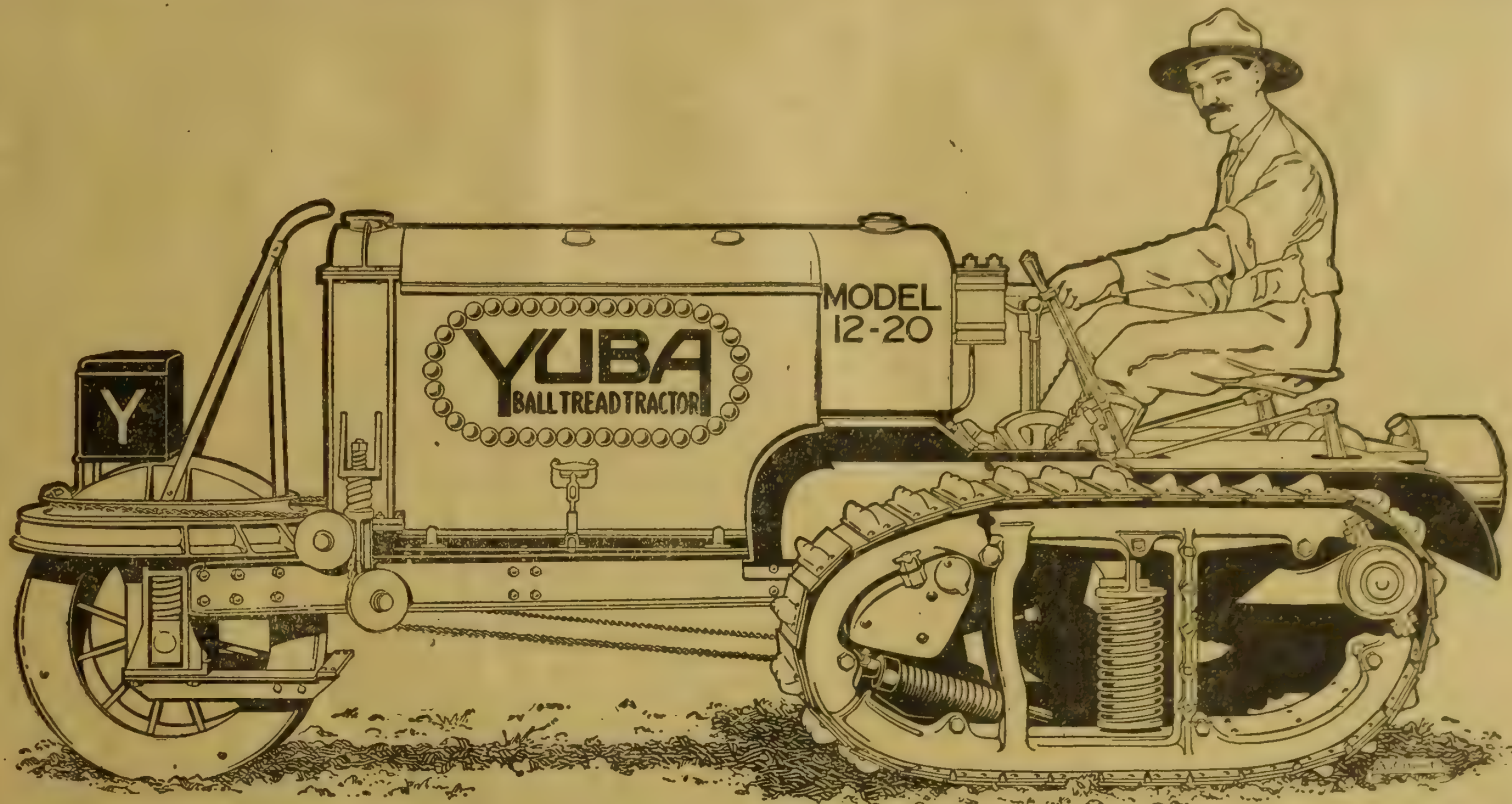
I have quite a number of Navel orange trees, the fruit of which is becoming woody and thick, rough skinned. I have talked to several horticulturists about this condition and

they all seem to give me a different line of treatment. Will you kindly advise me, if it is within your power, what is the proper method to pursue to eliminate this condition? — Subscriber, Sacramento.

This is more of an indication of undesirable type than of soil or physical conditions. Of course it may be

that in severe climatic conditions it would be impossible to produce a fine, thin skinned orange, that is, continued cold weather or other conditions which were not suitable to the orange would prevent high quality, but in the study of sport fruits and undesirable types, taken up by the department of

agriculture through A. D. Shamel, it has been found that fertilizing or giving best of soil tilth is unavailing in correcting this unsatisfactory condition. If climatic conditions are such that these trees should give a thinner skinned, smoother fruit, then rebudding to the smooth, thinner skinned type of fruit is the only procedure.



## IMMEDIATE DELIVERY

**YUBA** Ball Tread Tractors, Model 12-20, are now being delivered.

To relieve the shortage of labor—to hasten the planting—to insure the work done now, order a Yuba 12-20 for immediate delivery.

The price is \$2750.00 cash (f. o. b. Benicia, California)—the number ready for shipment is limited—wire your order and put one to work.

**PEACE**—the only way to get it is to fight for it. We're doing our all—three shifts—every hour of the 24—turning out tractors for you.

Get one, put it to work—it will keep going day and night and rarely need repair.

Quick action in securing one of the Yuba Tractors means sure crops for you—and food for our soldiers.

### YUBA MANUFACTURING COMPANY

DEPARTMENT B

433 CALIFORNIA STREET  
SAN FRANCISCO



## Household Department

### HER "BIT"

Written for California Cultivator  
By Ida M. Blake

Yes, she has a knitting bag.  
She takes it everywhere.  
She never lets a minute drag,  
But starts to knit right there.

It makes no difference where or when,  
In workshop, town or show,  
Out will come the knitting, then  
Away the needles go.

She's knitting socks and sweaters too  
And helmets by the score.  
She's knitted wristlets not a few;  
She'll keep on knitting more.

She's knitting for her soldier boy.  
He's gone to France. Maybe  
She'll help that wicked "Hun" destroy,  
For that's her "bit" you see.

### THE RUSSIAN

By Mary Raymond Shipman Andrews  
in Milestones

**T**HE little dinner party of grizzled men strayed from the dining room and across the hall into the vast library, arguing mightily.

"The great war didn't do it. World democracy was on the way. The war held it back."

It was the United States Senator, garrulous and incisive, who issued that statement. The Judge, the host, wasted not a moment in contradicting. "You're mad, Joe," he threw at him with a hand on the shoulder of the man who was still to him that promising youngster, little Joe Burden of The School. "Held back democracy! The war! Quite mad, my son."

The guest of the evening, a Russian General who had just finished five strenuous years in the cabinet of the Slav Republic, dropped back a step to watch, with amused eyes, strolling through the doorway, the two splendid old boys, the Judge's arm around the Senator's shoulders, fighting, sputtering, arguing with each other as

they had fought and argued forty odd years up to date.

Two minutes more and the party of six had settled into deep chairs, into a mammoth davenport, before a blazing fire of spruce and birch. Cigars, liquors, coffee, the things men love after dinner were there; one had the vaguest impression of two vanishing Japanese persons who might or might not have brought trays and touched the fire and placed tiny tables at each right hand; an atmosphere of completeness was present, one did not notice how. One settled with a sigh of satisfaction into comfort, and chose a cigar. One laughed to hear the Judge pound away at the Senator.

"It's all a game." Dr. Rutherford turned to the Russian. "They're devoted old friends, not violent enemies, General. The Senator stirs up the Judge by taking impossible positions and defending them savagely. The Judge invariably falls into the trap. Then a battle. Their battles are the joy of the Century Club. The Senator doesn't believe for an instant that the war held back democracy."

At that the Senator whirled. "I don't? But I do.—Don't smoke that cigar, Rutherford, on your life. Peter will have these atrocities. Here—Kaki, bring the doctor the other box. That's better. I don't believe what I said? Now listen. How could the fact that the world was turned into a military camp, officers commanding, privates obeying, rank, rank, rank everywhere through mankind, how could that fail to hinder democracy, which is in its essence the leveling of ranks? Tell me that!"

The doctor grinned at the Russian. "What about it, General? What do you think?"

The General answered slowly, with a small accent but in the wonderfully good English of an educated Russian. "I do not agree with the Senator," he stated, and five heads turned to

listen. There was a quality of large personality in the burr of the voice, in the poise and soldierly bearing, in the very silence of the man, which made his slow words of importance. "I believe indeed that the Senator is partly—shall I say speaking for argument?" The Senator laughed. "The great war, in which all of us here had the immortal honor to bear arms—that death grapple of tyranny against freedom—it did not hold back the cause of humanity, of democracy, that war. Else thousands upon thousands of good lives were given in vain."

There was a hushed moment. Each of the men, men now from 50 to 60 years old, had been a young soldier in that Homeric struggle. Each was caught back at the words of the Russian to a vision of terrible places, of thundering guns, of young, generous blood flowing like water. The deep, assured tones of the Russian spoke into the solemn pause.

"There is an episode of the war which I remember. It goes to show, so far as one incident may where every hour was crowded with drama, how forces worked together for democracy. It is the story of a common man of my country who was a private in the army of your country, and who was lifted by an American gentleman to hope and opportunity and, as God willed it, to honor. My old friend—the Judge can tell that episode better than I. My active part in it was small. If you like"—the dark foreign eyes flashed about the group—"if you like I should much enjoy hearing my old friend review that little story of democracy."

There was a murmur of approval. One man spoke, a fighting parson he had been. "It argues democracy in itself, General, that a Russian aristocrat, the brother of a duke, should remember so well the adventures of a common soldier."

The smouldering eyes of the Slav turned to the speaker and regarded him gravely. "I remember those adventures well," he answered.

The Judge, flung back in a corner of the davenport, his knees crossed and rings from his cigar ascending, stared at the ceiling. "Come along, Peter. You're due to entertain us," the Senator adjured him, and the Judge, staring upwards, began.

"This is the year 1947. It was in 1917 that the United States went into war, 30 years ago. The fifth of June, 1917, was set, as you remember, for the registration of all men in the country over 21 and under 31, for the draft. I was 23, living in this house with my father and mother, both dead before the war ended. Being outside of the city the polling place where I was due to register was three miles off, at Hiawatha. I registered in the morning; the polls were open from 7 a. m. to 9 p. m. My mother drove me over and the road was being mended, and, as happened in those days in the country, half a mile of it was almost impassable. There were no adjustable lift-roads invented then. We got through the ruts and stonework but it was hard going, and we came home by a detour through the city rather than pass again that beastly half mile. That night was dark and stormy, with rain at intervals, and as we sat in this room reading, the three of us—" the Judge paused and gazed a moment at the faces in the lamplight, at the chairs where his guests sat. It was as if he called back to their old environment for a moment the two familiar figures which had belonged here, which had gone out of his life. "We sat in this room, the three of us," he repeated, "and the butler came in."

"If you please, sir, there's a young man here who wants to register," he said.

"Wants to register!" my father threw at him. "What do you mean?" "We all went outside and there we found not one but five boys, Russians. There was a munitions plant a mile back of us and the lads worked there and had wakened to the necessity of registering at the last moment, being new in the country and with little English. They had directions to go to the same polling place as mine, Hiawatha, but had gotten lost and, seeing our lights, brought up here. Hiawatha, as I said, is three miles away. It was 8:30 and the polls closed at nine. We brought the youngsters inside, and I dashed to the garage for the car and piled the de-

lighted lads into it and drove them across.

"At least I tried to. But when we came to the bad half mile, the car rebelled at going the bit twice in a day and the motor quit. There we were—8:45 p. m.—polls due to close at nine—a year's imprisonment for five well-meaning boys for neglecting to register. I was in despair. Then suddenly one of the boys saw a small red light ahead, the tail light of an automobile. We ran along and found a big car standing in front of a house. As we got there, out from the car stepped a woman with a lantern, and as the light swung upward I saw that she was tall and fair and young and very lovely. She stopped, as the six of us loomed out of darkness. I knew that a professor from the university in town had taken this home for the summer, but I didn't know the people or their name. It was no time to be shy. I gave my name and stated the case.

"The girl looked at me. 'I've seen you,' she said. 'I know you are Mr. McLane. I'll drive you across. One moment, till I tell my mother.'"

"She was in the house and out again without wasting a second and as she flashed into the car I heard a gasp, and I turned and saw the glare of the headlights as they sprang on one of my Russians, a gigantic youngster of six feet four or so standing with his cap off and his head bent, as he might have stood before a shrine, staring at the spot where the girl had disappeared into the car. Then the engine purred and my squad tumbled in.

(To be continued next week.)

### GOOD THINGS MADE WITH RICE FLOUR

Written for California Cultivator by  
Mrs. C. L. Gardner

#### Gems

One cup Graham flour, one-half cup rice flour, two teaspoons baking powder, one-fourth teaspoon salt, one egg, three-fourths cup milk, one tablespoon Crisco, melted and stirred in last. Bake in gem pans in brisk oven.

#### Raisin Pudding

Two cups seeded raisins, one cup hot coffee, two tablespoons Crisco, two tablespoons molasses. Let these ingredients boil gently together for five minutes, then set aside to cool.

One-fourth cup of whole wheat flour, one and one-fourth cups rice flour, two teaspoons baking powder, one teaspoon soda, two teaspoons cinnamon, one-half teaspoon cloves. Sift these dry ingredients together three times, then add the wet mixture when cool. Mix thoroughly, then put into baking powder tins and steam two hours.

#### Cookies

One and one-half cups white flour, one-half cup rice flour, one-half teaspoon salt, three teaspoons baking powder, two eggs, one cup sugar, six tablespoons milk, two tablespoons Crisco. Sift dry ingredients together two or three times. Beat eggs and

## "—use foods that require less sugar"

**THIS** is one of the most important recommendations of the Food Administrator: "In cooking and baking use foods that require less sugar."

In other words—use Ghirardelli's. Use it freely and wisely—in place of other less nutritious and more expensive foods. Not only will you save money but you will help in food conservation.

Cooking and baking require less sugar when you use Ghirardelli's. Because—it contains in itself the sweetening flavor you need. More than this—it adds a new touch of richness to your icings, your puddings and other desserts.

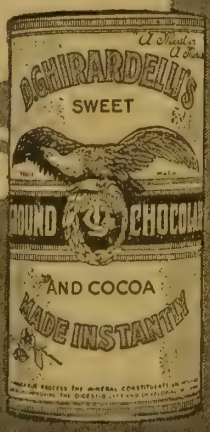
In ½ lb., 1 lb. and 3 lb. cans; a  
tablespoonful—one cent's worth—  
makes a cup.

D. GHIRARDELLI CO.

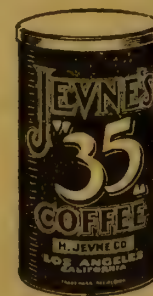
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San Francisco

**Ghirardelli's**  
**Ground**  
**Chocolate**



Buy Dependable Coffee from a  
Dependable Company.



Say to your Grocer

"Send Me  
Jevne's '35,'  
Coffee"

Your "good morning" cup of coffee becomes an extraordinary treat when you drink a delicious, appetizing cup of Jevne's "35," coffee.

Your grocer can always supply you

Our monthly publication "Table Tips" is full of vital interest to the housewife. Send for your copy today! It's Free.

**H. JEVNE CO.**

LOS ANGELES



sugar together until light, then add milk and flour alternately, stirring in the melted Crisco before all the flour has been added. Flavor as desired. Drop by spoonfuls on well greased pans and bake in moderate oven. Chopped raisins are an improvement.

### TRY THEM

#### Corn Meal and Rice Waffles

One-half cup corn meal, one-half teaspoon soda, one cup boiled rice, one teaspoon salt, one-half cup flour, one tablespoon melted butter, two eggs, well beaten, one cup sour milk.

Sift together the flour, soda, and salt; add the other ingredients and beat thoroughly; have irons hot and well greased.

#### Gem Crackers

Sift one and one-half pints of flour, one-half pint corn meal, one teaspoon baking powder, and the same amount of salt. Rub in two tablespoons butter, two-thirds of a pint of milk; work into a smooth, fine dough. Place on bread board, kneading a few times and roll to quarter-inch thickness; cut with a small oval or round cutter, lay on greased baking tin, puncture the top of each cracker with a fork, brush over with milk, and bake in hot oven.

#### Corn Meal Puffs

Into one quart of boiling milk stir eight tablespoons of meal, four tablespoons powdered sugar, and one teaspoon nutmeg. Boil five minutes, stirring constantly. Remove from fire and

when cool stir in six well beaten eggs. Mix well and pour the mixture into buttered cups, nearly filling them. Bake in moderate oven one-half hour. Serve with lemon sauce.

#### Corn Meal Biscuits

One cup yellow corn meal, two cups peanut cream, two teaspoons salt.

Put the meal into a shallow pan and heat in oven until it is a delicate brown, stirring frequently. Make the nut cream by mixing peanut butter with cold water and heating. It should be the consistency of thick cream. While the nut cream is hot, stir in the corn meal, which should also be hot. Beat thoroughly. The mixture should be of such consistency that it can be dropped from a spoon. Bake in small cakes on a greased pan.

If preferred, these biscuits may be made with cream or with butter in place of peanut cream, and chopped raisins may be added, one cup being the allowance for the quantities given above.

#### Delicate Indian Pudding

One pint sweet milk, two tablespoons butter, three eggs, four tablespoons sugar, two large tablespoons corn meal, salt.

Boil milk and sift meal in slowly; add butter, sugar, and salt. Set aside to cool, then add beaten eggs. Put in baking pan and cook for three-quarters of an hour.

Wars leave scars, but an unrighteous peace is an open wound.—Youths Companion.

### A HOME MENU

#### BREAKFAST

Stewed Prunes  
Creamed Codfish Hominy  
Bran Muffins  
Coffee

#### LUNCH

Fish Salad Mayonnaise  
Baked White Beans and Tomatoes  
Mashed Potatoes  
Stewed Fruit Coffee

#### DINNER

Barley Soup  
Stewed Rabbit Vegetables  
Milk Rice Cinnamon  
Tea

#### STEAMED PUDDING

##### Another Bread Crumb Recipe

I have read the many uses for stale bread but have not seen this one for steamed pudding published:

Two cups toasted bread crumbs soaked in one cup sweet milk ten minutes, half cup syrup, one tablespoon powdered chocolate, half teaspoon cinnamon, one egg well beaten, one cup raisins, piece of citron cut fine, one level teaspoon soda dissolved in a little water. Steam one hour or more. Serve with hard sauce or any preferred sauce.—A Subscriber.

#### REAL GIVING

There is no special  
Charm or bliss  
In giving what  
You'll never miss.  
The only gift  
Worth while and real  
Is that your  
Pocketbook will feel.  
—Detroit Free Press.

#### BONNY BRAYS

The new minister was inspecting a Scots farmers' stock, and paused to admire a donkey.

"Fine donkey, that, Mackenzie," said the minister. "What dae ye ca' him?"

"Maxwelton, meenister," was the reply.

"Wherefore that, mon?" cried the visitor.

"Because his brays are bonny," came the answer.—The Fraternal Aid Union.

Lives there a woman who doesn't delight in trying some new dish? I've known tired cooks to declare that they wished they need never again see a cook stove, and in ten minutes their eyes were bright with interest because they were trying a new recipe. I've done it myself, when almost too tired to stand, and when I didn't really need to, simply yielded to the fascination of trying to make something different.

Food should be carefully prepared to fit it to a child's powers and should be served in an appetizing fashion at proper intervals. Young children should not be offered "tastes" of the family meals, as this habit tends to destroy the appetite for the simple, rather restricted diet adapted to their need.

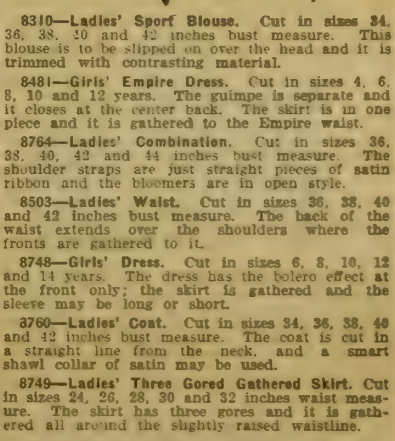
Give the boys and girls a chance to develop their originality and thus prepare them for the duties of manhood and womanhood. They may be better managers than you think they are. It is certain that they will never display any great talent unless you encourage them by placing responsibility upon them.

When new rubbers are bought put a single thickness of leather inside the heel and another outside and then fasten, on the regular heel-plates, which can be bought for a trifle at 10-cent stores. Or you can get a regular cobbler to do this for 10 cents.

When new rubbers are bought put a single thickness of leather inside the heel and another outside and then fasten on the regular heel plates that can be bought for a trifle at 10-cent stores. Or if you can get a regular cobbler to do this for ten cents.

It is far better to overestimate a boy's originality and ability to do a certain difficult task than to underestimate his knowledge, tact and determination, for he will make the greater effort when you believe him competent.

## The Cultivator Patterns



8310—Ladies' Sport Blouse. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. This blouse is to be slipped on over the head and it is trimmed with contrasting material.

8481—Girls' Empire Dress. Cut in sizes 4, 6, 8, 10 and 12 years. The guimpe is separate and it closes at the center back. The skirt is in one piece and it is gathered to the Empire waist.

8764—Ladies' Combination. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The shoulder straps are just straight pieces of satin ribbon and the bloomers are in open style.

8503—Ladies' Blouse. Cut in sizes 36, 38, 40 and 42 inches bust measure. The back of the waist extends over the shoulders where the fronts are gathered to it.

8748—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The dress has the bolero effect at the front only; the skirt is gathered and the sleeve may be long or short.

8760—Ladies' Coat. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The coat is cut in a straight line from the neck, and a smart shawl collar of satin may be used.

8749—Ladies' Three Gored Gathered Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The skirt has three gores and it is gathered all around the slightly raised waistline.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

#### HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

Pattern Department  
California Cultivator  
Los Angeles

## A Distinguished Line of Pianos

In "straight" Pianos we carry a very comprehensive line ranging in price from \$285 to \$3000—each "make" has been selected by us as the very best of its grade.

In the neighborhood of \$300 we carry the Aldrich, a good dependable piano at a very moderate price—it will give the purchaser excellent service.

From \$375 to \$450 we offer the Stroud, Kurtzmann, Emerson and Estey Pianos—four very substantial "makes" which are giving a life time service in thousands of homes throughout the United States.

From \$450 to \$600 we have the Krakauer, A. B. Chase and Weber—these instruments are high grade instruments, in fact they are old and famous makes.

Then at \$575 and upward there is the Steinway, the Standard by which all pianos are judged—To have a Steinway is to have the Best.

Bear in mind we will arrange convenient terms of payment on any Piano—even the Steinway.

We invite you to call at any of our stores—or write us asking for illustrated catalogues and prices.

We are dealers in Steinway and other Pianos,  
Pianola Pianos, Aeolian Player Pianos, etc.

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20 lbs. (20 gals.) . . . \$2.00  
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**Soil, Water and Fertilizer Analyses**  
**Mark Walker, B. S.**  
211 W. First St. Los Angeles, Cal

## Los Angeles Market

Los Angeles, March 20, 1918.

### BUTTER

Produce Exc. Quotations.  
Prices to trade 1 1/4 to 2 1/2c higher.  
California extra creamery .....44  
Dairy Exchange price past week on extras.  
March 13 14 15 16 18 19  
'18 ... 47 47 47 46 46 44  
Rets. wk. ending Mar. 19, 289,150 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....30  
Domestic Swiss .....37

### EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh Extra .....40  
Pullet .....36  
Case Count .....37  
Dairy Exchange prices past week on fresh extras.  
March 13 14 15 16 18 19  
'18 ... 39 40 40 40 40 40  
Rets. wk. ending Mar. 19, 6890 cases.

### POULTRY

We quote to producers:  
Food administration orders hens sold for producing purposes only till April 30.  
Broilers .....36@38  
Fryers .....32  
Roasters, 3 lbs. and up .....30  
Ducks, lb .....26@27  
Roasters, old .....18  
Turkeys .....27@38  
Geese, lb. ....20

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, March 20, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. 10.50@11.00  
Heifers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....4.00@5.00

Hogs—  
Av. 125 lbs. ....14.50  
Av. 150 lbs. ....15.50  
Av. 175-225 lbs. ....16.25@16.50  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent. ....12.00  
Prime wethers .....10.00  
Ewes .....13.50@14.00  
Lambs .....10.50@11.00  
Yearlings .....10.50@11.00

### POTATOES

Wholesale selling price:  
Oregon Early Rose .....2.75  
Northern Burbank, cwt. ....1.50@1.85  
Sweet, sk. ....4.50@4.75

### ONIONS

Wholesale selling price:  
Brown .....1.25  
White .....3.00  
Garlic .....6

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....90@1.15  
Asparagus, green, 25@30; white. ....20@25  
Beets, sk. ....2.25  
Brussel Sprouts, lb .....1.14  
Cabbage, lb., 2 1/2; sk. ....1.65  
Red, lb. ....5  
Carrots, doz. ....30  
Cauliflower, doz. ....75  
Celery, doz. ....70  
Cucumbers — Hothouse, doz. ....75@1.75  
Egg Plant, lb. ....22 1/2  
Horseradish, lb. ....15  
Lettuce, doz. ....25  
Leeks .....30  
Mint, doz. ....40  
Onions, green, doz. ....25  
Peas, Tel. lb. ....9@10  
Peppers, Chili, lb. ....30  
Parsnips, doz. ....30  
Parsley, doz. ....35  
Radish, doz. ....20  
Rhubarb — Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Crockneck .....70@75  
Hubbard, lb. ....3 1/2  
Tomatoes, lug .....2.25  
Turnips, doz. ....30  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples — Bellflowers .....1.75  
King David .....2.00@2.25  
W. W. Pearmain .....1.60@2.25  
Spitzenberg .....2.50@3.00  
Y. Newton .....1.60@1.85  
Bananas, lb. ....5 1/2@5 3/4  
Pears, Winter Nellis, lug .....2.25

### CITRUS

Lemons, 5.00; packed, 5.50; loose....4.25  
Juice .....2.50  
Orange—Navels, bx. ....4.25@8.00  
Grapefruit .....3.00  
Limes, basket .....75  
Tangerines, lug .....2.00

### DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, 1/4c less.  
Apples, evaporated, 50s, 16; extra ch., 16 1/2; apricots, ch. 16 1/2; extra ch., 17 1/2; fy., 18 1/2; pears, 12; peaches, choice, 12; fy., 12 1/2; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 14; 40-50s, 13 1/2; 50-60s, 13; 60-70s, 12 1/2; 70-80s, 11.  
Figs—Callmyrnas, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....25  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size

as No. 1 Soft Shell) .....21  
Prices delivered in East 1 1/4c higher.

### RICE

See San Francisco rice market.

### BEANS

These are prices made by wholesaler to retailer.

Lady Washington .....14.50  
Limas .....14.50  
Pinks .....9.25  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....14.50  
Blackeyes .....9.50  
Tepary .....10.00@11.00  
Lentils .....25.00

### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:

The continued rains have caused a drop in all grades of hay of from \$1.00 to \$2.00. The supply is said to be sufficient to carry till new crop comes in.  
Tame Oat .....23.00@20.00  
Volunteer Oat .....18.00@18.00  
Wheat .....25.00@28.00  
Barley .....26.00@29.00  
Alfalfa .....26.00@28.00

The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

### GRAIN AND FEEDSTUFFS

No quotations yet made since the recent withdrawal of the card. Within the next two or three days a new card will be made and it is hoped that grain and feeds will return to normal.

## San Francisco Markets

San Francisco, March 19, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapper, 1/2c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1 1/2c to 2 1/2c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....47 1/2  
Prices on butter are practically 13 cents above year ago this date.  
Prices Extras past week and year ago:  
March 12 13 14 15 16 18  
'18 ... 51 1/2 49 1/2 50 .. 48 1/2 47 1/2  
'17 ... 33 34 34 1/2 .. 34  
Rets. wk. ending Mar. 19, 481,900 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 24; Y. Am. ....28 1/2  
Jack cheese, full cream .....26@27  
Half skim .....14@17

### EGGS

Extras .....40 1/2  
Firsts .....38 1/2  
Selected Pullets .....38 1/2  
Firsts .....36 1/2  
Prices Extra past wk. and yr ago:  
March 12 13 14 15 16 18  
'18 ... 40 40 40 .. 41 40 1/2  
'17 ... 25 1/2 26 26 1/2 .. 26 1/2  
Rets. wk. ending Mar. 19, 14,188 cases.

### POULTRY

We quote from producers, lb.:  
The food administration forbids sale of hens for meat until after April 30.  
Broilers—1 to 1 1/2 lbs. 50@55; 1 1/2 to 1 3/4 lbs., 48@50; 1 3/4 to 2 1/2 lbs., 45@50; 2 1/2 to 3 lbs., 40@45.  
Roasters .....29@40  
Squabs, doz. ....3.50@5.00  
Ducks .....25@30  
Geese .....27@30  
Belgian Hares, live, lb. ....22@23  
Turkeys, dr., 35@36; live .....28@30

## TEAGUE QUALITY CITRUS TREES

Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

Founded in 1889

**R. M. Teague Citrus Nurseries**  
SAN DIMAS, CALIFORNIA

## POTATO PLANTERS



Come in and see the O. K. Champion line or write for Catalog

**California Implement Co.**  
122-124 N. Los Angeles St. Los Angeles



LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings 1/2 to 3/4 c more.  
Steers, lb., 9 1/2 @ 11 1/2; thin, 6 1/2 @ 8 1/2; cows and heifers, 8 3/4 @ 9 1/4; seconds, 7 1/4 @ 8 1/4; calves, 8 @ 10 1/2.  
Sheep—Lb. gross weight: Fat, unshorn wethers, 14 @ 14 1/2; ewes, 12 @ 12 1/2; lambs, yearlings, 16 @ 16 1/2; shorn sheep, 1 1/4 @ 2 less.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 14 1/4; 140 to 300 lbs., 16 1/4; 300 to 400 lbs., 15 1/4.

POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks ..... 1.35 @ 1.65  
River ..... 1.10 @ 1.40  
Yakima Gems ..... 1.40 @ 1.50  
Sweets ..... 5.00 @ 7.00  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50 @ 2.00; Burbank, low top, 1.50 @ 1.75; high top, 1.50 @ 1.75; Garnet Chile, 2.75 @ 3.00; White Rose, 2.00 @ 2.25; Early Jackson, 2.50 @ 3.00; inferior and off stocks at lower prices.

ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown ..... .80 @ 1.00  
Bermudas ..... 2.00 @ 3.00  
Garlic, lb. .... 3 @ 3 1/2

VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... .35 @ .60  
Asparagus, lb. .... .8 @ .25  
Beets, sk. .... 1.25 @ 1.35  
Brussel Sprouts, lb. .... .5 @ .7  
Carrots, sk. .... .85 @ 1.00  
Cauliflower, doz. .... .35 @ .50  
Celery, Delta, cr. .... 1.00 @ 2.25  
Cucumbers, bx. .... 1.50 @ 2.50  
Egg Plant, lb. .... 12 1/2 @ 15  
Endive, lb. .... .25 @ .30  
Lettuce, cr., Southern, iced. .... 1.20 @ 1.35  
Uniced, .... .65 @ .85  
Onions, green, bx. .... .65 @ .75  
Parsnips, sk. .... .85 @ 1.00  
Peas, lb. .... .6 @ 10  
Peppers, Bell, lb., 25 @ 30; Chile. .... 15 @ 17  
Pumpkins, sk. .... .85 @ 1.00  
Rhubarb, lb. .... .5 @ 5 1/2  
Squash, Cream, lug ..... 75 @ 1.00  
Summer, cr. .... .3 @ .50  
Tomatoes, Mex. .... 1.75 @ 2.25  
Turnips, sk. .... .75 @ .75

FRESH FRUITS

Apples—Spitzenburg, 2.00 @ 2.50; Red 1.25 @ 1.50; Newton Pippins, 1.35 @ 1.75.  
Pears—Winter Nellis bx., 2.00 @ 2.75; winter pears, lug, 1.50 @ 1.75.  
Bananas, Hawaiian, bunch .... 2.00 @ 3.00  
Citrus Fruits—Lemons, bx. according to size, fy., 3.00 @ 6.00; ch., 2.50 @ 3.00; lemonettes, 1.50 @ 2.25; grapefruit, 2.00 @ 3.25; Imperial, 2.75 @ 3.25. Oranges—Bx.: navel, fy., 4.00 @ 7.00; ch., 3.50 @ 5.50; mandarins and tangerines, half orange bx., 2.25, cr., 1.75 @ 2.00.

DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, bulk basis, standard, 10; ch. 10 1/2; extra ch., 11; fy., 11 1/2. 40s, 8 1/2; 30s, 9 1/2.  
Apricots—Bulk basis: Standard, 13 1/2; ch., 15; extra ch., 15 1/2; fy., 16 1/2; extra fy., 17 1/2; fy. Moorpark, 17 1/2; extra fy., 18 1/2. Prunes—70s to 90s, 7; 60s, 7 1/2; 50s, 8; 40s, 8 1/2; 30s, 9 1/2.  
Apples—In 50-lb. bxs., lb.: Fy., 16; extra ch., 15; ch., 15.  
Pears—Bulk basis, lb.: Fancy, 10 1/2; ex. ch., 9; ch., 8 1/2; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-oz. 45 to cs, 5.25; ch., 16-oz. cartons, \$4.00 for 36s; do, 12-oz. cartons, 45s to cs, \$3.10. In bulk: Sun Maid, 1.75; fy., 1.90; ch., 1.75.  
Sulphur-bleached Thompson, extra fy., 5.87 1/2; fy., 5.12 1/2; ch., 4.87 1/2; soda-bleached, 4.75.  
Loose: One-crown, 4.15; 2-crown, 3.40; 3-crown, 3.65; 4-crown, 3.20.

NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 2 1/4; I. X. L., 1 3/4; Ne Plus, 1 3/4; Drakes, 16; hard shell, 11 1/2.  
Chestnuts, Cal. lb. .... 10 @ 20  
Peanuts, Va. .... 15  
Pecans, lb. .... 19 @ 20  
Pine Nuts ..... 20 @ 22

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

BEANS

Jobbers' prices, cwt., recleaned:  
Limas ..... 13.90 @ 14.10  
Bayous ..... 9.25 @ 9.50  
Small Whites ..... Nominal  
Large Whites ..... Nominal  
Mexican Reds ..... 9.00 @ 9.25  
Blackeyes ..... 8.90 @ 9.00  
Pinks ..... 8.40  
Red Kidney ..... Nominal  
Cranberry ..... Nominal  
Teparies ..... 10.50 @ 11.00

RICE

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

HAY

Under date of March 16, Scott, Magner & Miller says:  
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling must be added according to conditions.  
Receipts, 1110 tons. Concessions have had to be made in many cases to effect sales in order to remove receipts from the tracks promptly. Cars have been difficult to obtain at shipping points and although several farmers have signified

their intention of consigning some of their holdings to market to be sold for their account yet few consignments have arrived to date on account of difficulty in getting cars to load. Most of this hay which is offered is that which has been held in farmers' barns to protect their stock against a dry season. Alfalfa is more plentiful than for some time past. Offerings are being made from Oregon, Washington, Idaho and Nevada.

Fancy Wheat Hay  
(light 5 wire bale) ..... 30.00 @ 31.00  
No. 1 Wheat or Wheat and  
Oat Hay ..... 28.50 @ 30.00  
No. 2 Wheat or Wheat and  
Oat Hay ..... 25.00 @ 28.00  
Choice Tame Oat Hay ..... 28.00 @ 30.00  
Other Tame Oat Hay ..... 25.00 @ 27.00  
Wild Oat Hay ..... 24.00 @ 26.00  
Barley Hay ..... 24.00 @ 26.00  
Alfalfa ..... 24.00 @ 26.00  
Stock Hay ..... 18.00 @ 20.00  
No. 1 Barley Straw ..... 60 @ 90

GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

SEEDS

Prices in round lots, lb.:  
Millet, recleaned ..... 4 1/2 @ 5 1/2  
Alfalfa ..... 22.00 @ 24.00  
Flax ..... 6 1/2 @ 7  
Hemp ..... 4 1/2 @ 5 1/2  
Rape ..... 2 1/2 @ 3

Citrus Fruit Market

Los Angeles, March 20, 1918.

Occasional sales of oranges have been made around the \$9.00 mark, and it is generally assumed that long prices will obtain through the entire season. The rain has prevented liberal shipping, but even with better weather the limited supply of oranges in California will prevent large shipments. Some of the Valencias now being sold in auctions are the coming season's crop shipped early, these reaching market before stored Valencias of last season were far out of the way.

The lemon market is still strong though it has not shown the spectacular features of the orange market.

Shipments

Shipments of oranges from Southern California to date since November 1, 1917: 4995; lemons, 1400; total, 6395. To same date last season: Oranges, 12,386; lemons, 2307; total, 14,693. From Central California to date; oranges, 1898; lemons, 110; total, 2008. To same date last season: Oranges, 4045; lemons, 162; total, 4207. From Northern California to date: Oranges, 202; lemons, 842.

AT THE AUCTIONS

March 13  
New York: 5 oranges, 3 lem. higher. Nav. 4.65-7.05, Seed. 5.50-6.25, Val. 5.70, lem. 7.00-7.55.  
St. Louis: 6 cars. Nav. 4.00-5.80, Seed. 4.40-5.55, lem. 4.15-5.55.  
Cleveland: 5 cars. Nav. 2.25-7.10, Seed. 4.90, Bloods, 4.95, lem. 4.70-6.15.  
Boston: 3 Nav. 2 lem. Nav. 5.50-7.35, lem. 6.20-7.45.  
March 14  
New York: 3 oranges, 3 lem. Nav. 4.85-6.50, lem. 6.80-7.70.  
Boston: 3 Nav. 3.15-6.80, 2 lem. 6.50-7.20.  
March 15  
New York: 1 Nav. 1 lem. Nav. 6.15, lem. 6.75-7.10.  
St. Louis: 4 cars, 2 Nav. 2.15-5.30, Seed. 4.45-5.35.  
Pittsburg: 3 oranges, 2 lem. Nav. 4.40-6.05, Seed. 4.20-4.30, lem. 4.70-5.90.  
Boston: 2 Nav. 1 lem. Nav. 5.80-7.05.  
Cleveland: 1 Nav. 1 lem. Nav. 6.40-6.85, lem. 4.50-5.05.  
March 18  
New York: 10 oranges, 2 lem. Nav. 3.20-7.45, lem. 7.60-7.90.  
St. Louis: 4 cars. Nav. 4.60-5.75, Seed. 3.85-5.65, lem. 4.55-4.90.  
Pittsburg: 3 cars. Nav. 3.30-6.30, lem. 3.95-5.25.  
Boston: Oranges higher, lem. lower. Nav. 3.15-7.65, Seed. 4.95-7.05, lem. 4.85-6.85.  
Cleveland: 1 Nav. 1 lem. Nav. 5.80-6.95, lem. 3.30-4.95.  
March 19  
New York: 8 Nav. 2 lem. Nav. 3.45-7.85, Seed. 7.55, lem. 7.50-8.40.  
Boston: 2 Nav. 2 lem. Nav. 5.70-7.15, lem. 5.75-6.55.

PARTIAL LIST OF FRUIT SHIPMENTS

From post card reports to the bureau of markets United States department of agriculture, Miss Hoey makes report of the following shipments from California for the week ending March 11: Apples, 5 cars; artichokes, 2; beans, 13; cabbage, 12; carrots, 3; cauliflower, 159; celery, 31; green peas, 1; fresh pears, 1; dried apples, 1; dried apricots, 2; dried beans, 21; dried peas, 3; dried peaches, 8; dried prunes, 23; lettuce, 176; mixed vegetables, 88; mixed fruit and vegetable, 10; mixed fruit, 5; onions, 27; potatoes, 124; sweet potatoes, 2; raisins, 53; dried figs, 2; turnips, 6.

For the week ending March 18 shipments were as follows: Apples, 8 cars; artichokes, 2; cabbage, 5; cauliflower, 67; celery, 16; fresh peas, 2; dried apples, 4; dried apricots, 2; dried beans, 8; dried figs, 1; dried peaches, 18; dried prunes, 23; lettuce, 106; mixed vegetables, 93; mixed fruit, 8; mixed fruit and vegetable, 8; mixed dried fruit, 2; onions, 6; potatoes, 71; raisins, 38; Mexican tomatoes, 9; radishes, 1.

The Allies have made further and greatly increased demand for breadstuffs. This because expected arrivals from Argentine failed.

Ventura County tomato growers expect a greatly increased output because their ranks have been increased by former growers of beets preferring to produce tomatoes and Limas rather than sugar under present unsettled conditions.

Imperial Valley is shipping its first summer squash, which is commanding around \$4.00 per crate.

RAIN

A Proper Cultivator Will Increase the Yield

A Splendid Year for Beans



Two and Four Row Bean Cultivators

Beans are High Priced and Our Country Needs Them

Order Your Cultivators Early. The Supply is Limited

We build the strongest and best equipped cultivator on the market. We can furnish you a cultivator to cultivate two or four rows of any width.

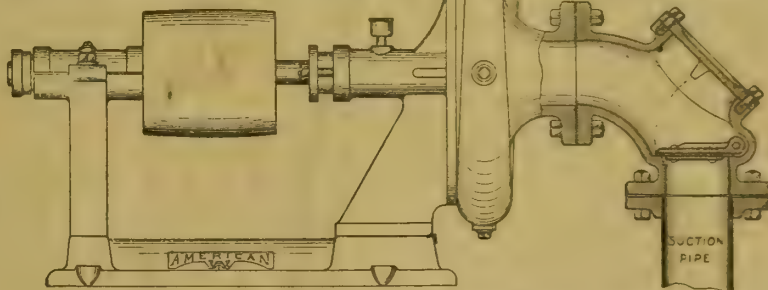
The Killefer Manufacturing Co.

2209 Santa Fe Ave., Los Angeles, Cal.

AMERICAN CENTRIFUGAL PUMPS

Combination Elbow and Check Valve

When it comes to downright dependability, for day-in-and-day-out service, American Pumps are in a class by themselves. They DO THE WORK!



Write for Catalog of Centrifugal Pumps

If your water problem can be solved with any pump, it can be solved with an American. These pumps are designed to meet every possible condition. They get the MOST water at the LEAST cost and with the LEAST TROUBLE. Put your irrigation problems up to irrigation experts. Also write for our Catalogs of Motors, Gas Engines, and Oil Engines.

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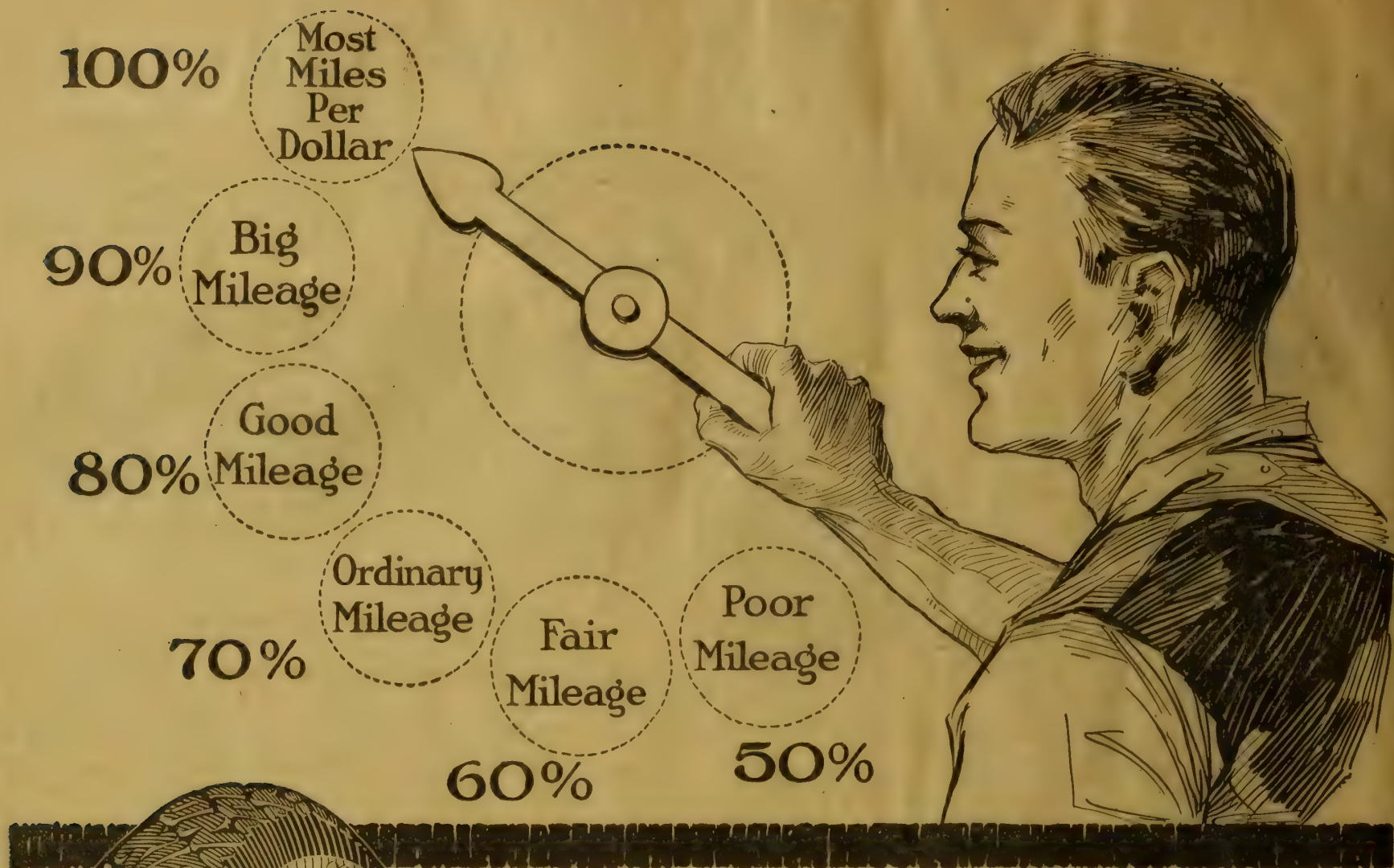
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Come in or Write us for Varieties and Prices. Our Stock is the best Money can Buy.

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THERE are all kinds of tire values. You can have small value, moderate value, or top-notch value in Most Miles per Dollar. The choice is yours. Don't blame anyone but yourself if you choose tires carelessly and pay the penalty in tire disappointment.

These are the reasons why Firestone Tires come up to the 100% mark: In the Firestone Fabric Tire: tougher tread; more cushion stock; more rubber between layers; reinforcement in side wall. In the Firestone Cord Tire: numerous walls of stout cord; each cord imbedded in pure gum; reinforced bead; hinge thrown high where strain has least effect.

Don't be content with anything less than this tested Firestone construction and the resulting advantages. One Firestone Tire will lead you to become a Firestone enthusiast.

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## TIRES



# CALIFORNIA CULTIVATOR

and *LIVESTOCK* and *DAIRY JOURNAL*

An Illustrated Weekly Magazine

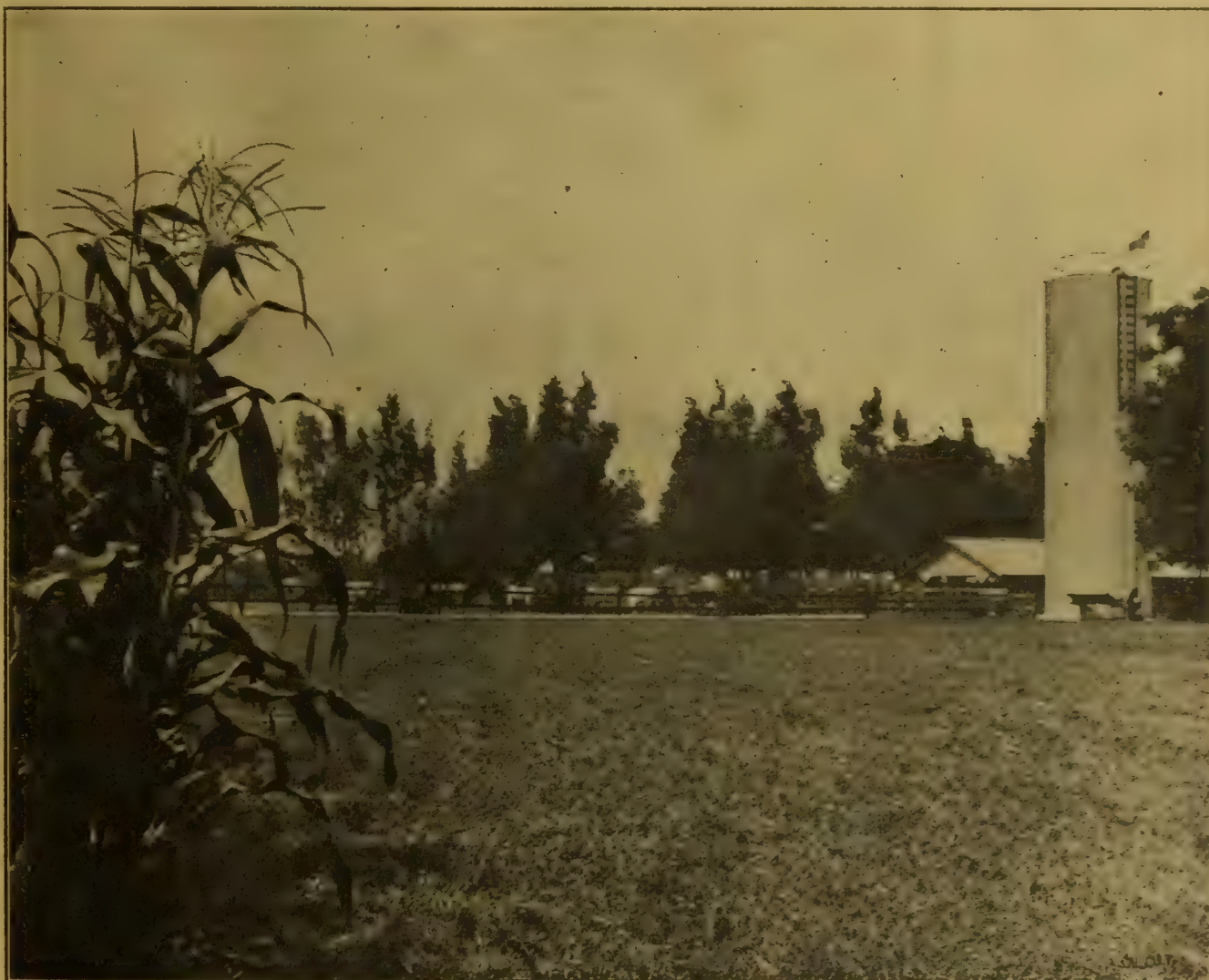
Devoted to the Rural Home and Ranch

LOS ANGELES

March 30, 1918

SAN FRANCISCO

It has been said that "a good dairy cow will make four times as much human food from a given amount of feed as will a steer."



**W**AR is making bare the world's cupboards; the granaries are being emptied, the flocks thinned, the herds butchered, the mines scraped. War is making everything dear except human life; the destructive monster is consuming more food essentials than it is producing. Want follows hard in the wake of the chariot wheels of Mars, and the whole world is threatened with hunger, the menace of which will become greater with the prolongation of hostilities. Victory will go to the combatants who are best fed and nourished. The food question is now paramount. Food production is as essential to victory as food saving. . . . The spade and the hoe must befriend the rifle and the bayonet.

But more than all, to keep the folks behind in working order we need more milk and milk products. We are saving our best cereals to send to Europe, but at home, and especially for growing stronger and better American children, we need more and better milk.

David T. Houston, secretary of agriculture, recently made this statement: "I cannot emphasize too strongly the urgent necessity, during war time, of increasing the production of butterfat, and of saving it for human consumption."



# Wade's Drag Saw More Than Pays for Itself in One Season

## —saws 25 cords in a day

HUNDREDS of WADE Gasoline Drag Saws are making light work of sawing logs into short lengths for farmers all over the West. It is the most popular farm machine that has ever been put on the market, because it is a big time, labor and money-saver. The initial and upkeep costs are almost nothing when compared to the immense savings it makes for you in a single season.

The New 1918  
Model of the  
**WADE**  
DRAG SAW  
is Now Ready

All 1918 Model Wade Drag Saws are to be equipped with our new improved 4 H. P. ENGINE—we have INCREASED the HORSE POWER of the engine WITHOUT INCREASING THE COST. This 4 H. P. Engine gives you an abundance of power and, therefore, a greater output per day—be sure to get a WADE—accept no substitutes.

The WADE is made of the best materials throughout, and the whole machine is constructed for hard work in the woods—practically never gets out of order, and is always ready for use. The husky little 4-H. P. engine used on the Wade fairly hums the 6-ft saw through your toughest logs. (Larger saw blades on special order.)

Wade's  
Gasoline Wood Saw  
(Portable)

**\$165 DELIVERED**  
Anywhere in the U.S.A.

1918 Model with 4 H. P. Engine

One man can move the WADE along the log, while two men can easily move it from log to log. It weighs only 285 pounds complete. The WADE is especially low in upkeep cost and gasoline used—the tank holds two gallons (enough to cut 16 to 20 cords). It is the cheapest, easiest, fastest way for you to saw your logs.

## Does 10 Times the Work of 2 Men!

Think of it! TEN TIMES as much as two men can do! The WADE will easily cut 25 cords of wood in one day.

Can you afford to pay for slow, expensive day labor when you clean up with a WADE the same amount of work in one-tenth the time?

Fuel and labor are higher than ever before—and present conditions indicate that they will continue so for a number of years—get a WADE Drag Saw and keep your labor costs down and sell your wood while it is high in price.

A good many WADE Drag Saw owners are making good money by helping their neighbors saw their wood.

Send today for this interesting booklet, "How Dan Ross Saws Forty Cords a Day." Dan Ross lives at Corbett, Oregon, and has used a WADE Drag Saw ever since they first came out. You will profit by reading his experience.



Fill in Coupon Today

**R.M. WADE & CO.**  
SINCE 1865  
**PORTLAND, ORE. - SPOKANE, WASH.**

322 Hawthorne Ave., Portland, Or. 910 N. Howard St., Spokane Wash.

How Dan Ross  
Saws Forty  
Cords a Day

COUPON

R. M. WADE & CO.

Portland, Or., 322 Hawthorne Ave. (C. C.)  
Spokane, Wash., 910 No. Howard St.

Gentlemen:—Please send me the Booklet, "HOW DAN ROSS SAW FORTY CORDS A DAY," also full information on the NEW 1918 MODEL WADE DRAG SAW.

Name .....

Address .....



# California Cultivator

Vol. L, No. 13

LOS ANGELES: MARCH 30, 1918

One Dollar Yearly

## Silos Necessary for Economical Production

C. L. Hughes Writes of the Necessity of Present Day Dairying and the Advantage of a Certain Supply of Cheaper Feed

**T**HE Cultivator invites me to write upon the subject of silos and silage feeding in California, a subject that in its present state of development in this state deserves treatment at far more capable hands than mine, yet it is possible that the particular

the cause was uncovered it might be corrected, a big demand created for pure bred breeding animals, multiplication and expansion of breeding herds, thereby creating an avalanche of advertising contracts and a whale of a bank roll for the publisher.

Since my investigation everything has come to pass except the avalanche and the bank roll for the pub-

lisher, although it pleases me that more than one breeder and livestock farmer has personally thanked me for some of the information I dug up and published.

I determined to seek my informa-

go out and buy another bunch of scrubs next year and begin all over." That reply didn't make much of an impression on me at first, but after it had been repeated in substantially the same form by possibly a hundred dif-



Iver Iversen

A dairy man who is richer by \$100 California Cultivator check and by a year's experience in careful feeding and dairy production because of the State Dairy Cow Competition.

angle from which I have observed the development of the silo as a necessary part of equipment on a modern California livestock farm may have produced conclusions that will be of value to others viewing the subject from other angles.

### Where the Weakness?

Necessity first caused me to search for a cure for a fundamental weakness in California livestock practice. When I undertook the publication of a livestock journal in California some years ago the following facts faced me as a result of some little investigations I had made:

First, in the nature of things I must look to the advertising of breeders of registered animals as the source of one of my greatest items of publishing income.

Second, the history of livestock breeding in the state showed that no great breeding establishments had been built up. Many men of wealth had invested large sums in registered breeding animals imported from the East and from foreign countries, but so far as I could learn not a single one of them had made a large financial success of his operations as a breeder.

Third, the reason for this lack of success and expansion of high class breeding establishments seemed to be lack of desire on the part of California livestock owners to breed up and improve their herds, making small demand for high class pure bred sires from the breeding establishments and very low prices even for the limited demand.

### Whale of a Bank Roll—Not

Therefore, from entirely selfish motives, I set out to find out why there was so little demand for pure bred breeding stock, to the end that once



J. W. Coppini

One of the State Dairy Cow Competition winners, whose herd of 22 cows averaged the best of any in cow testing association in California during the last 16 months. The average annual production of butter fat was 510.09 pounds.

tion by making personal visits to a large number of livestock farms, and to that end started out about the first of January, 1913. Which date reminds me that only five years have passed since then and that things have moved in California livestock farming during that short period.

### A Four Month's Trip

I first visited some of the Coast counties, then coming back to the interior started in at Red Bluff and zigzagged southward until I had reached Mesa, Arizona, spending about four months on the trip.

I saw many a herd of scrub cattle on that trip, both beef and dairy stock, and the first question I asked the owner of such a herd was; "Why don't you buy pure bred sires and grade up your herd?" The replies were varied, but before I had progressed very far I found one reply that seemed to be made more frequently than others, and that would be something like this; "Well you see we have a dry year around here about every so often, and when it does come I have to sell off my cattle for what I can get for them. If I should use pure bred sires and start to breed up my herd I wouldn't get anywhere, for about the time I had a good bunch of three-quarters or seven-eighths full blood young breeding females on hand, along comes a dry year and I would have to sell them for a song and then

ferent dairymen and range men in different localities it began to sink in.

### Stabilize or Go Broke

By the time I had worked from Red Bluff to Sacramento I had become convinced of one thing: That before substantial progress could be made in breeding up the cattle of California there must be a radical change in existing methods of crop farming and there must be some plan devised that would overcome the menace of dry years, lack of feeding, and selling of cattle at ruinous prices. In other words some great source of cattle feed must be developed to stabilize both the beef and dairy industries to the end that farmers might breed up their herds through the use of pure bred sires and be able to retain possession of those herds a sufficient number of years to benefit from the production of high grade cattle.

### Silos—There's the Solution

About this time there came to my mind a picture of the dry, burned-up, hilly, summer pastures of my boyhood, yet there were no starving cattle in the picture, for down by the barn was a silo nearly full of sweet, succulent corn silage. But no such picture had yet been conceived in a broad way in California, and so many farmers had told me that corn could not be successfully raised in the state that I had come to believe it.

**CALIFORNIA CULTIVATOR**  
THE BIG FARM WEEKLY

LOS ANGELES, CAL. MAR 13 1918 No. 5505

PAY TO THE ORDER OF J. W. Coppini \$ 100.00 DOLLARS

ONE HUNDRED DOLLARS

TO THE MERCHANTS NATIONAL BANK OF LOS ANGELES

CULTIVATOR PUBLISHING CO. INC. Frank Thomas PRESIDENT

LOS ANGELES, CAL. MAR 13 1918 No. 5506

ORDER OF Iver Iversen \$ 100.00 DOLLARS

ONE HUNDRED DOLLARS

TO THE MERCHANTS NATIONAL BANK OF LOS ANGELES

CULTIVATOR PUBLISHING CO. INC. Frank Thomas PRESIDENT

LOS ANGELES, CAL. MAR 13 1918 No. 5507

ORDER OF W. Terkelsen \$ 100.00 DOLLARS

ONE HUNDRED DOLLARS

TO THE MERCHANTS NATIONAL BANK OF LOS ANGELES

CULTIVATOR PUBLISHING CO. INC. Frank Thomas PRESIDENT





PURE BRED



REGIST'D HOLSTEINS



Producing

## Prince Gelsche Walker Korndyke

He is brother to Miss Valley Mead De Kol Walker, who holds two world's records as a senior two and junior three year old, and won first place in the recently closed California Dairy Competition over all breeds, and another sister Lady Hiske Walker, made over 34 pounds butter in seven days as a junior four year old, a state record. His calves are being called for from every direction. We haven't today anything in our herd in the bull calf line over six months old. Don't you think it would pay you to raise a young bull calf for a future herd sire, especially if you can get him at a very reasonable price?

## King Korndyke Pontiac

is shown below, and he is the sire of the \$6500 bull King Korndyke Pontiac 20th, sold in the Guaranty Sale. Wouldn't you like to own a young brother to the highest priced bull ever sold on the Pacific Coast? We will sell you one at a price that will really surprise you, and which we will gladly give on application.

## JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL  
PROP'R.

C.W. YOUNG  
SUPT.



Superior

Guaranteed

*Come to Stanislaus County for Registered Holsteins*

**STANISLAUS COUNTY LEADS**

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

I have for sale a 14 months old son of  
**Abbie DeKol of East Bank 2d**  
winner of third prize in California Dairy Competition, 856.1 pounds butter fat in ten months. He is a fine, straight individual, and sired by a son of a great show cow that won prizes in the butter fat competition at two fairs. Priced right.

**H. E. CORNWELL,**  
Route B Box 183, Modesto, Cal.

**I Will Sell**

my milking herd of registered Holsteins in North San Joaquin Breeders' First Consignment Sale at Modesto on May 9. Interested parties are invited to come and see the herd before sale day.

**J. W. BENOIT,**  
Route C Box 183, Modesto, Cal.

**Creamcup Holsteins** Headed by the 33.92 pound bull Creamcup Champion Pontiac  
Burke. A few young bulls for sale. **M. HOLDRIDGE, Rt. B, Box 366, Modesto, Cal.**

North San Joaquin Breeders 1st Consignment Sale  
will be held at  
Modesto, California Thursday, May 9, 1918

**Pelandale Holsteins**  
Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.  
**J. A. Pelanda, Rt. B, Modesto, Cal.**

**Segis Pontiac De Kol Dutch**  
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. **E. E. Freeman, Rt. B, Modesto**

**White House Holsteins**  
A well bred proven herd sire for sale, also a few bull calves.  
**A. M. Bibens, Rt. I, Box 307, Modesto, Cal.**

**Thompson's Registered Holsteins**  
Young bull calves for sale with yearly record backing.  
**Luther Thompson, Rt. A, Box 351, Modesto, Cal.**

**HOLMES STOCK FARM**  
Registered Holsteins of best breeding. Young bulls for sale.  
**R. L. Holmes Modesto, Cal.**

Our Senior Herd Sire is **KING KORNDYKE HENGVELD ORMSBY 7th** Five of his sisters sold at public auction for \$23,800, an average of \$4760.  
This blood has made some of the world's greatest producers. Our junior herd sire is **TOYON KING KORNDYKE SOLDENE**, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne. Young bulls for sale. No females.  
**REGISTERED BERKSHIRE BOARS**, sons of the \$1500 boar Star Leader, for sale.  
**Kounias Registered! Stock Farms, Modesto, Cal.**



**Registered Milk Short Horns**  
Specially Good Heifers and Bull Calves. Extra Breeding.

Heifers born:	Bulls born:
April 19, 1917.	November 19, 1917.
September 28, 1917.	January 15, 1918.
October 10, 1917.	February 15, 1918.
November 11, 1917.	

WRITE US FOR DESCRIPTION AND PRICES.

**JOHN LYNCH RANCH**  
Petaluma, California

Yet I found grounds for doubt about the truth of the popular opinion in regard to corn in California, for had I not recently seen with my own eyes a silo full of corn that had been grown on the top of an unirrigated hill in Santa Cruz County?

Anyhow the silo idea persisted, and to the other subjects under investigation on the trip I added corn and silos, and between Sacramento and Mesa, Arizona, I went to see every silo of which I could get information, and on the whole trip found only a few over 30. I also found some highly illuminating facts on the raising of corn for silage in California, and long before the trip was ended I felt absolutely sure that of all the great agencies that must be made to operate toward the betterment of California livestock farming, the silo was the one great stabilizer that would make safe the business of the dairyman and beef

course of my travels I came across a bunch of these half starved beasts my eye almost unconsciously sought out in the lands of that farm a spot that would look likely for a crop of ensilage corn.

Of types of silos, crops for silage, methods of feeding, I offer no advice or comment beyond the statement as an established fact that there are many silage crops that have already been successfully grown in this state, many feeding methods that have proved successful in practice, practically every section of the state has been proved capable of raising silage corn that will go from 12 to 30 tons per acre, and that in view of these facts it will before very many years be a sign of improvidence on the average California livestock farm if no silo appears in the equipment, for it must ever be kept in mind that the function of a farm animal is to convert



A Humboldt County Dairy

The dairy of 37 cows of Iver Iversen, which proved a winner in the 25 to 50 class in the State Cow Testing Competition.

raiser and thereby bring about widespread expansion and greater financial returns in the breeding of pure bred registered cattle.

#### Biggest Thing in California

Today I believe more fully than I did five years ago that the silo is the biggest thing in California livestock feeding practice. Farms in some sections may get along without silos, as they have done for years, but I doubt if there are any farms operating even a modest herd of cattle that would

the grasses and grains grown on the farm into other forms suitable for marketing to human needs, returning to the soil the rich soil fertilizing elements not converted into meat, wool, or milk, and silage has been proven one of the very greatest and most profitable home grown crops.

#### A Prophecy

Thus has my course of reasoning led me to the silo, that the livestock farmer may prosper and use pure bred sires to bring about greater pro-



Dairy Made Men

Some of the contestants in the State Dairy Cow Competition. Photo taken at Davis at time of the awarding of the prizes.

not show better profits through the feeding of silage. But it is, in a consideration of the great cattle business of the state as a whole that the silo assumes its real proportions and appears as the great stabilizer of the business, for no industry as a whole can possibly prosper in the fullest sense if some of its units are subject to periodical disaster, and a dry year in California is certainly a disaster to the cattle owner without feed.

perity for himself and business to the breeder of registered animals, for in livestock farming the silo, pure bred sire, and prosperity are closely bound together in my mind.

There is danger and no honor in prophesying, but I am willing to risk this: Not long hence when the California livestock farmer goes to his banker for accommodation he will have two new questions to answer. "Do you use pure bred sires?" "Do you feed silage?"

#### Thousands Starving

California has only fairly begun to build silos, even though in Tulare County over 100 were built in 1917 and in Stanislaus County over 250 were built in the same year. Cattle suffered for want of feed in some sections of California this year, and again many owners sold at prices that meant heavy losses. While reports of conditions perhaps in many instances left exaggerated impressions, yet it is true that there were thousands of hungry cattle in the state toward the end of the sustained dry season, and somehow when in the

#### CALLED A JOKE

A mean joke was played on a man in a fashionable restaurant the other day.

"They pinned my coattail to the tablecloth," he says, "and then told me I was wanted on the telephone."—Exchange.

Advertising is not a gamble; the fellow who tries to do business without it is taking all the chances. —Farm Machinery.



## Dairy Farmers Conference

Written for California Cultivator By C. A. Briggs

**R**EGULAR California weather, sunny skies and springlike air made the meeting of the state dairymen an ideal one as to outside conditions. The enthusiasm of the men attending and intense interest in every bit of the two days happenings, which were crowded with events of value to all, made this, perhaps, one of the most valuable meetings that has ever been held in the state. The competition for points and awards, extending as it has over many months, has kept the contestants under a strain which was relaxed at the meeting, and every one went in for a good time. Those attending were among the leading and best dairymen in the state, the men representing grade herds and those owning registered stock being of about equal number.

Dean Van Norman made the opening address, followed by Prof. Woll, who has conducted the competition from its start to the finish, with an able paper on "War Time Rations for the Dairy Cow." S. H. Green presented the creamery side of the question and urged a personal interest in this branch of the business by all dairymen. C. L. Roadhouse spoke on the production of market milk. Prof. Gordon H. True's lecture on "Conformation and Production" was given in the open air at the farm barns, with types of dairy cows and offspring to point the moral. Prof. Woll's paper at the evening session reviewed in detail the entire work of the dairy cow competition.

Following this Dean Hunt made a presentation speech in which he said that he was only acting as a steward to represent those who had so generously given splendid presents aggregating over \$7500 to show their interest in and promote the great dairy industry of the state. The audience broke out in applause as each name was called and the award given to the fortunate winner.

A. W. Morris, the veteran breeder, made the closing talk, thanking, for himself and all the other contestants, the generous spirited donors of the prizes and stating that he considered that the competition just closed marked the beginning of an epoch of great development in a great state industry.

On Saturday the prize winners gave ten minute talks on "How My Cows Were Fed and Handled." A. L. Ingebritson spoke on "The Supervisor of Dairy Tests." C. V. Castle read a splendid paper on "Raising Dairy Calves." Frank L. Morris spoke on "The Breeding of Pure Bred Dairy Stock." This completed the morning session.

In the afternoon F. M. Hayes gave a lecture and demonstration on "Diseases of Dairy Cattle, Tuberculosis and Abortion." The most impressive thing at this conference was the intense interest manifested by all; the countless questions asked of every speaker, and the valuable information given out.

It is perhaps hardly necessary to say that those competing have received in every case ample reward for efforts. Far in excess of any awards won is the better knowledge gained of chosen business and of the possibilities that lie in themselves, farms and herds. Every man in the dairy business in the whole state, whether he won a prize or not, has profited, and the business itself is on a firmer foundation because of this competition and this very successful meeting.

### THE CALIFORNIA STATE DAIRY COW COMPETITION

**D**URING the past quarter of a century the main dairy breeding associations in this country have established what is known as an advanced registry, or Register of Merit, for cows of their respective breeds, based on the production of the cows in so-called official or yearly tests. An early effort was made by one of the associations to conduct such tests by a committee of their own, but the result was not satisfactory, and it was not until after the Babcock test for determining the fat content of milk had been published and been accepted

as correct by dairy authorities and breeders of dairy cattle, that tests for the production of milk and butter fat were placed on a sound basis. The agricultural colleges from the beginning encouraged the testing of cows and sent members of their staffs to the farms of breeders and dairymen to conduct tests of short duration. The seven-day test gradually became adopted as standard among Holstein breeders, and in 1894 the H. F. Association established its advanced register to which cows were admitted that produced above certain minimum amounts of butter fat in tests conducted by an officer of the experiment station or agricultural college. The American Guernsey and Jersey Cattle Clubs after a few years followed the example set by the partisans of the black and white cattle, and all the different dairy breeds, with some classed as dual purpose breeds, have

now provided for an advanced registry of their cows on the basis of tests conducted under the direct supervision of the agricultural colleges or stations. The work that was thus originally taken up by these institutions as a voluntary educational effort before long became a regular feature of their activities and has increased in importance with every year until today it is difficult to conceive of its being given up or turned over to other agencies.

The system of advanced registry testing is of value to the individual breeder because it gives him definite information as to the production of his cow, and he can point to the records of production made in these official tests with perfect assurance that the dairy public, including prospective customers, will accept them on their face value and will pay prices for his stock according to the records made by the cows or by their near relatives. It enables the breeder to determine the influence of the bull on the dairy production of his offspring, and thus makes progress possible. It is

inconceivable that the cow producing over 1200 pounds of butter fat in a year, or over 40 pounds in seven days, would have been developed but for the invention of the Babcock test or some similar practical method of determining the per cent of fat in milk and the subsequent establishment of the A-R system by the various breed associations. Of far greater importance than the development of these phenomenal cows, however, is the gradual improvement of common or grade herds by the use of pure bred sires whose dams have proved their dairy capacity by a production considerably in excess of that of cows in dairy herds. For, as is often stated, the bull is half the herd and frequently more, and if he can raise the standard of production of his daughters above that of their dam, say by only 50 pounds of butter fat per head a year, which is not an uncommon experience, it will mean much to the individual dairyman, and in the aggregate will add millions of dollars to the dairy industry of the state.

Continued on Page 401

## ANNOUNCEMENT

### Valuable Bull to be Sold at Public Auction

### April 17th, 1918

At the 7th Semi-annual Sale of the Western Washington Holstein Breeders Association at Kent (near Seattle) Washington

#### 3 A. R. O. Daughters

##### Jenny Pontiac of Greenbank

Milk Jr. 3 year-old 514.1  
Butter " " " 20.01

##### Netherland Pontiac of Greenbank

Milk 1 yr. and 10 months 370.6  
Butter " " " 15.46



#### 3 A. R. O. Daughters

##### Fay Pontiac Burke of Greenbank

Milk Jr. 2 year-old, 42 days after calving 319.4

Butter Jr. 2 year-old, 42 days after calving 13.56

### King Korndyke Pietertje Pontiac, 127387, Born April 24th, 1912

Some of the Best California blood flows in his veins

In consigning this bull to the seventh semi-annual sale of the Association, we are offering the breeders of the Pacific Coast and the Northwest, a rare opportunity to buy at their own price a proven sire of the very choicest breeding. In addition to being a superb individual weighing 2400 pounds, he is a son of the mighty King of the Pontiacs and May Korndyke 2d, one of the good cows of the A. W. Morris & Sons herd of Woodland, California. King of the Pontiacs, as all posted Holstein breeders know, is the leading sire of dairy cattle; no sire, of any breed has near approached him. His list of 233 A. R. O. daughters, numbers nearly 100 more than that of any other sire; his nearest rival being his own sire, Pontiac Korndyke, having 145 A. R. O. daughters to his credit. King of the Pontiacs' 30 pound list numbers 21 daughters; and here again his sire Pontiac Korndyke stands second, credited with 16 30-pound daughters. Not satisfied with having the largest list of A. R. O. and 30-pound daughters, King of the Pontiacs is the sire of King Pontiac Konigen, the only sire having a 40-pound daughter, whose sire and grandsire each has one or more 40-pound daughters; and to go further, King of the Pontiacs and his sire, Pontiac Korndyke, are the only sires, each having 40 daughters averaging 30 pounds. Space will not permit further details of the merits of this great sire, only to mention that he has 129 proven sons, and 62 producing daughters, entitling him to the credit of being the greatest transmitting as well as the greatest producing dairy sire that the world has ever known.

May Korndyke 2d, the dam of KING KORNDYKE PIETERTJE PONTIAC, is one of the good cows of California. She is a 26-pound three-year-old daughter of Beauty Pietertje Prince, 30 A. R. Os. and May Korndyke, the first 30-pound three-year-old, and is the dam of Prince Geische Walker Korndyke who sold for \$4,000 at public auction in California three years ago, the highest price paid at auction in that state up to last December when King Korndyke Pontiac 20th, a yearling son of the twin brother of KING KORNDYKE PIETERTJE PONTIAC, brought \$6,500. While May Korndyke 2d was last under test she was producing at a rate that indicated she would go well over 30 pounds. Unfortunately she met with an accident that obliged her owners to abandon the test. We are advised by her owners that when she next freshens she will again be tested.

For tabulated pedigree of KING KORNDYKE PIETERTJE PONTIAC, see sale catalog, which will show that on his dam's side he is a grandson of Clarissa Clothilde Pietertje, 32.52 pounds butter from 679.2 pounds of milk in seven days, and Job Gelsche De Kol Burke, the best producing son of old Prilly, queen of dairy cows, and the greatest transmitting cow of the breed through her six A. R. O. daughters and her three proven sons. Prilly and her six daughters, all but one, have records above 25 pounds. See article "Prilly, the Greatest Transmitting Cow," in March 2d issue of Holstein-Friesian World.

KING KORNDYKE PIETERTJE PONTIAC is a helper breeder, over 80 per cent of his calves being helpers. Of his 50 daughters only three, so far, have been officially tested. Those not yet in milk are developing splendidly and have every indication of becoming heavy producers.

From a letter just received from A. W. Morris & Sons, the California breeders and the owners of May Korndyke 2d, we quote as follows:

"The twin brother to your bull KING KORNDYKE PIETERTJE PONTIAC, now owned by Mr. F. W. Kiesel, Sacramento, California, is one of the most popular sires in California. Mr. Kiesel recently told the writer that he would refuse \$5,000 for him. One of his sons, King Korndyke Pontiac 20th, sold in December sale at Sacramento for \$6,500. His daughters are showing up splendidly, and while he has had little service and none have really had an opportunity, they are very promising and we are confident that he is a great bull. With all that has developed on his sire's side, it would seem that your bull should bring a good figure."

This is a rare opportunity to acquire, at your own price, a proven sire that already has a large list of maturing daughters, from high record dams that should develop into heavy producers.

The quality of the consignment of heifers and cows far exceeds the average of any previous sale, there being consignments from such important herds as Hollywood Farm, Carnation Farm, Wm. Bishop, Donnybrook Farm and from six other large breeders, including one complete dispersion sale. It is an excellent opportunity to secure choice breeding and A. R. O. stock.

Remember the date, APRIL 17th, 1918, and the place, KENT (NEAR SEATTLE) WASHINGTON.

**The Greenbank Company**  
Owners of Greenbank Farm  
800 Leary Building, Seattle, Washington



# AJAX TIRES

GUARANTEED IN WRITING 5000 MILES

## Dirt Track Champion of America

Special  
Patented  
Feature

Ajax  
Shoulders  
of Strength

Nation-wide victories won for Ajax Tires the *Dirt Track Championship of America*. State Fair crowds from Texas to Massachusetts witnessed these Ajax triumphs.

These dirt tracks are country roads with a fence around them. Ajax victories on them mean Ajax service for you. On proved performance Ajax Tires become your natural selection—the sure service, money-saving tire for the farmer.

### SHOULDERS of STRENGTH

The picture shows you Ajax Shoulders of Strength—a special patented feature found only on Ajax Tires.

These Shoulders of Strength give more tread on the road—more rubber where it should be—mean added wear—more miles. Because of them road friction is evenly distributed over the entire width of the tread instead of centering in one spot and wearing through to the fabric.

### AJAX ROAD KING

"More Tread on the Road"

In competition ON THE ROAD, Ajax Road King will prove its superiority. Built for city streets or farm highways. Note triangle barb tread—an added safety factor.

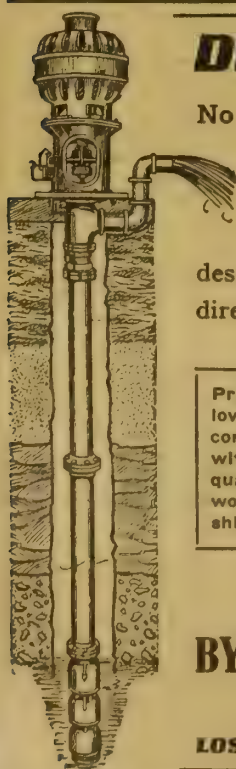
### 97% Owners' Choice

This huge percentage of Ajax total factory output goes to car owners as their individual choice over other tires that came with their cars.

Ajax Tires—Ajax Inner Tubes give real service. Booklet on Ajax Shoulders of Strength mailed free on request.

**AJAX RUBBER COMPANY, Inc.**  
1796 Broadway, New York

*"While Others Are Claiming Quality, We Are Guaranteeing It"*



## DEEP WELL TURBINES

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



"Write for Catalog No. 48"

**BYRON JACKSON IRON WORKS, Inc.**

SAN FRANCISCO

LOS ANGELES

VISALIA

When writing advertisers, mention The Cultivator.

## Prune and Apricot Growers Organization

If the California Prune and Apricot Growers, Inc., is to exercise its corporate rights, become first hand packers of our growers' deliveries and develop the policies to govern our future manufacturing sales and advertising operations, we must continue to control in marketing our production. We have many thousands of acres of young orchard coming into bearing in the next few years; also many bearing orchards not yet joining in the support of our future aims and purposes. We have made such a success of our first year's operations, that our continuance as a successful commercial concern is assured, so far as ordinary business details go. But if we are to become the dominant influence on markets at all times and reap the advantages of such a position, we must secure and maintain greater and greater control of the production.

We now have under way a plan to own and operate a good percentage of our packing facilities before the 1918 harvest. We have similarly important plans and policies mapped out for the advertisement and sale of "Sunsweet" prunes and apricots, where many other brands are now offered.

We shall be able to go forward with these plans according as we can secure the signing and support of greater acreage.

In order, however, to properly develop and maintain markets and put forward the merchandising, advertising, and sales campaign that we plan, we are soliciting a greater cooperation of growers. Seventy-five per cent of the production means that we have three tons to every one ton applied in an antagonistic manner in the market. You can readily appreciate that under some very serious conditions which might arise some seasons, the one ton would be a serious factor opposing our aims and purposes. You can also readily appreciate the vast difference that would accrue from the control of 15 per cent more of the production. The association would then hold nine tons for every one ton in the hands of our competitors, and in this case the one ton, even in the most trying times, would certainly be a negligible quantity.

During the spring we will hold meetings in all principal fruit districts for the better information of our growers. In the meantime, anyone desiring to make inquiry into detail or general features of the association operations and future aims will receive prompt attention by addressing Organization Department, California Prune and Apricot Growers, Inc., San Jose.

## Control of Western Blight of Tomatoes

Preventive measures that should be taken against summer blight of tomatoes, a troublesome disease which occurs in the Rocky Mountain and Pacific states, are described in a recent statement from the United States department of agriculture. The disease, federal specialists explain, is distinguished by a marked upward and inward curling of the leaves, by a yellow color of stems and foliage, and by failure of the plants to produce fruit. It is believed to be due to a soil fungus which attacks and kills the feeding roots. This parasite can live on organic matter in the soil and is beyond the reach of sprays. Control, therefore, is difficult and has not yet been fully accomplished. The following precautionary or preventive measures are advised:

Grow the tomato seedlings in soil in which tomatoes have shown no symptoms of the disease or in soil sterilized by steam or boiling water.

There is some advantage also in setting out large plants, as they make considerable growth before the fungus invades their tissues, and therefore produce fruit.

It should also be helpful so to grow the plants that their roots will not be injured in transplanting. Although a parasitic fungus can invade uninjured tissues of its host plant, it usually enters more readily through wounds. If from the seed-bed the plants are pricked off into paper pots, dirt bands, or paper drinking cups without bottoms, they can be grown to considerable size and transplanted to the field without removing the paper or injuring the roots. This is also a convenient and relatively economical method of doing the work.

One of the most effective means of controlling tomato blight is the use of other crops in rotation with tomatoes. As the parasite is unable to live on other crops, it is obliged to exist saprophytically; that is, living on dead or decaying organic matter, in competition with other fungi. This does not entirely eliminate it, but greatly reduces it in quantity. To prevent its accumulation, tomatoes should not be grown on the same land oftener than once in four or five years.

The breeding of blight-resistant varieties is the most hopeful means of controlling this disease. Some preliminary tests of resistance are now being made with a view of developing a resistant variety, but every grower should also make selections for himself. Select from a badly infested part of the field only the plants that are free from the disease,

and plant the seed of each selection in a separate row or plot. Determine the relative merits of the selections from the average disease resistance and yield and quality of fruit of their progeny. Do not mix selections nor save seed from any but the one that transmits the most desirable qualities to its progeny. When this is found multiply it and use it as seed for the field crop.

### FARM MACHINERY CARE

Because of shortage of labor in many communities, the need for speeding up food production, the scarcity of materials which enter into the manufacture of farm implements and machinery, besides manufacturing and distribution problems incident to the war, special efforts should be directed at this time toward more efficient conservation of farm equipment.

A great deal is said concerning proper oiling of machinery, and too great emphasis is not apt to be placed upon this important factor. Greases and oils of good quality should be freely used, the old saying that "oil is cheaper than machinery" being very true. Bearing surfaces should be kept clean, and it should be remembered that a mixture of sand, dirt, fragments of metal and oil make a very efficient grinding material. Gummy material may be removed with a little kerosene.

It is well known, but too little realized, that proper adjustment of moving parts is fully as important as oiling, especially with fast moving machinery. A loose bearing is more damaged by a few hours run when out of adjustment than by several months operation when fitted snugly.

A third factor in the care of machinery is protection from weather. All metal parts which are likely to corrode should be coated with paint or grease. Plow shares and moldboards should be thoroughly cleaned and smeared over with axle grease, crude oil, dirty motor oil or any other heavy bodied grease as soon as it is removed from the field. Rust pits will form in a few hours if iron is not protected, and corrosion assists rapid wear and weakens machinery very quickly. Wooden parts frequently should be coated with a good quality of paint as checks caused by sun and rain, result in much trouble. Both wood and iron should be protected by sheds.—H. C. Heald, University of Arizona Agriculture Experiment Station.

You can't spend your money and save it too! Buy war savings stamps!





QUICK AND ECONOMICAL TRANSPORTATION

## Nash Trucks Cut Down Your Time to Market

Truck gardeners all over the country are cutting down their time to and from market by hauling their loads with Nash trucks.

With Nash trucks, they can carry bigger loads, leave home later and get back earlier. Distance to and from town is changed almost from a matter of miles to a matter of minutes.

The Nash two-ton capacity, rear driven truck is admirably suited to this work.

It is staunch and powerful and most economical in operation.

That Nash trucks are equipped with

**NASH MOTORS COMPANY, KENOSHA, WIS.**

*Manufacturers of Passenger Cars and Trucks*

*Communicate with Your Nearest Dealer for Prices and Deliveries*

**One Ton**

**Two Ton**

**New Nash Quad**

**Troy Motor Sales Co.**

**Pacific Nash Motor Co.**

Distributor for So. California and So. Nevada  
1224 S. Flower St.

Los Angeles, Cal

Distributor for No. California, Utah, Idaho, No. Nevada  
1529 Van Ness Ave.

San Francisco, Cal.

# NASH MOTORS



# IT IS Not Too Late

—T O—

## Plant Trees and Get Perfect Stand

**If you use some of the high grade stock we are holding dormant in our cold storage plant.**

We do not attempt to hold our trees back by the popular practice of pulling them from the trenches and airing the roots until they can't start properly.

Instead we give them *December temperature* until the planter is ready. Then when they are planted in dormant condition they spring into life with all of the energy nature has stored in them.

This is not an experiment. We know that the results will be very gratifying to the planter and we stand behind every delivery we make.

We have nearly a hundred thousand fine trees being held in perfect condition until land is ready to receive them.

In this stock are included a good supply of

<b>Almonds</b>	<b>Apples</b>
<b>Peaches</b>	<b>Cherries</b>
<b>Apricots</b>	<b>Plums</b>
<b>Prunes</b>	<b>Nectarines</b>
<b>Pears</b>	<b>Walnuts</b>

At our citrus nursery at Avocado, Fresno County (where there is no frost) we have a good supply of

**Oranges Lemons  
Pomelos**

Also a fine lot of olives in Mission and Manzanillo varieties.

**Prompt Shipments. Fine Stock**

Kirkman service gives the planter a satisfactory orchard.

**KIRKMAN NURSERIES  
FRESNO, CAL.**

Established 1888.

## Increase the Organic Matter



FARMERS in semi-arid countries always have one soil problem difficulty to solve. That is, securing humus or vegetable mold which makes for better physical and chemical conditions. Stable manure is high of price and impossible to get in quantity required by our fields. Green manure offers only a partial solution, though of such great value that it must be availed of whenever possible. This soil need has caused many to inquire as to the value of sawdust or planer shavings, or any type of wood waste. Many orchardists have resorted to the cutting up of prunings and scattering on the soil. Such a method of securing humus, like that of securing phosphorus from untreated bone and phosphate rock, is slow but sure and effective. In the matter of shavings, however, it is well to give warning regarding freshly made planer shavings of redwood. In these there is a tannin or at least some substance which has an injurious effect if the shavings are applied freshly from the mill. We recall that many years ago we saw a number of orange trees seriously injured by a heavy application of these freshly made shavings. Some have maintained that this injurious effect can be done away with if a few months exposure to air and water precedes application to the soil. We have not heard this point raised as to Oregon and other pine which decompose quickly and make a magnificent humus builder. As to the amount of humus furnished by different substances we will furnish the following estimate: It requires, according to Snyder, 32.7 tons of cow manure, 24.5 of green clover, or 5.5 tons of straw to make one ton of humus; then to increase the humus content of our soils by one-quarter of one per cent

would call for an application of: 82½ tons manure at a cost applied of about \$3.50 per ton, \$288.75; 61½ tons green clover, which the citrus grower cannot produce; 13½ tons straw at a cost applied of about \$17 per ton, \$233.75; 13½ tons shavings at a cost applied of about \$8.50 per ton, \$116.90.

It is therefore quite clear that the shavings, which contain but slight amounts of plant foods, released plant foods contained in the soil and in decaying and forming humus made conditions more favorable to bacterial activity, and that the nitrogen required for the greater growth made was supplied by nitrogen gathering bacteria. In other words, the nitrogen was manufactured in the soil; it was not purchased and applied.

This being the case, the grower who understands the fundamental principles of soil fertility and soil improvement will readily recognize the advantage of following the teachings of Hopkins; "That the material that will furnish the need at least expense and trouble is the material to use."

The value of shavings has been clearly demonstrated by E. P. Haskell of Montebello: In 1914-15, Mr. Haskell applied about nine tons of Oregon pine shavings to seven rows of orange trees, about 1½ acres. The soil of these seven rows and of the adjoining rows was the same. There had been no difference in the growth of the trees prior to the application of the shavings. Methods of cultivation, irrigation and fertilization have been the same throughout the grove (55 acres). After the application of shavings the trees of the seven rows grew more vigorously and produced more fruit. Today, four years after the application was made, these trees are considerably larger than any trees in the entire 55 acres.

## Bulletins

A bunch of especially interesting bulletins is now available, issued by U. S. D. A. One of interest to all live stock men is:

"A Method of Calculating Economical Balanced Rations," It is Bulletin 637 of U. S. D. A., Office of Farm Management. Others are:

Farmers' Bulletin 799, "Carbon Disulphid as an Insecticide," written by W. E. Hinds.

Farmers' Bulletin 899, "Surface Irrigation for Eastern Farms," is by F. W. Stanley.

Farmers' Bulletin 904 is of value to all of us, "Fire Prevention and Fire Fighting on the Farm," by H. R. Tolley and A. P. Yerkes.

Farmers' Bulletin 909, "Cattle Lice and How to Eradicate Them," by Marion Imes, gives full description of cattle lice and methods of control, or rather eradication, for eradication is aimed at with this pest.

Farmers' Bulletin 914, "Control of the Melon Aphid," which attacks cucumbers, melons, other cucurbits, cotton, oranges, etc., is by F. H. Chittenden, entomologist in charge of truck crop insect investigations in California. This bulletin, while only of 16 pages, is of practical interest to every producer who has to deal with aphid, and if there is any Californian not acquainted with this pest, let him hold up his hand.

Farmers' Bulletin 915, "How to Reduce Weevil Waste in Southern Corn," by C. H. Kyle.

The Superintendent of Documents, Washington, D. C., can supply the above.

The agricultural experiment station of the University of California is continuing the issuance of helpful bulletins and circulars. The latest distributed are:

Bulletin 291, "The Common Honey Bee as an Agent in Prune Pollination," by A. H. Hendrickson.

Circular 190, "Agriculture Clubs in California," by B. H. Crocheron.

Circular 192, "Cotton in the San Joaquin Valley," by John W. Gilmore.

The state board of viticultural commissioners is also issuing "Bulletin of California's Grape Industry, No. 10."

Other reports which are annuals are those of the state fish exchange of California, state market director of

California, and state council of defense.

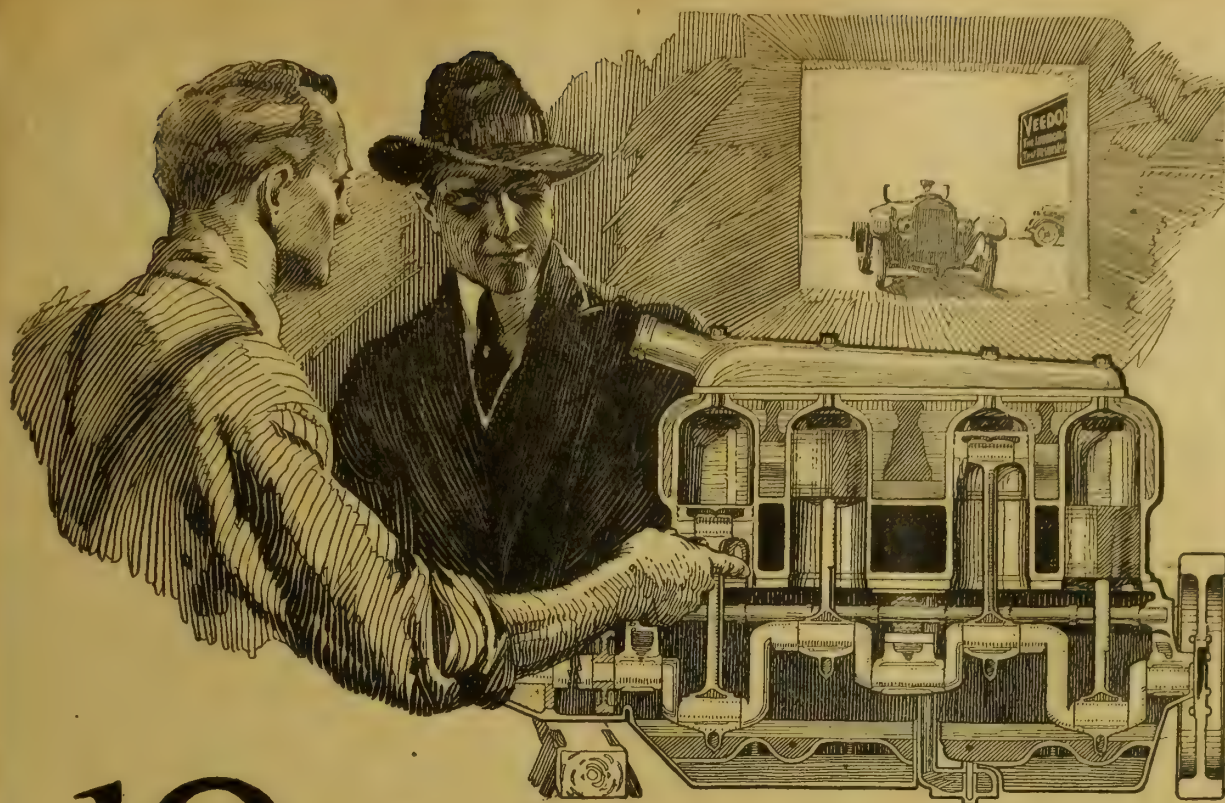
The University of Arizona, Tucson, is also issuing a series of Timely Hints for Farmers, usually of about eight pages on the following topics: 129, "Curing Meat on the Farm"; 130, "How Much Seed to Sow"; 131, "Sanitary Water Supply for the Home"; 132, "Hairy Peruvian Alfalfa"; 133, "A Little Farm Well-Tilled"; 134, "Unproductive Soils, Their Cause and Management"; 135, "Soapweed or Palmilla (Yucca Elata) as Emergency Forage."

## ENCOURAGE GARDENING

Los Angeles has one institution which, if it does not stand alone, is somewhat peculiar in some respects. Somewhat less than a year ago a movement was started to promote a general agricultural fair on the old Sixth District grounds, which more recently has been called Exposition Park. One feature of the Exposition fair, now called Liberty Fair, was to be a demonstration garden, which was to be small and an inspiration for the home gardener, but no effort was made to center all the interest in the one plot in Exposition Park. In order to induce as general home planting as possible, thousands of plants were grown and given away to home gardeners. We might almost have said millions of plants were given away, for the number was far in excess of one million. During the month, February 15 to March 15, the number was 115,464. The greatest number of any kind of plant given was onions, 47,000. Others given away were beets, cabbage, cauliflower, kohlrabi, lettuce, etc. Besides this, to families which have no possibility of making garden, and who too often do not have fresh garden vegetables, there were distributed one million heads of cabbage, Brussels sprouts, cauliflower, chard, bunches of onions, radishes, tomatoes, turnips, and many other garden products ready for consumption.

Esparto, Yolo County, is proud of the fact that its entire cotton output of Long Staple has sold for 90 cents per pound. The output, however, was less than three-fourths of a ton.





# 19 places where sediment damages your engine

## 19 places where sediment damages your engine

1. Cylinder walls
2. Pistons
3. Piston rings
4. Wristpins
5. Wristpin bearings
6. Crankshaft main bearings
7. Crankshaft
8. Connecting-rod bearings
9. Connecting-rods
10. Valves
11. Valve seats
12. Valve cams
13. Camshaft bearings
14. Camshaft
15. Timing gears
16. Ignition driveshaft bearings
17. Generator shaft bearings
18. Oil circulating pump
19. Spark plugs

**W**HEN your engine loses power, knocks, bucks and overheats, nine times out of ten it is sediment in the oil that is to blame.

Just look at the long list of vital parts that will quickly show serious wear when sediment is present in any considerable amount.

Ordinary oil cannot resist the intense heat of the engine—200 degrees to 1000 degrees Fahrenheit. It breaks down quickly. The resulting sediment crowds out the oil with true lubricating qualities from points where it is needed most. Moving metal surfaces, which should always be separated by a protecting film of lubricant, are thus thrown into direct contact.

### Why sediment causes wear

A strong magnifying glass reveals millions of microscopic teeth covering the apparently smooth surface of a bearing or other working part.

When the cushioning oil film between these surfaces is destroyed or excluded by sediment these tiny metal teeth grind together, thus causing friction and wear.

When this happens in any important part of an engine, costly replacements soon become necessary. Damage due to sediment in ordinary oil can never be repaired.

That is why you

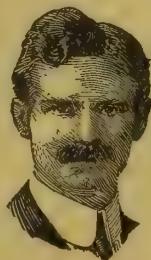
A. Ludlow Clayden, Engineering Editor of Automotive Industries, and one of the most prominent engineers in the automobile field says:

"In the past, too little attention has been paid to lubrication. Oil needs to be chosen for an engine almost more carefully than food for a child."



P. M. Heldt, recognized authority on internal combustion engines, and author of "The Gasoline Automobile," declares:

"The proper selection of oil for the lubrication of an automobile engine is a very important matter. The grade of lubricant used affects not only the efficiency of the engine but also its life."



Chas. A. Duryea, consulting engineer and a pioneer in automobile construction, states:

"Buying inferior oil is the poorest economy a motorist can practice. Inferior oils must be used in greater quantities and, even then, they increase friction, loss of power, fuel consumption, heat and repair bills. Good oil costs a little more per gallon, but far less per mile."



cannot afford to buy ordinary oil at any price. The cost of using it is appalling, because of its injurious effects on your engine.

### How the problem was solved

As a result of exhaustive research and comprehensive practical tests the formation of sediment in dangerous quantities has been successfully overcome.

Today over a million motorists avoid the sediment menace, with its accompanying troubles and repair expense, and keep their cars running like new, at reduced operating cost, by using Veedol—the lubricant that resists heat.

How Veedol reduces sediment 86 per cent is made plain by the two bottles, showing the famous Sediment Test, at the left of the page.

When figured by miles of service, and not by cost per gallon, Veedol proves much more economical than ordinary oils.

The average motor oil acts like water in a kettle. When water is subjected to intense heat it evaporates as steam. Under the terrific heat of the engine ordinary oil evaporates very rapidly through the oil-filler in the form of vapor.

Veedol not only resists destruction by heat and the consequent formation of sediment, but also reduces evaporation in your engine to a minimum. You will get from 25 per cent to 50 per cent more mileage per gallon with Veedol for this reason.

### Buy Veedol today

Your dealer has Veedol in stock, or can get it for you. If he does not, write us for the name of the nearest dealer who can supply you.

### An 80-page book on lubrication for 10c

The most complete book ever published on automobile lubrication, written by a prominent engineer, and used as text book by many schools and colleges. Describes and illustrates all types of lubrication systems; tells how to keep your car running like new at minimum expense. Also contains Veedol Lubrication Chart, showing correct grade of Veedol for every car, winter or summer. Send 10c for a copy. It may save you many dollars.

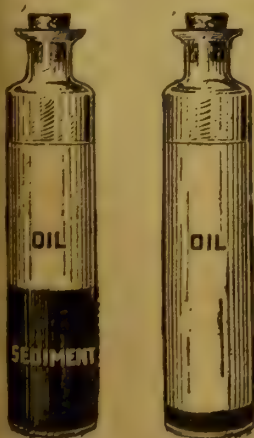
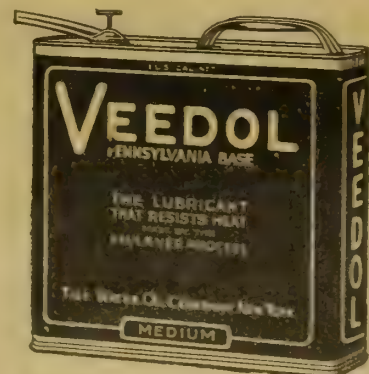
### TIDE WATER OIL COMPANY

#### VEEDOL DEPARTMENT

1719 Bowling Green Building, New York

#### Branches

Boston  
Philadelphia  
Chicago  
San Francisco



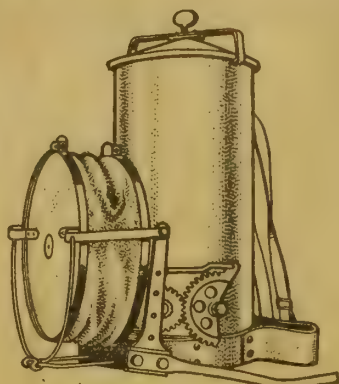
Ordinary oil after 500 miles of running showing sediment formed after 500 miles of running. Veedol after 500 miles of running.



## Red Spider and Mildew

Are Quickly and Cheaply Destroyed  
with Sulphur if Applied with the

### AMERICAN BEAUTY DUST SPRAYERS



Grass Valley, Calif., Sept. 25, 1917.  
The California Sprayer Co.,  
Reedley, California.

Gentlemen: Yours of September 18th just received, and as you wish me to express my opinion of the American Beauty Dust Sprayer, I will say that I am very well pleased with the machine. Have not had my grapes so free from mildew in the last ten years as they are this year. I have used one other sprayer, a machine, but it never did give satisfaction.

Yours very truly,  
O. L. TWITCHELL, Sr.

(COPY)

Get them at your dealers, or send us

\$16.00 for the Standard size, or \$13.50 for the Junior size.

We will send the machine on one week's free trial. If it is not satisfactory return it, and we will refund your money.

Send for Our Free Book

## THE CALIFORNIA SPRAYER CO.

6001-6029 Pasadena Ave., Los Angeles, Cal.  
Reedley, Cal.

## Farm for Profit

### and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

### MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

### HAUSER PACKING COMPANY

9th and Mateo Sts. PHONE 10336-Bdwy, 5600 Los Angeles Cal.

## Orange Seed Bed Stock

Both Sweet and Sour. Excellent Fiber Roots  
From \$20 to \$30 per Thousand

W. G. Hall Glendora, Cal.

## LIME

Pulverized Limestone.....\$3.35 per ton  
Ground Limestone.....\$2.50 per ton

This is the One Element Lacking in  
Most California Soils. Write for Booklet  
Riverside Portland Cement Co.

640 Title Insurance Bldg., Los Angeles, Cal.

## CITRUS Seed Bed Stock

Sour Orange Seed Bed Stock, strong, thrifty,  
one year plants 10 inches and up. Absolutely  
free of scale.

Walker-Hubbard Nursery Co.

San Fernando, Cal. Office First National Bank Bldg.

## First Class Sour Orange Seed Bed Stock

Grown at Laguna Bell Acres. Stock one year old. 200,000, 8 to 30 inches high,  
absolutely free from scale. Also first class Rhubarb for sale.

Locke Nurseries, C. H. Harle, Mgr., 27 N. Olive St., Alhambra, Cal.

## Argentine Ant Control

Its Relation to Mealybug and Scale Infestations. Written for California  
Cultivator by R. S. Woglum.



THE ravages of the Argentine ant in southern Louisiana, so graphically described by writers familiar with conditions in that region, should act as an incentive to horticulturists and others in ant infested communities in this state to adopt control as well as quarantine measures before

periments carried on in 1915 and 1916 at Alhambra, Pasadena, Sierra Madre and Duarte. It also has been observed to bring about excessive infestations of the black and soft brown scales and undoubtedly has a similar effect on various other species of scale insects as well as aphids. In certain southern counties, namely Los Angeles, San Bernardino and Riverside, this ant is known to infest a considerable citrus acreage, and city infestations occur in San Diego and Santa Barbara Counties.

Control of this pest can be effected either by prevention or eradication. The writer, requiring ant-free trees in his preliminary experiments, successfully used bands consisting of a uniform mixture of six parts of commercial tree banding material to one part of finely powdered sulphur. Such bands require regular inspection and occasional refreshing which the busy orchardist might easily overlook with unsatisfactory results. Furthermore in being merely preventive, banding means a continued expense year after year.

Eradication of the ant in infested areas is the ideal procedure. Noteworthy success has been achieved in Southern California during 1917 by the method used very successfully in the Southern states by E. R. Barber of the federal bureau of entomology. This consists of the distribution throughout the infested areas of a poisoned syrup in suitable containers. The syrup slightly modified for use under California conditions is made as follows:

Twelve pounds granulated sugar, seven pints water, one-quarter ounce tartaric acid (crystallized). Boil 30 minutes. Allow to cool. Add water equal to that evaporated. Three-quarters ounce sodium arsenite (chemically pure only), dissolved in one pint hot water. Cool. Add poison solution to syrup and stir well. Add to the poisoned syrup two pounds honey. Mix thoroughly.

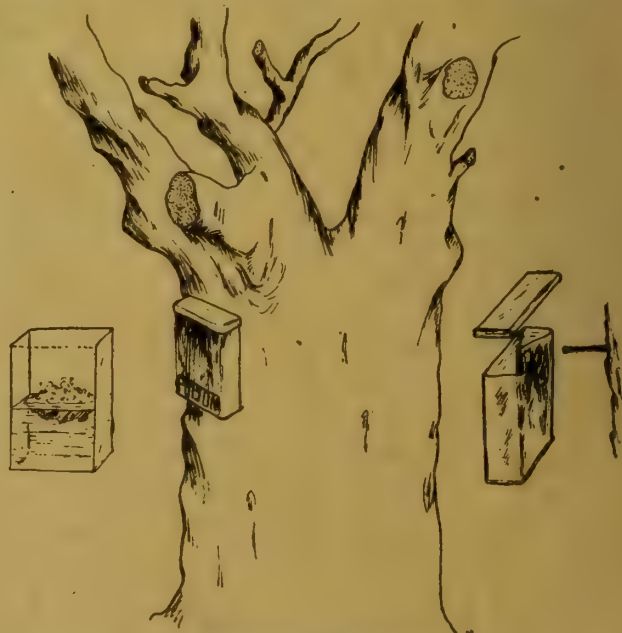
The cheapest container is a small paper bag, which is punched with about half a dozen small holes for the entrance of the ants, water-proofed by dipping in molten paraffin, and when dry, provided with a small quantity (about two ounces) of poisoned syrup and a small piece of sponge. The sponge floats on the liquid and allows the ants to feed in large numbers. A small amount of excelsior has in some cases given satisfaction



Paper Bag Poison Container

A paraffined paper bag containing poisoned syrup for ant control in place on a tree.

California's fertile acres are overrun with this most serious pest. It is stated in Bulletin 377 of the department of agriculture, entitled "The Argentine Ant" that as a pest in cities this insect has no equal, invading as it does practically every part of ordinary houses, stores, etc., eating foods, disturbing the occupants, and in badly infested places rendering conditions almost intolerable; so that it is not uncommon to find empty, unrentable houses. In corn, cotton, and sugar cane fields the Argentine ant when present, is constantly attending the aphids and mealybugs, increasing the numbers of these species to an alarming degree, much to the detriment of the plant. In the orange groves of southern Louisiana the ant



Hooverizing Old Spice Can

A two-ounce spice can used as a container for poisoned syrup, showing the method of attachment to tree and the floating sponge.

is reported as the most serious of all insect problems.

In California its presence has been reported from different parts of the state, though attracting attention especially as a household pest in the San Francisco Bay region. Its importance as an orchard pest in the citrus growing regions of this state appears to have been overlooked until the writer conclusively demonstrated its very direct relation to mealybug control as the result of numerous ex-

periments as the most serious of all insect problems. These bags are attached to the trees as shown in Fig. 1. Tin cans have also been used as containers, the most satisfactory type being a two-ounce oblong spice can, as shown in Fig. 2. The ants gain entrance by passing through the enlarged nail hole or through an aperture made by pressing in the top of the tin before placing on the lid. The containers should be placed either on the trunk of the tree or on a branch close to the



trunk; they require examination from time to time and refilling when empty or when the syrup solidifies. Cans not water tight can be so rendered by dipping in molten paraffin.

The great success in ant eradication reported from the use of these methods in the Southeast likewise attended similar intelligent efforts in California during 1917. Heavy colonies of this pest throughout large orchards have frequently been reduced to insignificant numbers within one to three months, although a much longer time is required before eradication is accomplished. Effectiveness depends in large degree on the time of application as well as the freedom of the tree from scale, mealybug, etc. The ant when attracted by the honey-dew furnished by these insects does not feed freely on the poisoned syrup, so that this means of control has not always proved fully effective during periods of severe mealybug infestation, but fortunately this situation can be avoided by distribution of the syrup in the spring when the insect is present in small numbers. In fact, it appears that this ant poison is more effective in the spring and late autumn than in the summer. In view of this condition ant control should be started at the present time.

#### The Citrophilus Mealybug

An investigation of the common mealybug during 1914 to 1917, in which fumigation, spraying, and beneficial insects were thoroughly tried, demonstrated that orchard control of this species of mealybug is most economically and effectively accomplished through the proper utilization of beneficial insects; that there are already established in this state a large number of such mealybug enemies, of which four predatory species, (namely Sympherobius 2 spp., Cryptolaemus and Hyperaspis) are in themselves capable of effectively controlling the common mealybug; furthermore that the primary requirement in natural control of this pest is the timely liberation of large quantities of these predators, if not already present in adequate numbers.

It was noted during our mealybug studies that most of the severe infestations in Los Angeles County are in districts overrun with the Argentine ant, and close observation developed that these ants so persistently interfere with the activities of the common predatory insects that their control value is greatly reduced. This is well shown by the fact that every experiment conducted in mealybug-infested orchards covering a period of one and a half years resulted in commercial control of the mealybug rapidly taking place on the ant-free trees, even in those cases where no insecticide treatment at all was applied; on the other hand, severe infestations on the ant-infested trees continued through the active season, and light infestations increased in severity.

In response to a petition from the fruit exchanges and associations of the Upland-Ontario-Cucamonga district, the writer in the summer of 1917 took up the control of the citrophilus mealybug, and A. D. Borden was stationed at Upland to handle this problem. The three severe infestations of this pest, namely at Upland, Riverside and Pasadena, are in Argentine ant infested territory. Therefore, in view of our experience in handling the common mealybug, first efforts were directed toward the control of this ant. The success attending these efforts on a demonstration grove was so convincing to orchardists that poison syrup was distributed through approximately 200 acres of the ant infested district. It is hoped that the greater part of the affected district will be under control before the end of the present season.

The citrophilus mealybug does not appear to be attacked as freely by natural enemies as is the common mealybug; at any rate these beneficial insects are not present in equal variety and numbers. However, laboratory experiments during 1917 showed that the four important predators of the common mealybug previously mentioned will feed upon the Upland variety. A large number of these insects have been in storage during the winter at the Alhambra laboratory and will be distributed in the demonstration orchard at Upland this spring. It is hoped that the

method of control, so effective against the common mealybug, will prove equally successful for the citrophilus species. One demonstration grove already shows slight, though by no means conclusive, evidence in this direction.

#### SPRAYING CHART

The agricultural experiment station of the University of California at Berkeley is issuing Circular 195, "Revised Compatibility Chart of Insecticides and Fungicides" by Professor Gray. The chart itself, which appears in four page circular, is extremely valuable to any one engaged in spraying, especially where it is used for insecticides and fungicides. It shows wherein combinations may be made and labor of one spraying saved. It also shows wherein a combination may not be made because of antagonism of chemicals in one mixture for those of another. For instance, lead arsenate may not be combined with soap-oil emulsion, but the same arsenate combined with any tobacco preparation or mixture of sulphur has full power.

#### HEMP GROWING

The possibilities of hemp growing in the Imperial Valley are arousing much interest. Here is some definite information in a letter from the agricultural agent of Imperial County to University Extension Director Taylor of Arizona:

"I have on hand your letter asking about the hemp in Imperial Valley. The Timken Ranch Company grew a quantity this season. There are about 160 acres planted in the valley with good success. A fair crop is five tons to the acre of the dry straw for which the grower received \$17.50 per ton. It takes 100 days to produce the crop at a cost of \$25 to the acre. This leaves a profit of about \$62.50 in 100 days. The ground is left in fine condition and it is possible to get off a good crop of corn after the hemp has been removed. A greatly increased acreage is expected the coming season."

It is now officially reported that Holland's 1917 sugar crop will be sufficient not only for domestic consumption but will leave a surplus for export. Reports of scarcity were due to the fact that sugar beets were being fed to cattle owing to lack of other fodder; but it is now authoritatively announced that a considerable part of the 1917 crop may be fed to cattle, still leaving an abundance for the production of sufficient sugar. This is in spite of the fact that sugar-beet area in Holland was 20 per cent less in 1917 than in average recent preceding years, the excellent crop offsetting that shortage.

## TEAGUE QUALITY CITRUS TREES

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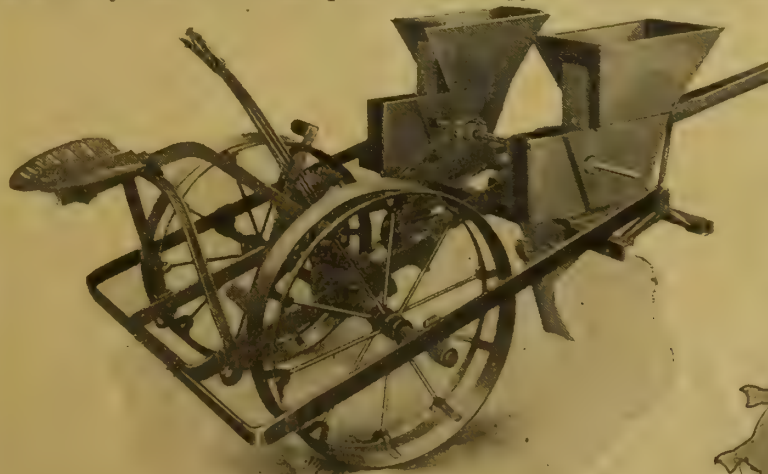
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Make sure of a good stand of beans on your valuable bean land, by using the thoroughly dependable "California Special" Bean Planter.

Each planter is equipped with a set of rotary droppers adjustable to plant any variety of beans from small white to large limas. This is the best and most dependable dropping device known for planting beans. The dropper rotates without friction through the hopper cupping the seed as delicately as though each were selected by hand. The seed passes from dropper to boot which runs at any depth set. Shoe runners will be



This planter will save the price of itself in not injuring the seed bean during the process of planting.

Ventura Manufacturing & Implement Co.  
Ventura, Cal.

furnished where desired. Each boot is hinged with wooden peg. Open wheels run back of boot. These press inward and downward around the seed but do not pack the ground directly on top. The California Special is the last word in bean planting machinery. The frame is especially strong—is made low for orchard work if desired and is so evenly balanced and adjusted as to make it easy to handle. Made in 2, 4, 6 and 8 row sizes.

Rotary dropping device insures uniform planting. It cannot injure any of the seed.

Catalogue and circulars sent on request. We make a complete line of bean and beet tools.





Established 1877

Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

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Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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**Saturday, March 30, 1918****OUR ADVERTISERS RELIABLE**

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

It is probably true that the response to the appeal for more food has not been so quick by dairymen as by many food producers, or, rather, if it has been as swift, it has been slower in apparent results. It takes time to make a dairy; more, the feed situation has been so complicated that increase of dairy output has been almost an impossibility. But the dairymen are turning every direction for relief, and the silo offers that relief most satisfactorily. The cover illustration presents a typical dairy scene, alfalfa in the foreground, corn for silage on the left, the dairy cows and the silo in the background. This is the time of the year to plan and to build the silo and soon will be time to plant the corn or other silage crop. This cover illustration should give inspiration to many dairymen.

**FEED YOURSELF**

It is not asking much; still it will be a wonderful help to the nation if each of us will produce enough for our own food.

**KEEP YOUR BONDS**

Some merchants are unwisely advertising to accept liberty bonds in return for merchandise. This is now being discouraged by the treasury department; it should be discouraged by true patriotism the country over.

**LAND SETTLEMENT**

Still the requests come for information as to the land settlement proposition. We ask all subscribers who are interested in this to write direct to Dr. Elwood Mead, University of California, at Berkeley for information regarding this land settlement.

**GIVE US STEEL**

A California implement manufacturer finds himself unable to guarantee delivery of a supply of implements which would mean thousands of tons additional sugar this year, if delivery could be made, but with the immense demand for steel for submarine chasers, and carriers of military equipment and commerce, producers "way out on the Pacific Coast," stand poor show of getting the steel for implements, but the country must have sugar and we must have more implements.

**EASTER**

The world is approaching Easter day of 1918 in the presence of its most awful disaster. The slaughter of thousands — of hundreds of thousands — and the destruction of those things which the earth values highest and even the endangering of our very liberties.

We cannot write of this which should be glad Easter time, but God grant that another 12 months may bring Christian peoples together and especially give strength to the arm of America that we may then say in truth "Christ is Risen."

**FILED YOUR RETURN?**

For six months the Cultivator has urged attention to the provisions of the income tax and to the necessity for filing a return by every unmarried person whose income in \$1000 or more and by every married person whose income is \$2000 or more. This should have been done prior to March 1, but extension of time was made until April 1. The return must be in the hands of the district collector before the close of the office on the evening of Monday, April 1; postmark of April 1 will not answer.

Meantime keep books for next year.

**FUEL**

It is probable that Cultivator readers are but little concerned with the efforts of the fuel administration to secure a saving of next year's coal. In Eastern centers, however, every effort is being made to induce the placing of coal orders for next winter's consumption before the first of July. While Californians burn but little coal, it is a goodtime to store up that which will be needed, and, better, to consider fuel production for ourselves. There are few farms in California which do not offer some opportunity for at least a small woodlot, and with the quick fuel producing quality of eucalyptus we are offered an opportunity to add to our comfort and to the economies which we may practice for our nation.

**PRIZE WINNERS**

Note those three \$100 checks on third page of this issue. We presume each one of them cost the winner far more than \$100 worth of effort, but they are not the only reward. Also note the photographs of two of the winners, J. W. Coppini of Ferndale and Iver Iversen of Arcata. We regret very much that we did not have a photograph of W. Terkelsen of Ferndale, but we hope later to have from Mr. Terkelsen himself, as well as from the other two prize winners, the story of how these three men got together dairies and then fed so as to produce from 400 to 600 pounds of butter per year from each cow. The state dairy cow competition has taught some great lessons to dairy-

men. The Cultivator hopes to be able to pass on some of them in a way which will increase our profits and our patriotism.

**PUT OUT THE FIRE**

Forest fires which burned over almost a million acres of national forests in 1917 caused a loss of a million and a quarter, which is but a trifle these days of billions, but, leaving dollars out of consideration and taking the food viewpoint, there is call for greater care the coming year than ever before. Put out the fires and put out anything or anyone which or who by carelessness or otherwise encourages loss by fire.

**SELLING BY WEIGHT**

The markets of the East have finally come to see the value of and to adopt one of California's marketing plans. All over the East potatoes by the bushel, half bushel and peck has been the rule. We believe the department of agriculture still reports production and exports in bushels, and in other ways maintains the bushel unit, but in the markets "per cental" is now quoted. It would be well if the department would make its reports on the same basis.

**PLANT YOUR GARDEN**

With all the moments filled, we are liable to forget this is the planting time for our gardens. Last year proved a good lesson for many of us in that many a help to a quick meal was secured from our own garden. Californians have been prone to let the Chinaman and Jap gardener have the benefit of our trade, and these war times have brought us to a realization of the garden possibilities.

California home gardeners last year raised more than \$5,000,000 worth of food stuffs. Notwithstanding our failures, we do accomplish much in the aggregate. Let it be doubled this year.

**BUY A BOND**

Next Saturday, April 6, is the first anniversary of America's entrance into the world war. It is to be celebrated by the inauguration of the third liberty loan drive. The amount announced is \$3,000,000,000. And the American people are standing ready to support the government to the limit, and the limit with Americans will not be reached until many more billions have been asked for. The banks have been conducting a campaign for some time of subscribing for treasury certificates which will bring the money into the vaults and make it immediately available once the campaign is started. The bonds will be of the same denominations as the last offering, and it is desired that a bond shall be placed in every home in America. If, however, 50 per cent of Americans should buy each one \$100 bond, it will raise the money needed.

**LEGAL ADVICE**

One of the most popular departments of the Cultivator is the legal in which matters of interest to agriculturists from the legal standpoint are discussed, but the scope of this department is often misunderstood by our subscribers, for nearly every week some one calls at the office expecting to find a free consultation department. Mr. Stanton, who answers the questions for the Cultivator, is a regular practicing attorney in Los Angeles and is rendering valuable service, and the Cultivator would be glad to employ him for consultation with subscribers, but this is impossible. But we are glad to employ him to answer these questions of general interest through the columns of the paper. Anyone desiring personal or immediate service should take the matter up with Mr. Stanton.

**This Week's War News**

The third liberty loan drive begins Saturday, April 6; \$3,000,000,000.

An American banker on his way from Russia to Sweden was captured and is now held prisoner by the Germans.

Submarine effectiveness is still decreasing, and as soon as shipping can be increased it is anticipated that American troops will be sent forward more rapidly.

A fleet of German war vessels which was bombarding the French coast was attacked by British and French fleets and three of the German vessels were sunk.

The Wisconsin primaries gave Americans a decided shock. The disloyalists were defeated but showed such wonderful strength that the whole nation is asking that Wisconsin redeem herself.

The situation in Palestine remains much the same other than that General Allenby has made advances toward the East and now has a considerable number of troops on the east side of the Jordan.

Anarchy in Russia continues, with German troops overrunning much of the country. Even Moscow is threatened and there are no officered troops to prevent the Germans entering if they desire. No definite action is yet taken by China or Japan.

The Italian front has shown no activity other than by airplane explorers, although it is known that German reinforcements have been sent to the line. The food situation in Italy is becoming more acute every day and America is appealed to to deliver food so far as possible.

America and the Allies have taken possession of all merchant vessels of Holland which were in their harbors, and within a few days of seizure they were on the ocean carrying supplies to our armies. The seizure was made after this country had made every effort to arrange for purchase on terms satisfactory to Holland. International law and precedent in former wars justifies America's action.

One surprise of the war is the long range "bombardment" of Paris. Ten inch shells have been dropped within the city limits, some have estimated from a distance of 74 miles. Such long range gunfire is supposed to be impossible; however, and it is generally thought that the activities of German airplanes or of some concealed gun behind the French lines accounts for this bombardment.

Spy activities continue in all portions of the country, and so far as announced the only punishment meted out has been internment. However, in Oklahoma and some other sections more direct action has been taken. In one case a German sympathizer, reading account of the death of American soldiers in France, remarked: "Served them right; I wished every damned one of them were killed." The sheriff of the county, standing near, pulled his gun, and that wish will never be repeated by the same German. The entire country is appealing for more vigorous action in this matter of harboring traitors.

The blow has been struck on the west front in the apparent effort to split the line at the junction of English and French troops. The Allies have been forced to yield under masses of Teutonic troops known to number 600,000. Losses exceed any preceding battle. The line of the Allies has given away until a dozen, or possibly a score of miles, have been yielded to the enemy. As we go to press the line is being held and the Allies express confidence of being in a stronger position than at the beginning of the battle. Amongst the French towns captured by the Germans are Combes, Peronne, Ham, Chauny, and Noyon. The number of men lost on both sides is estimated to be between 300,000 and 400,000. The American troops have not been The portion of the line occupied by the American troops has not borne the brunt of the attack, but other reserve troops have been thrown in to support British and French forces. Several companies of railway engineers have also been engaged on the battle line, and reports are, "The Americans have fought like tigers and have acquitted themselves with their flag." Military experts anticipate the early beginning of the Allies back drive.



# Agricultural News Notes of the Pacific Coast

## Northern California

Sheep shearing is on in Sutter County.

J. E. Stiles has been appointed farm adviser of Sutter County.

The upper Sacramento Valley is shipping out largely of its stored barley.

Live stock men of Humboldt County report this the finest season for pasture.

A portable alfalfa meal mill is ready for operation in the alfalfa section of Yolo County.

Contractors are endeavoring to secure Sonoma County 1918 prunes at 7½ cent base.

Articles of incorporation of the Western Rice Company have been filed at Colusa.

Humboldt County milkers have struck for \$85 and board; some even demanding \$90.

Various Sacramento Valley counties are definitely committed to bulk handling of grain.

The first work of the Butte County farm bureau is a campaign for greater pork production.

Yuba County now has fully organized farm bureau. Geo. Carr of Hamonton is president.

Stock owners of Humboldt County are lending hearty encouragement to boys agricultural clubs.

Woodland, Yolo County, is made a center for first inspection and purchase of horses for the army.

Vegetable shippers from California are not pleased at prices, which are much lower than those of a few weeks ago.

The California Honey Producers' Cooperative Exchange is now organized and has headquarters at San Francisco.

Farm center meetings in Glenn County: Ord, April 2; Bayliss, 5; Codora, 9; Larkin, 12; Orland, 16; Jacinto, 19.

Cling peach growers of Sutter County are discussing cooperative organization which will handle canning stock for members.

A ruling has been made which allows farmers nine cents per bushel additional on wheat where it is found necessary to sack it.

Some of Sutter County's richer tule lands which have been assessed heretofore at \$8.00 to \$12 per acre will be raised this year to \$30.

Many of the gold dredgers of Butte County will be closed down because of high priced labor. The dredges produced during 1917 something over \$2,000,000 worth of gold.

Sutter County anticipates it will need an army of 10,000 men to harvest its fruit crops. The Sutter County Growers' Association has been organized to look after the interests of the fruit men.

The Anderson-Cottonwood irrigation district of Shasta County has completed an immense syphon at Churn Creek, which in turn passes the water over the Sacramento River in flume swung under the bridge.

Prof. Bioletti has recommended to farm centers of Sonoma County the planting of the Corinth grape. The fruit of this vine is generally known in the trade as Zante currant. The country now imports 45,000,000 pounds of this fruit.

## Central California

Tulare County is picking Valencias.

The farm bureau of Kerman, Fresno County, will meet on April 9.

Stanislaus County Grange is building a bean cleaning plant at Ceres.

A beekeepers' conference is to be held in Bakersfield, Monday, April 1.

The National Farm Loan Association at Madera recently met for annual election.

Hollister contemplates the establishment of an immense canning and packing plant.

The state association of county horticultural commissioners recently met at Fresno.

Recent rains gave impetus to the planting of deciduous trees in all sections of the valley.

Deciduous fruit growers of Madera County are contemplating joining the California Fruit Exchange.

Peach growers are to build a cannery at Turlock. It will be under the management of the California Peach Growers, Inc.

It is now definitely settled that farmers are to be allowed nine cents per bushel for sacked grain, in excess of the base price established.

The Grange Company at Modesto will handle grain in bags as it is maintained the government will allow nine cents per bushel on grains which are sacked.

The California Associated Raisin Company will commence at once the first unit of nine great buildings to be constructed on a 20 acre tract near Fresno.

The Tulare County Duroc-Jersey Breeders' Association recently met in annual meeting and elected Allen Thompson, president and R. C. Sturgeon, secretary.

Beekeepers of Monterey and Santa Cruz Counties are organized for cooperative marketing. M. G. Lee of Pacific Grove is president; H. J. Henneken, Seaside, is secretary.

Farmers generally are pleased with the ruling which prevents unrestricted manufacture of bran and other by-products of wheat into proprietary foods, because this will save much live stock feed.

Stanislaus County farmers are suggesting that the Farmers Non-Partisan League be made a national organization of farmers which will act to secure justice, both politically and economically, for the farming interests.

Fresno fruit growers are planning a series of model camps for labor to be used in harvesting the coming season's fruits and crops. More than 1800 acres of long staple cotton will be planted in the Corcoran, Kings County, district.

The Prune and Apricot Growers' Association has from Hoover suggestion that the new season's pack of apricots and prunes should not have prices named until after conference with him and until he has copies of form for contract to be offered to growers.

Stanislaus County has a free employment bureau in every town. Men seeking employment register, and all registrations are forwarded to the Modesto office. Under this system 1369 men were placed in positions last year, and it is anticipated this number and the efficiency of the organization will be greater this year.

## Southern California

Imperial Valley will plant about 5000 acres of Pima cotton.

Public schools in Orange have been closed because of measles.

The Oxnard Courier reports the sugar beet outlook as hopeful.

A. R. Sprague has been appointed farm adviser for Orange County.

The Riverside citrus experiment station was dedicated this week.

Serious damage was done to Ventura County roads by the recent storms.

Santa Barbara millionaires are reducing the cost of living by serving shark steak.

Palo Verde Valley bee keepers held a meeting at Blythe, Riverside County, last week.

Orange County Exchange members have already received around five cents per pound for Navels.

The Golden West Citrus Association of Tustin is now shipping lemons from its new packing house.

The city of Pomona receives about \$1200 annually from the sale of walnuts grown on its sewer farm.

Imperial is becoming more and more a shipper of asparagus. Car shipments have already begun.

Ventura and San Luis Obispo Counties are making a shipment of 5,500,000 pounds of beans to France.

The work on the building of the great aviation school on the mesa near Riverside is being pushed.

Rhodes grass grown in Niland, Imperial County, is declared to be a complete success for that section.

The Hemet and San Jacinto Growers' Association has sold \$325,000 worth of canned fruit during the past season.

The first auction of fat hogs under the Imperial County farm bureau direction will be held at Brawley April 18.

San Fernando, Los Angeles County, high school expects to manage a tractor school which will be held the entire first week of April.

The Limoneira Orchard of Santa Paula, Ventura County, will plant extensively to beans as an intercrop in its lemon orchards.

A branch of the California Honey Producers' Cooperative Exchange has been located in Orange County. There are about 50 apiarists in the county.

The chamber of commerce of Redlands, San Bernardino County, is encouraging a movement for a by-products factory which will save citrus wastes.

County Horticultural Commissioner Morris of Orange County contemplates installing small fumigation outfit to handle small tracts within incorporated cities.

The final judging of the pigs in the Imperial County pig contest and awards will be made at Brawley, April 20. Following the judging a public auction will be held.

Bills have been introduced into congress authorizing the secretary of the interior to contract with the Imperial irrigation district to deliver water from the Colorado River.

The Hemet Canning Company is rebuilding and adding a two story concrete building to its already large plant. So far as can be determined this early there will be a big crop of apricots.

## The Coast and General

Louisiana is shipping strawberries into northern markets in carlots.

Idaho expects to erect several grain elevators before next season's harvest.

Sokulk, Whitman County, Washington, is building a 50,000 bushel elevator.

Canada has exempted tractors and pure bred cattle from duties until February, 1919.

The federal government is appealing to all producers and holders of wheat to "loosen up."

The Okanogan County, Washington, Live Stock Association meets in annual session, April 4, 5.

Seattle reports apple markets especially strong. The bulk of the fruit is still in the hands of the producers.

Farmers in Yakima, Washington, have been investigating labor conditions and anticipate plenty of help for spring work.

The crop of olives in Greece in 1917 is reported as extremely small. Price of oil has been increased from \$1.09 to \$1.32 per gallon.

Northwestern potato growers report sales decidedly slow. Growers are holding for one dollar with buyers unwilling to pay.

Farmers of Oregon and Washington have purchased large numbers of tractors, and spring plowing has begun in some sections.

The division of animal industry, Hawaiian Islands, recently made a test of 450 animals for tuberculosis and all but 53 passed test. Owners are compensated for condemned animals.

Nearly all counties of Arizona have completed the formation of farm bureaus and all are committed to putting through the big food program of 1918.

Department of agriculture reports California as having 468,000 horses, worth an average around \$98. The average for 1917 was \$97; 1916, \$96; 1915, \$100; 1914, \$100.

A series of grain elevators is to be erected in Columbia County, Washington. Each will have a capacity of about 75,000 bushels and will cost about \$15,000.

The federal government's seeds stock committee operating in Washington is working to secure large supply of Marquis and Kubanta durum spring wheat for planting in the Northwest.

A starch factory has been established and is in operation at Beaverton, Oregon. It will convert tons of cull potatoes into more valuable food products including starch, potato flour and potato farina.

The area of sowing of winter wheat was the greatest last fall in the country's history, but it is feared that the actual production may be materially reduced by severe winter conditions. An attempt is being made to remedy this by securing as great a planting of spring wheat as possible.

English tractors used in farming operations have increased their efficiency so that now they are averaging nine acres per week whereas the average was formerly 7.2 per week. Presumably these tractors are working on extremely small fields. There are 1450 government owned tractors used in farming in England.



## A Valuable Tree

Written for California Cultivator by Ernest Braunton



HE dual purpose plant, whether tree, bush, or vine, has always held a peculiar fascination for me. Why plant for a single purpose when we may plant for two and get the fullest value in each line. The avocado will serve as an illustration. The tree is fully as beautiful as a magnolia or ficus (rubber tree) and as fruitful as an orange or an apricot.

But I wish to sing the praises of another and lesser known, one that has not yet been "boomed," but which will one no distant day be universally grown throughout a large portion of California. It is the carob or St. John's bread, *Ceratonia siliqua*. I was in a seed store in Los Angeles a few days ago when a prominent horticulturist entered and said: "I want a dozen budded carob trees; if you cannot get them for me now, bud some or get someone to bud them for you." That is but a small example of orders that will be numerous in years to come.

The best seedling trees now grown in California are not good enough, though we have some that are well worth budding from until we shall have secured better ones. Locally grown pods are not lacking in food

value, analyzing in sugar content to compare favorably with any found elsewhere. We should secure from abroad trees, or buds from trees, that produce heavier crops of larger pods. No tree that I have seen grows a crop that will favorably compare with those of other lands. The best pods from the best local croppers bear pods five or six inches long, but trees are cultivated in some countries that bear an equal or greater number of pods twice as long and others bear many times the number of pods equally as large as the largest we grow.

From a sexual point of view these trees are somewhat puzzling, for they may be either monoecious, dioecious or hermaphrodite. The first term means both sexes of blossoms are on one tree; the second that female blossoms only occur on one tree and male blossoms only occur on others; while hermaphrodite or perfect flowers contain organs of both sexes. C. W. Beers, of Santa Barbara, who has given the subject much study, states there are quite a number of trees in California bearing perfect blossoms, but it is thought by far the greater number bear male and female blossoms on the same tree. I believe the best crops will eventually be borne by

trees that are female only, for in nearly all trees there are greatest and best results from cross-pollination. This is true even in apple and other fruit trees where all blossoms are perfect. In many kinds of trees some are self-sterile, even where all blossoms are perfect, and no fruit will be borne except flowers be pollinated from other trees. Chestnuts are common examples of this class.

Trees have been known that in favorable years, when of large size, bore a crop of one ton of pods of high value as stock food, but such crops are unusual. If we could have mature trees in California producing one-fourth that amount, they would prove a paying investment. As an ornamental the tree is valuable for all purposes for which trees are planted. For all-the-year shade and street planting it has few superiors. Carobs will pass through winters of light frosts only without being in any wise injured, and large trees will successfully pass through severe frosts with no material damage. They are wonderfully drought-resistant, require little care of any kind and are not seriously troubled by insect pests or diseases. I predict that in a few years they will be freely planted for the crops of pods, which rank very high as a stock food. In the meantime let us plant them as mere ornaments, but choose the best croppers when so doing, as they cost no more, need no more care and require no greater

space than those of little economic value.

### Plant Red Sunflowers

Much enjoyment may be experienced in watching the unfolding petals of the so-called red sunflowers, for hardly any two of them are of the same shade or color. The flowers do not differ from the more common variety except in color and size. They are not so large, averaging, in well grown plants, about six inches in diameter. But in color they are curiosities. Some are solidly yellow, others as purely red, or even maroon. Many are red with yellow tips on the petals, and other combinations of these two colors are various and frequent. They prove very interesting to both young and old and require no greater care than the large sort so common yet so gloriously sunny and open-faced, so cheering to look upon; for they actually appear to me as possessing pleasant dispositions.

### Range of Taste

It is peculiar what likes and dislikes we have in flowers. Nearly everyone has favorites and also those they do not love. In the latter class I place the zinnias. I cannot say I dislike them but they hold no attraction for me. Certainly no coarser flower ever grew, for a wild sunflower is dainty and graceful in comparison. They are stiff and bold, ungraceful and unyielding, as though upon stems of steel, and when the blossoms mature they are of the texture or consistency of cork or much like a stained and decaying pine cone. Some few are of very good color, but even this virtue insufficiently cloaks their extreme coarseness and woody texture. You may have them if you wish, but they are none of mine. I never grew one nor do I intend doing so, for in the same soil, under like conditions and with less care, I could grow glorious petunias.

### Divide Perennials

Our gardening season is late this year in all parts of the state. The perennials should all have started to grow before this. But I notice that in cool or shaded portions of the garden no growth has been made by herbaceous perennials. These may be divided now without danger to the coming crop of flowers. Shasta daisies have for years been in bloom in my garden in March, lasting in full bloom throughout July. This spring the growth is just starting. Such plants, torn apart, may be very heavily multiplied and thereby be made to flower more heavily and with larger flowers, for they respond quickly. Sweet Williams, phlox, and a long list could be named that should undergo like treatment. The soil should be enriched and also pulverized finely before replanting.

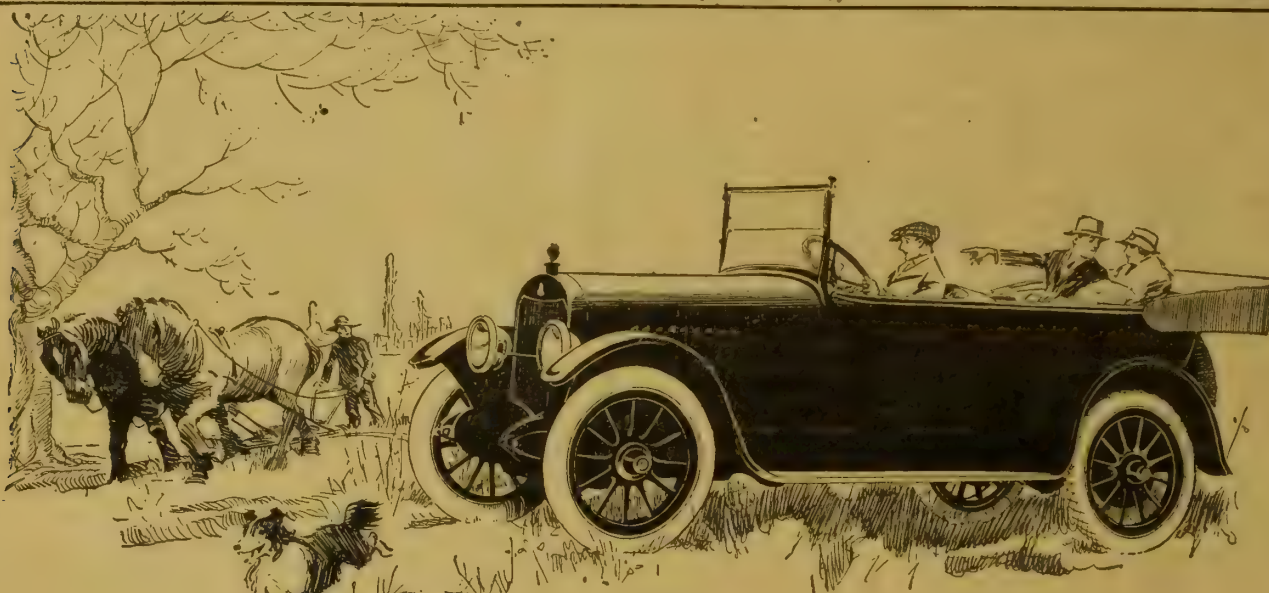
### Garden at Once

If you wish to garden at all this spring it should be done at once. The extremely dry winter rendered all plant life unusually dormant. The late warm rains, followed by warm weather, has not only started all planted growth at once but it has started with such vim and vigor that it cannot be stayed or interfered with. We must therefore count one week as two ordinary weeks of a normal year and not be caught napping. For present development will bring surprises even to natives and the older settlers. Be ye therefore prepared.

### WHAT'S THE USE?

The new hand had initiative, judgment and experience. He knew how to do things and took hold with zeal and intense interest, working steadily and conscientiously at his job until it was finished. But he did not consider himself superior to his boss and gave advice when asked, not before. When told to dig out the best fruit tree, he went and did it without a question as to the propriety of it. Then he cleaned off the tools neatly and hung them where they belonged in a dry place. After using the hose, he coiled it up and hung it away. His pay was raised and we decided to keep him. The next day a neighbor sniped him and installed him in a better house. There is no moral to this, it's immoral.—F. L. K.

A war saver is a life saver! Buy war savings stamps!



*"The Car of No Regrets"*

# KING "8"

The KNOWN car will have a "waiting list" this year

UTILITY is now the national buying reason. The public wants only cars of proved reliability built by established companies. With output reduced because of war manufacture there will be a shortage of preferred cars. If you expect to buy a KING this year, ORDER EARLY.

Following a successful but smaller "Eight" and a popular "Four", this sixty horse power King is beginning its third year of world-wide operation, with practically no mechanical change except a general refinement which continues at all times. The chassis has proved its power, stamina and economy in every climate the world over and its recent use for armored cars and war ambulances is final evidence of its reliability under all conditions.

The King "Foursome"—a body type originated by this Company, and now widely followed—was declared by many to be the handsomest at the New York Automobile Show. You are urged to examine and drive this remarkable car.

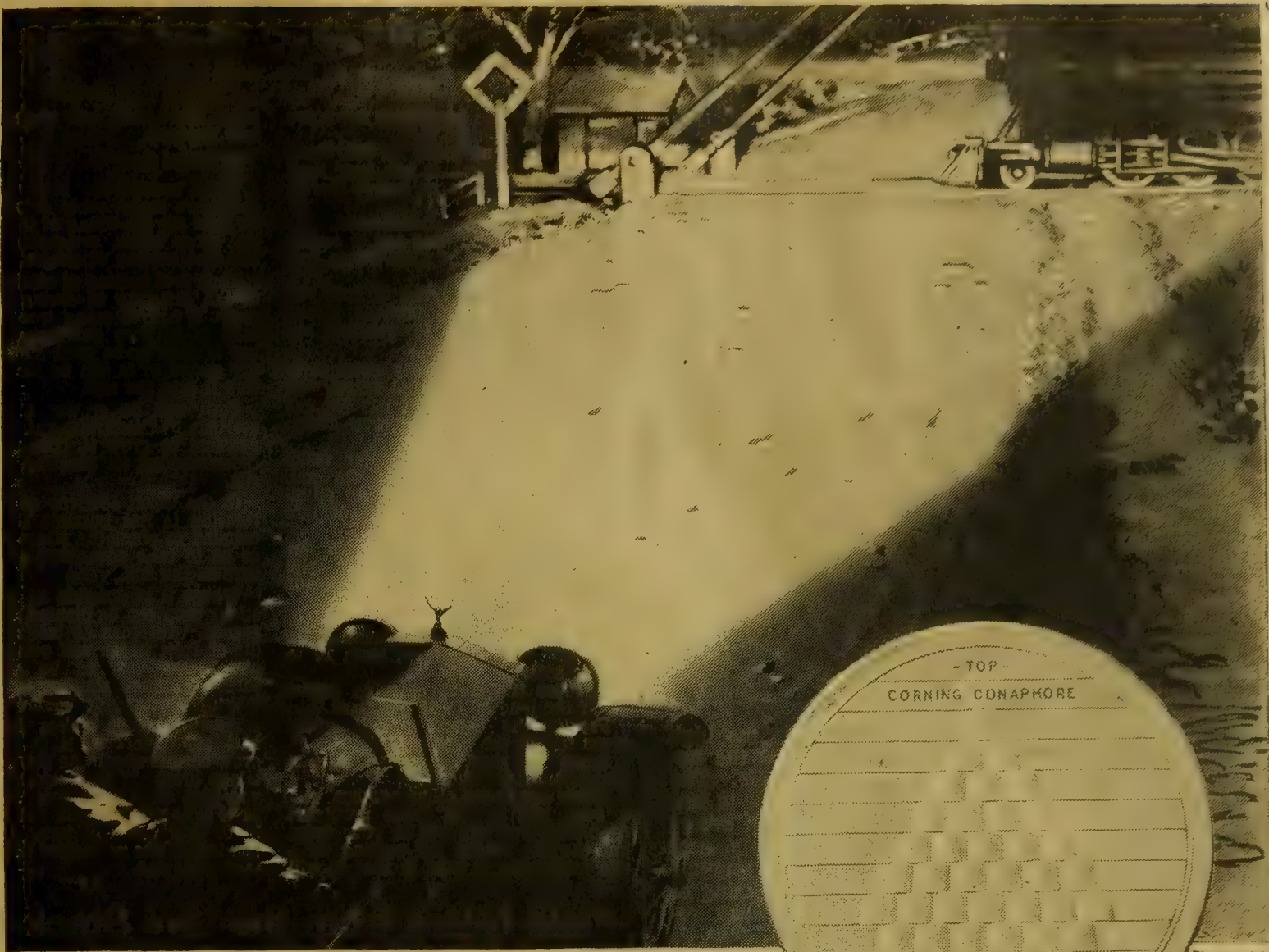
~ ~ ~

A 7-passenger Touring Car and a 7-passenger Sedan are two other popular King models.

Send for catalog and name of nearest dealer.

KING MOTOR CAR COMPANY, DETROIT





Many railroad crossing gates are not operated after 7 P.M. This photograph shows how the 500-foot range of the Conaphore protects your safety. It also shows how the Conaphore keeps the beam within legal limits, and so makes for the safety of others

**THE CONAPHORE**  
Smooth front surface. Easily cleaned. Does not clog with dust or mud

Photograph by L. A. Hiller

# Country roads demand long range

## Safety demands no glare

**N**OTICE how brightly the Conaphore beam lights up the railroad crossing and the engine in the photograph above. Then see how far beyond the crossing it illuminates the road.

The Conaphore does not diffuse and scatter the light in all directions. Neither does it dump the light directly in front of your car. Instead it shoots a long, broad beam ahead for 500 feet and more.

Notice, also, that where the Conaphore beam strikes the engine, the light is not more than 42 inches above the road. If a motorist were approaching from the other direction, the Conaphore rays could not dazzle or confuse him even to the slightest extent.

**Conaphore design patented**

Conaphores give you the range you need and to which your own safety entitles you. Yet they eliminate all glare and so make for the safety of others.

The Conaphore permits the bulb to

be focused for maximum range. Its efficiency is due to scientific design.

A series of patented corrugations on the inner surface of the Conaphore bends down the beam, while cylinders in the center fan ample light sidewise.

These corrugations also limit the height of the beam to 42 inches. There is no chance of blinding the other fellow, and you are within the requirements of any state or local headlight law.

**Pierces fog and dust**

The Conaphore is made of Noviol Glass patented—invented by Conaphore designers and used in no other headlight device. This unique yellow-tint glass causes the light to pierce fog and dust, without “back-glare.”

Blue and violet rays present in all white light are the chief cause of “back-glare,” because they are easily diffused by the fog or dust particles. Noviol Glass absorbs these blue and violet rays,

but projects all the rest of the light. Thus the Conaphore eliminates “back-glare” and gives you perfect road vision even when the night is thick. *The Noviol beam makes the easiest light for your eye to follow.*

Conaphores are also made in clear glass, but we strongly recommend the Noviol.

**Help fight the glare evil**

On dark country roads the glaring headlight danger is found at its worst. Put Conaphores on your car at once, and do your share to stamp out the glare evil. They give you the long range you want, yet take all glare out of your headlights.

Easy to install. Sizes made to fit all cars. If your dealer has not yet received his supply, write us and we will see that you are promptly supplied.

	Noviol Glass	Clear Glass
<b>Retail Price List (per pair)</b>		
5 to 6 7/8 inches inclusive.....	\$2.40	\$1.60
7 to 8 3/8 inches inclusive.....	3.50	2.50
8 5/8 to 10 inches inclusive.....	4.50	3.00
10 1/2 to 11 1/2 inches inclusive....	6.00	4.00

Prices 25 cents more per pair west of Rocky Mountains  
Sizes vary by steps of 1/8 inch above 6 1/2 inch size

**CONAPHORE SALES DIVISION**  
EDWARD A. CASSIDY CO., Mgrs.  
521 Foster Building - - New York City

**CORNING GLASS WORKS**

Manufactured by the World's Largest  
Makers of Technical Glass

**CONAPHORE**

Range 500 feet—No Glare—Pierces Fog and Dust





**GOING UP!**

**-the Price of Hay!**

**the answer!!**

**Plant**

**GERMAIN'S SELECTED ALFALFA SEED**

**Now!**

The only solution of "the high cost of hay" problem is the immediate planting of alfalfa. The whole State of California is facing a hay famine. Stock everywhere are literally starving. And hay prices are going up-up-up! Never before has the planting of alfalfa offered such golden rewards. Think of selling your alfalfa baled in carload lots at \$40 a ton and perhaps higher, next season! With an insufficient supply of oat and barley hay in sight, alfalfa is bound to command fabulous prices.

Help your State and increase your bank account by planting alfalfa. The best seed means the best crop. Germain's Selected Alfalfa Seed is the best that money can buy—and Germain's Hairy Peruvian Alfalfa Seed will give you an additional 2½ tons of hay to the acre.

Write for free seed catalog.

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Established 1871  
**Seed & Plant Co.**  
326-328-330  
SOUTH MAIN STREET  
LOS ANGELES - CAL.

## MAPLEWOODE RANCH

offers

two nice straight Holstein bull calves from 21 pound cows for immediate sale at reasonable prices. Also the four year old

### King Segis of Riverside

a fine straight individual weighing 2200 pounds, guaranteed right in every way. Can be bought at little more than butcher's prices. Address

**E. M. Holje, Owner, or  
Homer Hewins, Jr., Manager**

## Now if Ever is the Time to Cut Out Waste on Your Farm

By C. A. Crate

Ever since you have kept cows you have needed a silo.

But your need today is ten times more pressing than it has ever been before because it is no longer merely a personal need.

It has become a national need.

The world needs food and it counts upon the farmers of America to supply it.

Every additional ounce of food you can make your land produce means not only more profit for yourself but help for your country.

With the cost of every commodity increasing, with an actual scarcity of foodstuffs in prospect, it has become vitally necessary to conserve everything of value.

There is nothing of greater value today than the fertility of the soil, and a silo will enable you to eliminate the tremendous waste of soil fertility.

You cannot afford, either for the sake of your pocket or for the sake of your country, to use inefficient methods of farming.

A good silo will:

Reduce the cost of production on both beef and butter fat from 15 to 20 per cent.

Increase the stock carrying capacity of the land 40 to 50 per cent.

Provide the equal of rich green grass for all the year around.

Prove the best insurance against drouth and feed shortage.

There are many other reasons why a good silo is the most profitable equipment you can add to your farm, but the big reason for putting up a silo and doing it now is that it will

mean more milk and bigger crops at less expense.

### The Silage Crop

Corn makes the best silage, but there are many other crops that can be used for the filling of the silo, such as, oats, vetch, artichokes, peas or the first cutting of alfalfa.

That first cutting of alfalfa, because of the difficulty in curing it and because it has so many weeds and fox-tails in it, does not make good hay, but it does make good silage and every pound of it can be saved by putting it into the silo.

Corn can be grown in almost all sections of California, and where it is possible to grow it, that is the crop recommended for planting to fill your silo.

In the Coast sections and where irrigation is not possible it is recommended to plant the silage crop early so as to take advantage of the moisture in the soil.

Where it is possible to irrigate the silage crop can be planted later in the season, with corn as late as the middle of July, which will permit another and earlier crop to be grown and taken off before planting to corn, thus making the land do double duty.

As stated corn makes the best silage, and wherever it is possible to grow corn it should be planted for the silage crop. It is recommended that you plan right now your silage crop, as if it is delayed you are quite likely to find you will have no crop to put into a silo no matter how bad you may want one.

## Field Notes from the Live Stock Men

Tulare Holstein Farm, owned by W. J. Higdon, Tulare, is the scene of regular official testing in the registered Holstein herd these days, and Herdsman Harry L. Redd is bringing out good records with the splendid cows and heifers in his care. The junior two year old heifer, Madrigal Mooike 2nd, now holds two state records for milk in class, having made 573.6 pounds milk in seven days and 2347.2 pounds in 30 days. She is still in test and milked 84.4 pounds milk the day before this is written, which yielded 2.43 pounds fat. This performance ranks her as one of the heaviest milking junior two year olds the breed has yet produced. Thelma Hartog De Kol, who already had over 31 pounds butter to her credit in the first seven days of her test, has just milked 108.2 pounds in one day. Coloma Beauty Butter Maid, who made 19.45 pounds butter in seven days as a senior yearling, freshened at just a few days over three years and has made 24.69 pounds butter from 498.3 pounds milk in seven days and is still on test.

Bridgford Company, Knightsen, reports another 30 pound cow in their herd of registered Holsteins. This is Raphella De Kol Pontiac who has 33.82 pounds butter from 670.7 pounds milk in seven days. She is by a son of King of the Pontiacs. Mercedes Inka Hengerveld who made over 34.09 pounds butter from 696.8 pounds milk in seven days, has now finished her 30 day record with 140.57 pounds butter from 3043.3 pounds milk. The junior two year old, Bessie Veeman Korndyke, has now finished her 30 day record. In seven days she made 534.3 pounds milk and 25.008 pounds butter, and in 30 days 2148.9 pounds milk and 103.22 pounds butter. Both of her butter records are California records for a junior two year old. Another junior two year old, Rose De Kol Cande, made 24.35 pounds butter and 451.1 pounds milk in seven days. The splendid records made in this herd are bringing to light another good young "cow man," James Fasola, under whose care these records have been made.

H. H. Braly, manager of the Conejo Ranch, left during the past week for Omaha and vicinity to purchase more pedigreed Hampshire and Duroc-Jer-

sey swine stock to add to the herd at this big breeding farm, and also to make arrangements for exhibiting their hogs at the big Omaha Stock Show.

The horse barn at the university farm will be a center of interest on picnic day, April 20. Twenty thousand visitors are expected on that day, and preparations in all departments are being made for them. Salvador Headlight is one of the fine pure bred Shire mares to be seen on exhibition. She is bred to foal two days before picnic day, so that visitors will be able to see her colt. This mare is the daughter of Neuadd Hillside, the recent grand champion stallion at the state fair, and was owned by the late Jack London. The sire of the expected colt is Desford Banker, an imported Shire stallion, owned by Henry Wheatley of Napa.—W. J.

R. K. Walker of the firm of Peters, Lamson & Walker has just returned from a trip of inspection of the leading Duroc-Jersey herds of the Middle West. He says, "In the J. D. Waltmeyer herd which I have watched for a number of years I found the most consistent breeding policy of any herd I know of. Mr. Waltmeyer has followed a very farsighted policy of selection and line breeding, and as a result has the most uniform herd you could imagine. Using Golden Model sows, mostly daughters of Grand Model, he has mated them to the great Iowa grand champion, Great Wonder, and the produce is simply wonderful. I never saw such short strong pasterns and straight legs. While they get immense size without being shallow, they are great big high backed, deep chested sows with a wonderful spring of rib and extreme length. To mate with these sows Waltmeyer has selected the \$2500 boar, Giant Invincible, a boar that is on the road to weigh 1100 this fall, and also the splendid young boar, Oakdale Model, a son of Model Lady 3rd and Grand Model. In Waltmeyer's recent bred sow sale one sow sold for over a thousand dollars and was resold before she left the farm for \$1200. Mr. Walker selected several sows from this herd to bring to California, among them a real show gilt by Great Wonder and out of a Grand Model dam whose full brother recently sold for \$1000.



## DAIRY FARMERS CONFERENCE

Continued from Page 389

It was out of a sense of the importance of the official testing work to our breeders and to the dairy interests of the state that the California state dairy cow competition came into being. The plan of conducting such a competition gradually took form during the winter of 1915, and after conferences with breeders and others interested it was decided to have it commence November 1, 1916, and continue until the end of February this year.

Aside from the general considerations sketched in the preceding, there were various reasons that appealed to those interested in arranging for the conduct of the competition. One was to establish the educational value of production tests, which was naturally uppermost in our minds. Experience has shown that a dairyman on taking up testing work in his herd is led to give his cows better care and feed them better than formerly, and the resulting response in the way of production creates new interest in the herd and kindles enthusiasm. Enthusiasm, like measles and mumps, is catching, and a dairy farmer who engages in this work before long, as a rule, becomes a center for dissemination of advanced dairy knowledge, and his influence may gradually permeate the whole community. The more such centers we succeed in establishing, the more successful the campaign for better cows and better methods of feeding and care of the cows will be. It was expected that there would be a marked educational effect of the competition in this direction, and the results we believe have fully justified this expectation.

Another object in view was to establish, for the benefit of the dairy public, within the state and outside of it, the kind of production California cows are capable of. We have had many remarkable production records in the past by cows bred or developed in the state, but they have belonged to only a couple of breeders; mainly, in fact, to one breeder, whose services for the development of Holstein cattle of exceptional quality we are all glad to recognize. What we had in mind was to stimulate the interest in official testing so as to bring forward many other breeders and, incidentally, to establish the fact that it is not necessary for intending purchasers of high bred dairy stock to import such from the East.

Appreciating the important part that grade and common herds play in our dairy industry, we made it a special point to interest owners of such herds in the dairy cow competition, and to secure a large enrollment of their cows. Opinions may differ as to the degree of success that crowned our labors in this respect, but the participation of grade cows, at least, in the competition exceeded the expectation of those in charge of the competition and has been a source of great satisfaction to us.

There are several distinctive features connected with the competition the formal closing of which will occur tonight, besides the effort to interest owners of grade and common cows. First of all, the numerous prizes awarded for high records. Through the liberality of breeders and others interested in the advancement of California dairying a large sum of money was collected as a prize fund, and many special prizes were also donated. The value of all prizes offered in the competition amounts to over \$7500, of which about \$4000 was set apart for records made by grade cows. The total number of prizes offered is 94; of these the two series of monthly prizes numbering 28 were awarded during the progress of the competition. The balance were set apart for awards of production by individual cows, or for groups of three to ten cows in a herd for periods of ten months. It is with a feeling of gratitude that acknowledgment is here made of the generous assistance of the many contributors to the prize fund and of special prizes. But for this assistance there would have been much less interest in the competition, and doubtless a much smaller participation. The list of contributors of prizes is large and has been published in Circular 153 of the College of Agriculture, as well as in the press. Cash contributions varying from \$5 to \$500 were received from 26 different individuals or firms; in addition, four of our agricultural papers offered large

special cash prizes. Nine breeders offered pure-bred dairy bull calves, two milking-machine firms offered a two-unit outfit of their mechanical milkers, six separator firms gave one of their large size farm cream separators; a carload of dried beet pulp and two silver trophies were furthermore donated, and three of the dairy breed associations gave two valuable trophies each, for the highest production of a registered cow and of ten cows in a grade herd sired by a registered bull of their respective breeds. Finally, out of donations to the prize fund received in excess of the cash prizes offered, the college of agriculture provided two especially engraved gold medals to be awarded, one to the owner of the cow of his own breeding producing most butter fat in ten consecutive months; and the other, to the owner of five cows fulfilling the same requirements. These awards have all been made by this time, and will be announced presently.

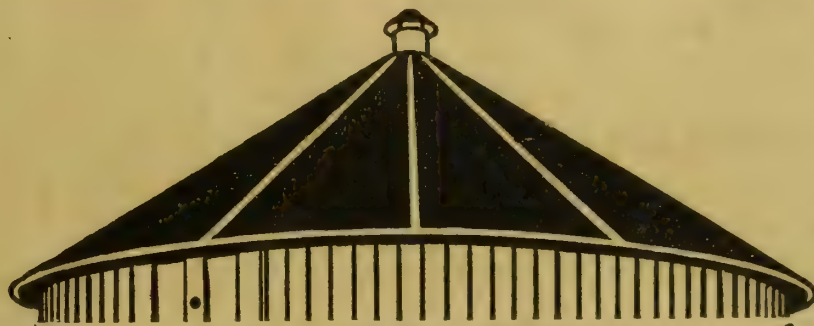
Another feature of the competition was the record period decided upon: the prizes in the competition, with exception of the two monthly series referred to, were made on the basis of the production during a period of ten months, and not for a year or for seven-day periods. The experience of most breeders in regard to full-year tests has not been encouraging. In order to reach a maximum production the breeding of the cows is as a rule delayed until late in the lactation in

order that they may produce a maximum amount of milk during the year. The late breeding of the cows, coupled with the intensive method of feeding generally adopted, makes it difficult to get them in calf again, and the regularity of the once-a-year breeding period is thus broken. There are exceptions to this rule close at home, in the case of the well known record cow, Tilly Alcartra, and others, but as a general proposition, tests conducted for a full year have serious drawbacks from the dairy farmer's point of view, who wants his cows to drop a calf every year. In order that it should not be necessary to spoil the cow to get the record and to set a good example, we decided on a ten-months record period for cows in the competition. Since the rules governing the competition were formulated, this period has been adopted by the H-F Association as a special prize division for A-R cows, and other breed associations have also shown their disapproval of keeping cows in milk a full year by placing those carrying a calf during the greater portion of the record year in a special class. Under the rules governing the competition, cows not safely bred within five months from last freshening were barred from competing for all prizes, except those awarded for monthly records and the trophies offered by the various breed associations. Some of the highest record cows, as a result, did not receive the recognition

to which they would otherwise have been entitled. On the other hand, the production of cows which produced good records under a regular system of breeding was duly recognized. What was aimed at in the competition was records obtained under as nearly normal every-day conditions as possible, not phenomenal ones secured at the sacrifice of the future usefulness of the cows; in this direction it is readily seen that the competition has had a very beneficial effect and has pointed the way that the large breed associations will follow more and more closely in the future.

As an encouragement for the small dairyman, or the owner of grade or common cows, the work of the cow testing associations was recognized by the award of three substantial prizes for the largest average production of herds of different sizes. These prizes were offered by the California Cultivator and were eagerly contested for by the owners of about a dozen herds. Records obtained in the associations for 12 consecutive months were considered in the award of these prizes, and only a general supervision over the production of the herds was exercised by the college. In the case of all other cows entered in the competition monthly tests of two days' duration, or of one day for grades, were conducted. The milk yield reported by the owner, checked up in various ways, was multiplied by

Continued on Page 404



## YOUR COWS What will you feed them this summer and next winter? GOOD JUICY MILK-PRODUCING SILAGE —OR DRY HAY?

Choose now. Plan to erect a good silo in time to ensile that first crop of alfalfa with its weeds and foxtail. Keep up the milk flow this summer by feeding it out as silage. Your silo will be empty in time to fill it with corn for feeding next winter.

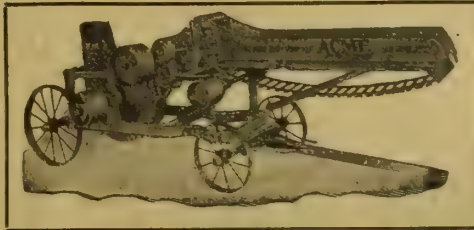
## IDEAL GREEN FEED SILOS LEAK PROOF PERMANENT

The Ideal will return to you as good ensilage every pound of green feed you put into it and do it every year.

Exclusive features of design and the fine quality of materials used make it a better silo, a more satisfactory silo to use and by far a more profitable investment than any other type.

Send for the Catalog, Prices, Terms, etc., telling us how many cows you want to feed.

ACME  
FEED  
CUTTER



AND  
SILO  
FILLER  
(7 Sizes)

A combination Silo Filler, Feed Cutter and Alfalfa Meal Machine. A machine that will cut your feeding costs 15 to 25 per cent. Send for the catalog and circulars on Feed Cutting and sample of alfalfa meal.

**De Laval Dairy Supply Co.**  
61 BEALE ST., SAN FRANCISCO, CAL.



# First Spring Sale of SHORTHORNS

Under Auspices of

**California Shorthorn Breeders Association**

will be held at

**Sales Pavilion, 478 Valencia Street, San Francisco**  
on

**Thursday, April 11th, 1918, at 1 P. M.**

Bulls for range man                      Bulls for the registered herds  
Cows and heifers of quality              All animals tuberculin tested

For Catalog Apply to

**CALIFORNIA SHORTHORN BREEDERS ASSOCIATION**

**320 Sharon Bldg.                      San Francisco, Cal.**  
**Fred Reppert, Auctioneer**

## Our Consignment at the Shorthorn Sale

consists of the following

**3 Bulls                      9 Heifers**

By Golden Goods Junior

All are strong, healthy animals—the choice of last year's breeding.  
Out of pure bred Scotch cows.  
Bulls are suitable to head any herd. Heifers are highest quality.

**THE ORMONDALE CO.** Redwood City  
California

This stock may be seen at our ranch any time before the sale. Ranch located in Portola Valley, seven miles from Redwood City.

## Pacheco Cattle Co.

will have three yearling bulls and three yearling heifers in the

**Great Shorthorn Sale on April 11**

All rich in the blood of their herd bull True Dale. True Dale won first for Get of Sire at Sacramento, 1916-1917 and at Portland International, 1917.

## Registered Shorthorns Hopland Stock Farm

Hopland, Cal.

Breeders of Grand Champion Cow, Sacramento, 1917  
Range and Herd Bulls of Choice Breeding

**San Francisco Office                      226 Southern Pacific Bldg.**

## JACK LONDON RANCH

Have entered three head in the sale. Roan Lady and bull calf, sired by Roselawn Choice, and the prize winning white heifer "London's Aloha," also sired by Roselawn Choice, Reserve Champion Bull.  
Beef Shorthorns, Registered Jersey Stock, Shire Horses and Duroc Jersey Hogs for sale.

**E. Shepard, Supt.,**

**Glen Ellen,**

**Cal.**

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

**Hauser Packing Co.**

**Los Angeles**

## Northern California Live Stock Notes

Written for California Cultivator By W. S. Guilford

**C**ROP conditions are better than at this time last year. A cool spring and a few more rains will insure a big grain crop. The color of all of the grain is good—a rich dark green—and it is making rapid growth now. The upper and lower moisture has met, and practically all of the rain we have had thus far has gone into the ground to be of benefit to the crops.

The value of fall plowing of orchards as a safe moisture conservation proposition has been demonstrated again this year.

Those who planted trees in dry ground, putting them in with water, are rejoicing for the rains have settled the soil and the trees are in the best of condition for growing weather. Every young orchard I know of will be intercropped this year. Alfalfa fields are being disked, and summer fallowing of grain land is in progress. Many rice fields are ready for seeding, and a large part of the acreage will be planted to the varieties that mature earliest.

There is much good roads agitation as a war measure for the more economical movement of crops. The Butte City District Club was organized last week to promote a road from Butte City to Oroville and if possible to unite with the west side highway.

There is a great deal of interest in the big importation of Duroc-Jersey hogs brought out recently by H. P. Slocum & Sons of Willows. One sow in this lot cost \$1000 in the East. There is a constant increase in the number of pure bred hogs in Glenn County of all breeds, but especially Berkshires and Durocs.

A good many are interested in the Hereford sale to be held at Davis and

the Shorthorn sale to be held at Col. W. H. Hord's sale barn in San Francisco April 10 and 11. A choice lot of cattle will be sold.

### I. W. W.'s and Farm Labor

A special farm labor committee of the state council of defense, which met in Sacramento last week, recommends:

Suppress the I. W. W. and all of their ilk. They have been too gently dealt with. The time is here for vigorous action.

Close all country saloons for the period of the war. They will never be reopened. They now decrease the efficiency of many laborers from 25 to 75 per cent.

Import Mexican labor.  
Mobilize high school boys and girls.  
Substitute women for men in indoor work.

Enforce vagrancy laws.  
Enforce laws forbidding trespass on railroad rights of way.

Replace male waiters with women, making the men do more productive work.

State Labor Commissioner John P. McLaughlin will open offices in all of the principal cities in the agricultural districts of the state. The committee consists of the following: Alden Anderson, Sacramento, chairman; John M. Perry, Stockton; P. E. Cogswell, El Monte; F. B. McKevitt, Sacramento; Willey B. Giffen, Fresno; P. J. Dreher, Long Beach; Roger G. Edwards, Saticoy; A. L. Wisker, Grass Valley; Benjamin F. Rush, Suisun; W. S. Guilford, Willows; C. O. Bullis, El Centro; A. R. Bates, Modesto; Albert Lindley, Stockton; A. L. Hebron, Salinas; W. D. Egelbert, Willows; C. C. Chapman, Fullerton.

## Elliott-Brant Rancho Guernseys

The registered Guernseys belonging to the Elliott-Brant Rancho at Owensmouth are making some very fine records, and the value and production of this herd of pure bred cattle is rapidly being built up by means of official yearly tests, which is the only true measure of a cow's ability.

Some 50 yearly tests have been or are being completed, and more cows, and particularly heifers, are being put on test every month as they freshen. These records are particularly interesting as they are made under the same care and treatment as is given all other milking cows of this herd, that is, they are not kept in box stalls and fed expensive feeds, etc., but are kept in corrals with the rest of the herd and are fed the same home grown feeds, alfalfa, corn silage, and ground barley, sometimes supplemented with dried beet pulp and bran.

As the rich Guernsey milk has proved to be very popular and is much in demand at advanced prices, a special feature is made of the milk production of this herd. The milk has proved of the best produced around Los Angeles, not only because of its richness in butter fat, which averages 5.5 per cent and its deep yellow color, but because it is cleanest, as is shown by the bacteria counts, made weekly, which are 25 times lower than

the law requires. Not only has this milk been awarded first place by the Los Angeles Health Board, but has also won the gold and silver medals at the last two California state fairs.

Since the demand for this milk exceeds the capacity of this herd, every drop available is used for the milk trade, consequently the milk from the test cows is used and they are washed and cleaned just as are the other cows before they are milked, which doubtless lessens their production. This fact and that regarding the feeding of home grown feeds, makes the official records, which will be reviewed below, more remarkable than they otherwise are.

Starting the first official tests in the latter part of 1914 with four heifers, the number has been steadily increased, and upwards of 25 will soon be on test. All these cows are milked three times per day, because it has been found that they will produce about 20 per cent to 25 per cent more milk and butter fat per year under the three time milking, and this quantity not only more than makes up for the extra feed and labor necessary, but increases the output, which is important in satisfying the milk trade.

The poorest record made by any cow in this herd was made by a heifer with first calf, who to meet the



Butternut Queen 30478

A great Guernsey owned by Elliott-Brant Rancho. Her official records are: four years, 10,884.5 pounds milk, 532 pounds fat, six years, 12,794.0 pounds milk, 665.7 pounds fat, eight years, 13,235.6 pounds milk, 689.63 pounds fat.



## Our Country Needs Livestock and Poultry



### Kreso Dip No. 1

for  
**FARM SANITATION**

will keep Livestock and Poultry healthy.

### KRESO DIP No. 1

EASY TO USE.  
EFFICIENT. ECONOMICAL.

**Kills Sheep Ticks, Lice and Mites;  
Helps Heal Cuts, Scratches,  
and Common Skin Diseases.**

**PREVENTS HOG CHOLERA.**

WRITE FOR FREE BOOKLETS ON  
POULTRY AND LIVESTOCK.

Animal Industry Department of  
**PARKE, DAVIS & CO.**  
DETROIT, MICH.

## TAGUS

**Holstein Friesians**

(Officially Tested)

We offer for quick sale a mature registered bull for \$250 to first applicant.

Prices on application for breeding stock. Visitors invited to visit Tagus, just four miles north of Tulare.

(Dairy Dept.)

**Pacific States Corp.**

Tulare, Cal.

H. C. MERRITT, Jr., Manager

### HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 51 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

**Frank Reed Sanders, Mesa, Ariz.**

### The Papec Pneumatic

Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.

For particulars write

**Santa Fe Lumber Co.**

16 California St. San Francisco

### Hereford Bulls for Sale

Eight months to two years old.

One or a Carload

**Platt Bros.**

Genese Idaho.

requirements of the Advanced Register for her age, had to make 275 pounds of butter fat. This heifer produced steadily, but not in large quantities, and ended the year with 338.29 pounds butter fat, 63 pounds in excess of her Advanced Register requirements. Other two year old heifers with first calf have produced much larger records.

Lois Valentine's Lad's Lassie, a two year old, with first calf made 10,550.1 pounds milk and 510.55 pounds butter fat. Little Beauty 2nd, with first calf made 10,480.13 pounds milk and 563.2 pounds butter fat, which was the largest record for the age and breed on the Pacific Coast. A remarkable thing about this record is that it was made out of three-quarters of an udder, one-quarter having been lost at calving time. On freshening again, as a four year old, Little Beauty 2nd was again put on test and still milking out of but three-quarters of an udder made 11,641.3 pounds milk and 636.43 pounds butter fat in one year. She will be fresh again inside of 30 days and will again be tested and is expected to make over 700 pounds butter fat. Besides the two official tests mentioned above, this cow was in the California State Dairy Competition and made some 530 odd pounds butter fat in 300 days.

Pet's Pansy of Pine Grove, as a three year old milked 1000 pounds per month for 12 months and this contained 536 pounds butter fat.

Nerio's Elsie Granger as a three and a half year old produced 10,357.8 pounds milk and 588.11 pounds butter fat, which was the largest record for the age and breed at that time.

Imp. Mahy's Nellie 2nd du Douit produced 14,421.4 pounds milk and 676.6 pounds butter fat in one year. This imported cow is a daughter of Iagoo 2nd whose A. R. daughters in this country have been producing sensational records.

Butternut Queen has recently completed four records, including one in the California State Dairy Competition. Her first official record was for 10,884.5 pounds milk and 532 pounds butter fat at four years of age. Her second official record was for 12,794 pounds milk and 665.72 pounds butter fat. Her third official record was for 13,235.6 pounds milk and 689.63 pounds butter fat. Her dairy competition record was for over 600 pounds butter fat in 300 days. This is a grand cow that produces 1000, 1200 and 1400 pounds of milk per month and has been a regular breeder.

Princess of Meadowbrook has recently completed her second A. R. record. Her first of 14,560.2 pounds milk and 722.24 pounds butter fat, was the largest for the breed in the West. Her last record was 14,089.3 pounds milk and 745.79 pounds butter fat.

Besides the above mentioned records there are many others which, while not so high are wonderfully substantial and exceedingly profitable from a milk standpoint. At the average wholesale price received for milk by Elliott-Brant Rancho one cow alone produced \$1310.40 worth of milk. The ten highest producers yielded milk that sold for a total of \$11,231.67 or an average of \$1123.16 each. The ten highest milk records average 12,479.7 pounds, while the ten highest butter fat records average 636.6 pounds, four of the records having been made by cows under mature age.

Besides a very profitable milk business this dairy enjoys a nice trade in young bull calves which are being put at the head of grade dairy herds throughout the state, as it has been found that the Guernsey crosses well with the mixed breeds, increasing the butter fat production and adding a rich yellow color to the milk.

### MUCH PORK — LITTLE FEED

A subscriber from Wasco writes: In the Cultivator of March 9 in "Money in Hogs," a Tulare County correspondent refers to putting 128 pounds on the hog with 275 pounds of corn in two months; a little over two pounds of grain to each pound of increase. To make two pounds of gain a day, or 128 pounds in two months, can be done. I have done that myself and am not an expert hog raiser, but to do it with 275 pounds of grain is an absolute misstatement or over enthusiasm. Ask any expert hog raiser and he will tell you it will take



Patented milk distributing device used in the New De Laval (sectional view)

Some big advantages that you can obtain only in the

## NEW DE LAVAL CREAM SEPARATOR

**GREATER CAPACITY:** Without increasing the size or weight of the new bowl, its capacity has been increased.

**CLOSER SKIMMING:** The improved bowl design, together with the patented milk distributor, gives greater skimming efficiency.

**EASIER TO WASH:** Simpler bowl construction and dies, caulked only on the upper side, make the bowl easier to wash.

**HAS SPEED-INDICATOR:** Every New De Laval is equipped with a Bell Speed-Indicator, the "Warning Signal" which insures full capacity, thorough separation, proper speed and uniform cream.

**EASIER TO TURN:** The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest and least tiring to the operator.

**WEARS LONGER:** Due to its much lower bowl speed, high grade of materials used, and careful and exacting workmanship, the De Laval outlasts and outwears other makes by far.

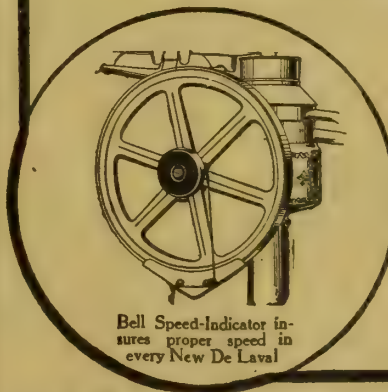
**ASSURED SERVICE:** In almost every locality there is a De Laval representative, able and ready to serve De Laval users.

If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval at once. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several instalments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

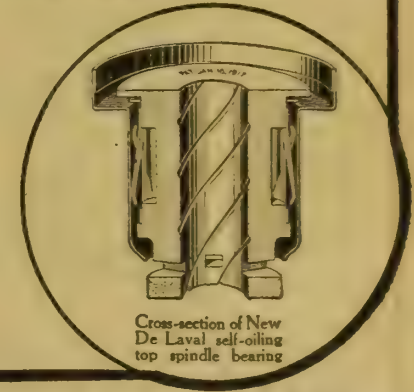
### DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.  
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

61 BEALE STREET, SAN FRANCISCO



Bell Speed-Indicator insures proper speed in every New De Laval



Cross-section of New De Laval self-oiling top spindle bearing

Innisfail Farm, Suisun, Cal.

## Dairy Shorthorns

Will Consign to **Shorthorn Sale, San Francisco, Cal.**

"Shasta," Bull, white, calved April 12, 1915. A splendid individual. Weight 1875 pounds. Best milk breeding. Winner at State and County Fairs.

## Paicines Ranch

Will Consign 4 Head Bulls to

## Shorthorn Sale



**FLESH COWS AFTER CALVING**  
Most valuable for bringing after-birth and also for treating barren cows and controlling abortion. B-K kills the infecting germs, heals the uterus, removes the slime and acid—no odor—no straining. More effective than lysol, Lugol's solution, carbolic and creosols—much safer. Send for our Bulletin 5 "Complete Abortion" and testimony from leading breeders. **Special Trial Offer**  
**General Laboratories, Madison, Wis.**  
2122 N. So. Dickinson St.



red in the production of the different cows. The records ranged from 4041 pounds of milk for the ten month period to 24,201 pounds, and from 136.1 pounds butter fat to 928.8 pounds. One cow produced over 900 pounds of butter fat during the ten months, about seven times as much as the average dairy cow in the state. Three cows produced between 800 and 900 pounds of butter fat, eight between 700 and 800, 20 between 600 and 700, 51 between 500 and 600, 93 between 400 and 500, 37 between 300 and 400, 24 between 200 and 300, and only five under 200. Twenty-one of the 29 competing herds had at least one cow, most of them had several, that produced over 500 pounds of butter fat during the record period. Five hundred pounds of butter fat will make somewhere around 580 pounds of commercial butter. With this selling at 60 cents a pound, the annual production of a 500 pound cow will be worth \$348, not counting the value of the calf and the skim milk. Is it strange that cows of this capacity for dairy production if sold at all can command a price of thousands of dollars, or that their offspring sells for sums written in four or five figures? Or is it strange that to owners of the ordinary run of cows, such a production is beyond comprehension, and that he is rather inclined to look upon reports of their production as in the light of fairy tales?

Turning, however, to the results obtained with the grade cows in the competition, we likewise find most creditable records. The best grade cow produced 762 pounds of butter fat contained in over 20,000 pounds of milk. Another produced 729 pounds of fat in about the same amount of milk, and scores produced over 500 pounds of butter fat. The best ten cows in a herd produced on the average 580 pounds of fat during the ten months, and the average for ten grade cows in three other herds came between 576 and 532 pounds.

The high production of these and other remarkable producers among the grade cows in the competition is directly traceable to the continued breeding to pure bred sires in the respective herds, and if this competition does not accomplish anything else than to bring home to the rank and file of our dairy farmers the value of the pure bred special purpose dairy sire for improving the production of common or grade cows, it will have more than justified the labor that has been expended on it. This lesson and that of the value of cow testing associations for herd improvement are strikingly illustrated by the results obtained in the competition. There are many others, and more will doubtless appear as we study the records that have been accumulated.

#### SON OF THE KING

The Western Washington Holstein Breeders' Association sale, to be held at Kent (near Seattle), April 17, will be watched with keenest interest by California Holstein breeders. In the first place there will be offered 85 head of pure bred Holsteins which the management says are of the best in the world, and in proof of that announce that one outstanding animal, King Korndyke Pietertje Pontiac 127387, a son of the King of the Pontiacs who has a list of 233 A. R. O. daughters, is one of the offerings. One reason why the sale of this animal will be watched with interest is that not only is he the son of the King of the Pontiacs, but also the son of one of the great cows in the A. W. Morris & Sons herd of this state, May Korndyke 2nd, a 26 pound three year old who was daughter of May Korndyke, the first 30 pound three year old.

But this fellow is not depending on his ancestry; he calls attention to the fact that he has already three A. R. O. daughters to his credit. These are Jennie Pontiac of Greenbank, Netherland Pontiac of Greenbank, and Fay Pontiac Burke of Greenbank.

For a tabulated pedigree of King Korndyke Pietertje Pontiac, see the sale catalogue which A. B. Winter of Everett, Washington, will mail. F. W. Kiesel, president of the California Holstein Breeders' Association, has a twin brother of this great bull. Others in California are interested in the same blood. Presumably there will be some spirited bidding on this great

animal, and we hope a Californian will prove the successful bidder.

The consignor of this great animal is the Greenbank Company, 800 Leary Building, Seattle, Washington.

#### PURE BRED HEREFORD SALE

The Pacific Coast Hereford Breeders' Association will hold a sale of pure bred stock at the University Farm on April 10. There will be over 50 head consigned to the sale from all parts of this state and Nevada. The animals will be sold at auction to the highest bidder. All animals consigned to the sale must be passed on by a committee appointed by the association.

Many prominent Hereford breeders and agricultural men are expected to be present at the sale. Among those who intend to come are; Dean Curtis, of the Iowa agricultural college; Warren T. McCray, the veteran Hereford breeder of Kentland, Indiana; and R. J. Kinzer, secretary of the National Hereford Association.—W. J.

#### DUROC RECORDS UNITE

It is announced that a consolidation of the two Duroc-Jersey Swine breeders associations is about to be perfected. The new organization which joins the American and the National is to be called the Duroc-Jersey Swine Breeders' Record Association of America, and both secretaries, R. J. Evans and J. R. Pfander, are to be retained.

This is a move that will be welcomed by Duroc breeders everywhere and one that will result in the further popularizing of this great breed of hogs.

The American Red Star Animal Relief, an organization formed at the request of Secretary Baker, is distributing in the ranks of cavalymen and others handling horses in the service thousands of first aid leaflets having to do with the care of the army horse.

The Sacramento County Pomona Grange has by resolution gone on record against the admission of Chinese laborers into this state and favoring the closing of all saloons in this state during the term of the war.

Of every 319 hogs received at the Kansas City stock yards during the five year period 1913 to 1917 one was either dead when unloaded or died in the yards after arrival.

$$2 + 0 = 4$$

(A herd of good registered Holstein cows) -|- (headed by a poorly bred registered Holstein Bull) = (A first class Breeding Herd of registered Holsteins)

When you were four years old you had learned that the first of the above calculations was wrong. Now that you are grown up are you still trying to prove the second calculation above to be correct?

No man, living or dead, has yet been able to secure that result from the addition of the two factors given, although many have tried it, and many more are still experimenting with the problem.

Of the thousands of purebred bulls born, master breeders are able to effect breeding combinations that produce only a comparatively few bulls that have every inheritance and individual qualification to entitle them to positions as mates for the great cows that are expected to transmit their tremendous production through their offspring.

Add SIR VEEMAN KORNDYKE PONTIAC to your herd of good breeding females and you will get the result you are looking for. He is a big, strong, straight, well marked individual, just three years old and already sire of 30 living daughters that are just about as nice a bunch of helper calves as you could expect from one sire, is now bred to 65 good cows and helpers and SAY—he is a son of the great Sir Veeman Hengerveld, universally admitted to be one of the greatest sires the breed has ever produced, and is out of a 30 pound daughter of a 29.88 pound four year old daughter of Sir Veeman Hengerveld. And by the way—have you priced a son of Sir Veeman Hengerveld out of a 30 pound dam LATELY? If you have you know how far up into four figures the prices are now standing. We are going to sell SIR VEEMAN KORNDYKE PONTIAC at public auction, when we sell

#### 69 Registered Holstein Cows and Heifers 11 Registered Holstein Bulls

Comprising the entire Breeding Herd owned by R. F. Guerin  
VISALIA, CALIFORNIA, APRIL 4, 1918

The sale will be conducted under the well known rules of this company, every animal absolutely guaranteed to be a breeder, every animal pledged to absolute sale without reserve, limit, or by-bid, every animal tuberculin tested and sold SUBJECT TO TUBERCULIN RETEST BY THE BUYER.

Among the females are 65 COWS AND HEIFERS bred to Sir Veeman Korndyke Pontiac.

TWENTY-NINE DAUGHTERS OF ARCADY PONTIAC WAYNE HENGERVELD, 27 A. R. O. daughters, the largest number credited to any sire yet developed on the Pacific Coast.

THIRTEEN GRANDDAUGHTERS OF JUDGE HENGERVELD DE KOL, 41 A. R. O. daughters with records up to 34.19 pounds butter in seven days, 1227.46 pounds butter in one year.

• TWENTY-ONE COWS AND HEIFERS with official records up to over 24 pounds butter in seven days.

REMEMBER that 42 COWS AND HEIFERS IN THIS SALE ARE GREAT-GRANDDAUGHTERS OF THE GREAT HENGERVELD DE KOL.

A 20 POUND COW of unusual excellence, and her three daughters, one of them a 22.27 pound three year old.

A DAUGHTER OF SPRING FARM KING PONTIAC 6TH, brother to the first 44 pound cow.

FOUR DAUGHTERS OF WINIFRED HOTALING, who has two other living daughters with records of 32.19 and 33.92 pounds butter in seven days, the latter with 874.12 pounds butter from 19,951 pounds milk in one year.

TEN YOUNG BULLS out of dams with records up to over 28 pounds butter in seven days, and most of them sired by Sir Veeman Korndyke Pontiac, will be sold.

This sale includes the entire breeding herd owned by Mr. Guerin, he retaining nothing except the helper calves from Sir Veeman Korndyke Pontiac. There is only one cow of advanced age in the sale, and the herd has always been particularly free from tuberculosis or abortion, making this an offering of clean, mostly young cattle.

The sale will start promptly at 9 o'clock A. M., Thursday, April 4, 1918, at Mr. Guerin's Sunnyside Farm, about six miles north of Tulare, about six miles southwest of Visalia. Trains will be met on morning of sale at Tulare, which is reached by both the Southern Pacific and Santa Fe.

Management of

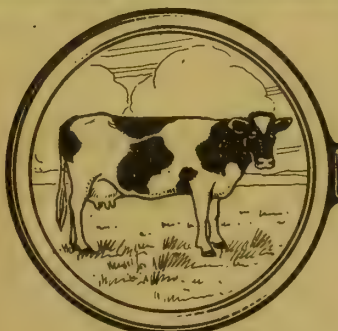
California Breeders' Sales and Pedigree Company

J. M. Henderson, Jr., Pres.

Sacramento, California.

C. L. Hughes, Sales Manager.

Auctioneer—COL. BEN A. RHOADES, Los Angeles



## ECONOMY

THE KEY TO SUCCESS

Will Increase the  
Cream Check

100 per cent Efficiency is necessary today. ECONOMY STOCK POWDER will bring your COWS up to that standard. It meets the urgent need of the DAIRYMEN. Most ailments common to the COW come on very suddenly and you must be prepared because a few hours delay may mean the loss of a valuable animal.

ECONOMY STOCK POWDER is not a FEED. It is a CONDITIONER. You can eliminate your troubles by feeding ECONOMY and keeping the COW in a healthy condition and well-fortified. You can administer just the help that nature needs at the first sign of deranged digestion, feverish condition or other warning system. ECONOMY will prove effective in restoring a normal condition and its tonic and digestive properties will stimulate the flow of the digestive juices, promote appetite and improve the circulation so that the general health and condition will show a marked improvement.

We want every DAIRYMEN on the Pacific Coast to use ECONOMY. We want to prove to you that what we say is true and if you will mail us the COUPON we will send you a liberal sample FREE.

The Economy Hog and Cattle Powder Co.

The Largest Manufacturers of Stock Powders in the World

Hearst Bldg., San Francisco, Cal.

Economy Hog & Cattle Powder Company,  
Hearst Bldg., San Francisco.

Please send me a FREE sample of Economy  
Stock Powder to try out on my cows.

Name ..... R. F. D. ....

P. O. .... State.....

I have..... COWS .....CALVES



## Training Course for Machine Milkers

Recognizing the increasing difficulty of securing good milkers, which dairy farmers in all parts of the state are experiencing, the college of agriculture of the University of California has arranged for the conduct of a practical training course for machine milkers at the University Farm, Davis, April 1-12, 1918. This course will be given by members of the staff of the college, assisted by representatives of several of the main milking machine firms. Thorough instruction will be given in operating milking machines and gas engines and also in a number of subjects of importance to milkers and dairy farmers, like the care and management of the dairy herd, testing of milk, judging dairy cows, diseases of dairy cows, calf breeding, farm separators, cow testing associations, etc. The method of instruction is by lectures, demonstrations, and practice work, special emphasis being laid on the latter, so that

students may become proficient in handling the machines and feel able to fill positions as milking machine operators in dairy herds.

The number of students admitted to the course will be limited to 24, and enrollment will be made in the order of receipt of applications, accompanied by the registration fee of \$1.00. No one will be enrolled as a student in the course who does not know how to milk by hand. Students will be required to attend all lectures and other

work scheduled on the program. They should be on hand at the beginning of the course, Monday, April 1, at 2 p. m., and barring unforeseen events, remain until the close, Friday, April 12, p. m.

There will be lectures and instruction given by Professors True on dairy breeds, Woll on milk production and milking machines, Marquardt on milk testing, Baird on care of cream, Davidson on gas engines, Hayes on cattle diseases, also addresses by L. J. Fletcher, C. V. Castle, S. L. Deming, C. M. Vestal, C. L. Roadhouse and others.

A great opportunity for dairymen.

## A Sire Proven Under Dairy Conditions

Arcady Pontiac Wayne Hengerveld was bought in the East some years back at a long price by R. F. Guerin, owner of Sunnyside Farm, Visalia, because he was about the most promising grandson of Hengerveld De Kol

that could be located at that time. He was bred to practically all of the cows in Mr. Guerin's herd and in due course of time had a bunch of daughters to reach milking age. The herd was handled under very ordinary dairy conditions, and it was only within the past few years that official testing was begun. And usually the preparation for official test consisted in bringing the cow that was about to freshen up out of the pasture and letting her stay around the corrals a few days, freshening nearly always without having been fed grain of any kind previously. It was under these conditions that the daughters of Arcady Pontiac Wayne Hengerveld made most of their records, and today his 27 A. R. O. daughters credited to him in the Holstein-Friesian Blue Book are the largest number credited to any sire yet developed on the whole Pacific Coast, and one of them has over 28 pounds butter in seven

days, while another made over 27 pounds butter in seven days and milked over 680 pounds in the same period at the age of four years. Twenty-nine daughters of Arcady Pontiac Wayne Hengerveld will be sold for Mr. Guerin at public auction on his farm, Thursday, April 4, 1918, by California Breeders Sales and Pedigree Company. This is the largest number of daughters of a proven sire ever offered in a single sale on the Pacific Coast, and as they are all bred to a 30 pound son of Sir Veeman Hengerveld they are attracting a great deal of attention from prospective purchasers.

### BERKSHIRE CAMPAIGN

A vigorous campaign of promoting Berkshire interests on the Pacific Coast will be undertaken by the new officers of the Western Berkshire Congress, according to the announcement made following the meeting of the board of directors in San Francisco last week. The first undertaking will be to incorporate the organization and then go out and make strong showings at every live stock show and fair on the Coast along with numerous sales of bred sows, in order to widen the growing of Berkshire hogs.

A big sale and showing will be made at the Los Angeles live stock exposition next fall to introduce Berkshires in Southern California better than they before have been. Northern breeders will make careful selections for this sale as they are of the opinion that the orchardists in the south will find a most profitable business in maintaining one or two good Berkshire sows on the by-products of the ranch. The community board plan will be urged to insure obtaining the service of the best kind of a sire.

At a donation sale to be held in the near future Berkshire breeders hope to raise sufficient funds for the offering of added premium money at the Los Angeles, San Francisco, Oakland, Sacramento and Portland shows. This money will be awarded in the breeding class on animals shown in good breeding condition, a departure from the too frequent practice of overfitting that often results in barrenness and sterility. All females in the over a year classes must show as safely settled with pig. This will discourage the overfitting of sows that often carry off high honors in the showing, but are of little or no value in the farrowing pen where their real merit is judged.

### DEALERS AND THE SILO TRADE

What is the explanation of the indifferent attitude of the majority of implement dealers toward that "tower of treasure" known as the silo? The enormous value of the silo has been demonstrated beyond question. It is everywhere recognized as a producer of wealth and a means by which the full feed value of corn and other crops is conserved. Its presence on a farm stamps the owner as a progressive farmer and increases his standing in a financial sense. Indeed, there are bankers who willingly lend money to farmers who have little financial responsibility when the purpose of the loan is the purchase of a silo. Use of the silo means increase of meat supply, which has been declining for many years; it means increase of dairy products and more manure for fertilization of the soil. In short, it means an increase in the profits of its owner out of all proportion to the cost—an investment which pays enormous interest.

We doubt if there is an intelligent implement dealer in the entire field who will challenge any of these statements. Yet there are only a few dealers who have become directly interested in the sale of silos. What is the reason? It isn't that farmers are building their own silos and using material that does not come within the dealer's scope of sales activity, for a large portion of the present trade is on complete knocked-down silos or on materials from which they are readily constructed, and this material can be handled easily by the dealer. Silos are built of wood, stone, brick, metal or cement, or of combinations of these materials. Silos can be purchased ready to erect. As a rule the silo proposition makes a stronger appeal to the farmer when he understands that he can purchase a silo in

## Stop Losing Calves

You can

## Wipe Abortion Out

of your herd and

## Keep it Out

Write

**Dr. David Roberts Veterinary Co.**  
Waukesha, Wisconsin

**FREE**  
Booklet  
**Questions and Answers**  
pertaining to  
**Abortion in Cows**

Answers every question. Tells how to treat your own cattle at small expense. Send for booklet now. A postal will do. State number of cattle you own.

# The Herd of Yearly Records

## Makes Another Sweeping Demonstration in the California State Dairy Cow Competition

<b>HIGHEST</b>	production of butter-fat by ten cows in a herd during ten consecutive months.....	\$300
<b>HIGHEST</b>	production of butter-fat by one cow in a herd during ten consecutive months.....	\$200
<b>HIGHEST</b>	average production of three cows in same herd, 2½ to 3½ years of age at beginning of competition .....	De Laval Separator
<b>HIGHEST</b>	production of butter-fat during ten months by a cow in the competition..	Larrowe Beet Pulp
<b>HIGHEST</b>	production of butter-fat during ten consecutive months by five pure-bred cows in a herd bred by owner .....	Bee's \$150

<b>HIGHEST</b>	average production of butter-fat by ten cows in a registered herd.....	Hughes' \$100
<b>HIGHEST</b>	production of milk in ten consecutive months by one cow .....	Scott, M. & M. Trophy
<b>HIGHEST</b>	production of butter-fat in ten consecutive months by a registered Holstein cow.....	Holstein Ass'n. Trophy
<b>HIGHEST</b>	production of butter-fat in ten consecutive months by registered cow of any breed, bred by owner .....	U. of C. Gold Medal
<b>HIGHEST</b>	production of butter-fat in ten consecutive months by five registered cows of any breed, bred by owner.....	U. of C. Gold Medal



MISS VALLEY MEAD DE KOL WALKER

Winner of Holstein-Friesian Association Silver Trophy for highest producing Holstein, and University of California Gold Medal for highest producing cow of any breed in California Dairy Competition.

## A Few of the Wonderful Cows in This Herd Are:

Miss Valley Mead De Kol Walker, holder of two world's butter records in class at two and three years, made a splendid demonstration of her ability by winning the highest honors in California Dairy Competition over all cows of all dairy breeds. Her sire is Prince Gelsche Walker, one of our herd sires, and her son sold for \$6,500 to W. J. Higdon of Tulare in the Guaranty Sale last December.

Aaggie Acme of Riverside 2nd, 1,331.77 pounds of butter in one year on strictly official test, the world's record. The dam of Miss Valley Mead De Kol Walker is sister to both the sire and dam of Aaggie Acme of Riverside 2nd.

Tilly Alcartra, 40.78 pounds butter in seven days, the only 40 pound cow ever developed west of the Rocky Mountains, and she made the record after five years of semi-official test, during which she produced a total of 123,351.3 pounds milk and 4,819.12 pounds butter, a record unequalled by any other cow of any age or breed.

### Five Great Yearly Record Sires Head Our Herd:

<b>SIR AAGGIE DE KOL ACME</b>	Son of Aaggie Acme of Riverside 2d, 1331.77 pounds butter in one year, world's official record. His three nearest dams average 22,601.7 pounds milk and 1094.21 pounds butter in one year.
<b>SEGIS PONTIAC DE KOL BURKE</b>	Son of Riverside Sadie De Kol Burke, 902.1 pounds milk, 32.25 pounds butter in seven days, 28,826.4 pounds milk and 1085.12 pounds butter in one year, world's yearly milk record when made. His first daughter to finish yearly test as a two-year-old made 18,362.5 pounds milk and 932.43 pounds butter; California record in class.
<b>KING MEAD OF RIVERSIDE</b>	Sire of the world's official yearly record butter cow, Aaggie Acme of Riverside 2d. In a class by himself as a sire of daughters that all average over four per cent butter fat straight through on year's tests.

**PRINCE GELSCH WALKER** Sire of Miss Valley Mead De Kol Walker, 36.88 pounds butter in seven days as a junior three-year-old, world's record in seven days eight months after calving in two classes, and now making a yearly record that will exceed 1100 pounds butter as junior three. Also sire of a 34-pound junior four-year-old, and a list of daughters that are making great yearly records as they are put on.

**KING MORCO ALCARTRA** Son of Tilly Alcartra, the world's greatest dairy cow. She made 40.78 pounds butter in seven days after making 123,351.3 pounds milk and 4,819.12 pounds butter in five successive lactation periods, including several world's records. His dam and sire's dam average 38.53 pounds butter and 842.9 pounds milk in seven days, 29,638.9 pounds milk and 1137.79 pounds butter in one year.

**You can't make a mistake buying a son of any one of these outstanding sires out of our good cows. Buy one and breed the greatest yearly production into your herd**

**A. W. Morris & Sons Corporation** WOODLAND CALIFORNIA



form ready to erect in short order, rather than to buy material in the raw state and follow the process required for building. This fact makes the silo trade a dealer proposition, yet many silos are being sold direct to farmers, or through farmer agents who themselves purchased silos direct from manufacturers, all because the dealers who might have figured in these sales to their advantage ignored or deliberately refused to improve their opportunities.

The value of the silo has been enormously increased by the conditions resulting from the war into which the world has been plunged. If there were a silo on every American farm there would be no shortage of meat or wheat, nor would the babies of big cities be suffering for lack of milk while the producers and the distributors fight among themselves over the price. If there were a silo on every American farm where a silo could be used to advantage—and that means most of the farms—we would have plenty of food for ourselves and our allies. Nor will the food problem disappear immediately after the war ends. Normal food conditions will never be restored until there is a substantial increase in production, hence aside from pressing necessities, the welfare of the world after peace comes depends largely upon such increase. Every silo sold is a step in that direction. — Tractor and Truck Review.

#### PICNIC DAY

With picnic day at the University Farm less than a month off, plans are progressing rapidly for the entertainment of the 20,000 expected visitors. There will be a mammoth tractor demonstration on the farm April 17, 18 and 19. Picnic day will be on the 20th of April.

The parade will be the feature of the day. There will be floats representing every department on the farm. Some of the finest pure bred live stock in the country will be on the floats. Other floats will have demonstrations of agricultural features which will be educational in their make up. Amusing comedy floats will also have their places in the line. Every common type of tractor will be represented, along with the implements and accessories.

Speeches and athletic events will be held during the day. Booths will be provided where visitors can purchase soft drinks, ice cream, hot-dogs, and other things which go to make up a lunch. Coffee will be served free of charge.

The Southern Pacific railroad will grant a rate of one and one-third fare for picnic day excursions. Tickets may be purchased on the 15th or 16th and will be good returning on the 21st, thus taking in the tractor demonstration.—W. J.

#### HIGHEST JERSEY RECORDS COMPLETED IN 1917

##### Cows Under two Years Six Months

Sophie's Dolly Dimple 348582, 10-813.9 pounds milk, 689.68 pounds fat, 2 years 3 months old, owned by H. W. Bonnell, Ohio.

##### Cows 2½ Years and Under 3 Years

Campus Virginia-B 317162, 11,848.7 pounds milk, 624.67 pounds fat, 2 years 7 months old, owned by Missouri Agricultural College.

##### Cows 3 Years and Under 4 Years

Vive La France 319616, 12,744.8 pounds milk, 892.63 pounds fat, 3 years 2 months old, owned by Pickard Bros., Oregon.

##### Cows 4 Years and Under 5 Years

Goldie's Nehalem Beauty 283330, 15,323.5 pounds milk, 904.91 pounds fat, 4 years 6 months old, owned by C. F. Reid, Oregon.

##### Cows 5 Years and Over

Dosoris Park Lily 233783, 15,506.6 pounds milk, 911.92 pounds fat, 7 years 2 months old, owned by estate of Charles Pratt, New York.

Don't try to build business on the basis of your competitor's weakness. Build on your own strength and the strength of your goods.—Exchange.

The bee that gets the honey doesn't hang around the hive.—De Laval.



## A CYCLONE SILO Will Save You Big Money On Your Feed Bill

If you are in the farming business to make money you must save as well as earn—a silo will save you its cost in the first year of its use. With a silo you can convert into first-class stock feed a lot of your product that you have wasted in the past—

### The CYCLONE SILO

—is constructed to stand up under the most trying conditions. Flat iron bands encircle the CYCLONE (as illustrated) in such a way that it cannot possibly twist or warp out of shape—does not get smaller at top than bottom after usage. No guy wires to stumble over.

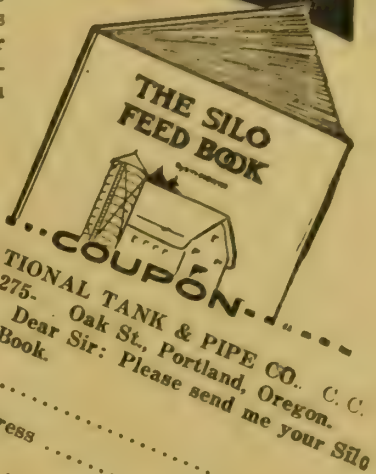
We, who make this silo, have been manufacturing wood tanks, wood stave pipe, etc., for use in all parts of the world for 25 years—we know our business and our guarantee that this silo is right means something.

Our Silo Feed Book is Free—Send for Your Copy

NATIONAL TANK & PIPE CO.

275-B Oak Street, PORTLAND, OREGON.

Let Us Quote You on wood stave pipe, wood tanks and allied products.



Get our Feed Book - It's Free

## IN THE FIELD MAKING MONEY-



## or in the Barn Wasting It

WHETHER your horses work or not, their feed costs you big money. When a horse is laid up you not only lose the cost of feed, but also the profit that the horse would have paid if able to work in the field. Since there is no way to prevent spavin, curb, splint, ringbone, sprains and lameness, your thought should be given to their quickest, surest and most economical treatment. For over 40 years, thousands of horsemen have depended on Kendall's Spavin Treatment. It's the old, reliable, safe remedy that has saved thousands of dollars' worth of horse flesh, to say nothing of the worry, time and trouble it has saved horse owners. You should get and keep a bottle of—

## KENDALL'S SPAVIN TREATMENT

Known for 40 Years as Kendall's Spavin Cure

for emergencies. You never can tell when you'll need it, and when the time does come, you'll be mighty glad you had the foresight to prepare. Here are samples of the thousands of letters we receive from grateful horse owners every year. Mr. J. J. Sandlin, New Hope, Ala., writes:—"I am a great believer in Kendall's Spavin Treatment. A few applications have just taken an unnatural growth off my horse's back, thereby increasing his value \$25.00 at least." Mr. J. B. McCullors, Halesville, Ala., writes:—"Last July I bought a mule for \$65.00. He had a bad Spavin and was unable to work, but after using three bottles of your Spavin Treatment it yielded and he was sold in March for \$180. I advise all horse owners to use Kendall's Spavin Treatment." And Mr. Wm. Booth, of Grovett, Ark., writes:—"I have removed both Blood and Bone Spavins, taking the bunch all off and leaving the horse as sound as he ever was."

Why experiment with other remedies—when you know what Kendall's has done and can do. You can get Kendall's Spavin Treatment at any druggist's, \$1.10 per bottle, 6 for \$5.50. Ask for free book, "Treatise on the Horse," or write direct to

Dr. B. J. Kendall Company,

Enosburg Falls, Vt., U. S. A.

### LONE STAR



### Registered Herd

800 Cows and 50 Bulls Best of Breeding Show Winners  
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.  
Scharbaaur & Eldson, Midland, Texas

### HEREFORDS

### Unregistered Herds

4000 Head Both Sexes Same Breeding as Registered Herd  
We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.  
Elevation 3000 Feet

## Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

M. Bassett

Hanford, Kings County, Cal.



## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

Whittier State School

WHITTIER, CALIFORNIA



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### TREES

**A. R. Rideout**, professional avocado budder. I will bud over your worthless avocado trees to standard varieties, Lyon, Fuerte, Bartley, Sharpless, Sinaloa or any other kinds desired. I guarantee my work. Not a dollar down until the buds start to grow. A. R. Rideout, Rideout Heights, Whittier, Cal. Phone 4971.

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Eureka Walnuts are the Best**—Grafted on native black roots. We also have some grafted on paradox roots, which means a hardy root system and a very prolific grower. Prices reasonable, write today, tomorrow never comes. Geyer Bros. Walnut Nurseries, 214 S. Alhambra St., Alhambra, Cal.

**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencias on sweet root. We call these good trees and we know whereof we speak. **ALBERT JACKSON**, Upland, Cal.

**For Sale**—25,000 2 year old uncultured citrus trees, (Navels, Valencias, Lemons) positively of the very highest pedigreed quality, must be removed from young orchard this season. Price attractive. Write for information to John Hinkle, Lordsburg, Cal.

**Must be Sold**—8000 Valencia orange and Eureka lemons, strong healthy stock, two and three year buds, sour roots. Special prices on orders of 500 or more. Opposite grammar school, Montebello. Tel. Boyle 3311 or address L. F. Thurston, R. D. 3, Orange. Tel. 35J4.

**For Sale: Citrus Trees**—Choice stock, young and thrifty. Selected buds. Valencias and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110, Los Angeles.

**Let Us Show You Our Ideal twelve hundred acre orchard** from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References. R. R. Morris, East Whittier, Cal.

**Closing Out**—15,000 choice Orange and Lemon trees for sale. Marsh Seedless Grapefruit, Eureka Lemons, Washington Navel and Valencias. Two year old buds, 30 cents each or in hundred lots 25 cents. F. A. Anderson, Elsinore, California.

**For Sale**—Valencia Orange and Marsh grapefruit trees. Stock propagated only from Performance Record Trees of best type. Trees that will bear and insure profits. Write today. L. V. W. Brown, Riverside, Cal.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell** is through classified advertisements in California Cultivator. The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon trees** one year past, ½ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Trees**—Apricot, Royal; Peaches, Tuscan, Cling and Lovell. 4-6 feet, \$12.50 per 100. Olives, Manzanillo and Mission, 15.00 to \$25.00 per 100. Kavan Nursery Co., San Bernardino, Cal.

**Bartlett Pear Trees**—Three to four feet. Well rooted, Japanese and French Dormant, at a bargain. Address Robt. P. Eachus, Oak Mound Nursery, Lakeport, Cal.

**For Sale**—We still have a good selection of grafted Eureka Walnut trees for sale. Extra select lot of scions was used on northern black roots. Address C. W. Story, Rivera, Cal. Whittier Phone 4721.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574. Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**Valencia, Washington Navel, Eureka Lemons and seedless Grapefruit**, 2 years old. Healthy stocks. K. Niwa, P. O. Box 306, Glendora, California.

**Olive Trees**—Mission, Manzanillo, Ascotano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John T. Preston, Anaheim, Cal. Home 1472.

**Florida Sour Orange Seedbed Stock**—Clean, straight and very vigorous. Performance Record Citrus Trees. F. H. Nushickel, Glendora, Cal. Phone 2388.

**Apricots, Olives, English Morello Cherries and Arizona Ash**. First-class trees. C. E. MOYER, Hemet, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Laramanda Park, Cal.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsurgi, 23rd St. Upland, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### TREES

**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**For Sale**—Budded avocado trees, Lyon, Fuerte, Sharpless, etc. Lyon and Sharpless budwood for sale. Buds out from bearing Lyon trees. Every tree field grown, boxed and established. At home every Saturday. Advisable to phone or write for an appointment any other day in the week as I am away budding quite a bit of the time. Do not come on Sundays. A. R. Rideout, Rideout Heights, Whittier, Cal. Phone 4971.

**Citrus**—7000 Navels, Valencias, Eureka Lemons, two and three years. Located Whittier and Glendora. 10,000 one year Villa Franca, Lisbon, Eureka and Seedless Lemons. Located near San Diego. Clean thrifty stock. Our own budding, buds cut from record trees. You will not make a mistake in ordering this stock. Cyrus W. Wilhite, Citrus Nurseries, Glendora, Cal. Home 303.

**Lemon Trees**—To close out am offering low prices on 3 and 4 year trees. Fine stock, splendid root system. Bargain prices. Smith Citrus Nurseries, 816 Washington Bldg., Los Angeles. Bdwy. 1720.

**Mission and Manzanillo Olive trees**, all sizes and prices sure to satisfy. Write us at once for any amount. We want to sell. Imperial Valley Nursery & Seed House, El Centro, Cal.

**Valencia Trees**—Very fine 2 year buds, from fine stock. Splendid root system. Get prices. Smith Citrus Nurseries, 816 Washington Bldg., Los Angeles. Bdwy. 1720.

**For Sale**—1000 first-class Eureka lemon trees, ½ to 1½ inches. Free from scale. 25c apiece. Peter Arth, Redlands, California.

### SPECIAL SHARPLESS AVOCADO TREES

Mathers' Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**For Sale**—Orange seed and seedlings, budded citrus and avocado trees. Paul B. Magee, Colorado and Huntington Drive, Pasadena, Cal.

**Eureka Lemons** cheap to clean up. They show their fruit buds, no better trees grown. H. Clements, Glendora.

**Budding**—Citrus, Avocado. Paul B. Magee, Colorado and Huntington Drive, Pasadena.

**For Sale**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, Cal.

**For Sale**—Citrus trees and seed stock. B. C. Dodson, Glendora, Cal.

### MISCELLANEOUS

**Why Allow Noxious Weeds and grass to grow?** Kill Weed will eradicate them. Conserve the plant food they use. One gallon trial order \$2.50. Kill Weed Company, Sacramento, Cal.

**For Sale**—Try a 50c package of our New Growth Plant Food for your garden, lawn and flowers. NEU GROWTH PLANT FOOD CO., 230 New High St., Los Angeles.

**Tobacco Stems** for sale, 1 cent a pound in 100 pound lots or over. Max Roth, Cigar Co., 548 S. Los Angeles St., Los Angeles.

**All kinds second hand harness, pipe, collars and harness to order.** D. Hurton, Mission and Eighth, San Francisco, California.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**35 Light Pilot Acetylene Carbide plant and fixtures.** Price \$125. Geo. Vandenberg, 2208 Garnet St., Los Angeles.

**Quality Trees, Seed Potatoes, berry plants, seeds, milk goats.** Cash Nurseries, Sebastopol, Cal.

**For Sale**—Petroleum brooder stove; Free-man feed cutter; bee hives, extractor. Frank McAlister, San Fernando.

### AGRICULTURAL IMPLEMENTS

**The U. S. Cream Separator** like John Brown's soul, goes marching on. If you want to know about the new United States or need repairs for old one, write H. E. Walker, Sales Mgr., Box 364, Portland, Ore.

**IMPLEMENTS AND RANCH SUPPLIES.** Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC., The Yellow Front. Established 1892 112-118 S. Los Angeles St. Los Angeles.

### LUMBER

**Lumber**—Sash—Doors—Plumbing—Supplies—Building materials of all kinds. New and second hand. \*A.R. W. shingles 55 cents per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

### ENGINES

**Several New and Slightly Used Engines.** ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

### LIVE STOCK

**For Sale Cheap**—Stallions, Jacks and Jennies. 1 registered Belgian Stallion; 1 registered Percheron, both weighing over a ton; 3 young Jacks registered; 6 young Jennies registered. Among them several exceptionally fine animals weighing over 1150 pounds. Address Newport Estate, Ferris, California.

**Sheep for Sale**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

**Stallion for Sale**—Imported French stallion Lapon, 7 years old. Chas. E. Bonoli, Petrolia, California.

**Registered Shires**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

### RABBITS

**Go into Business For Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

### AUTOMOBILE TRAILERS

**All Sizes.** See our stock. Immediate deliveries. Lowest prices. Arnott & Company, Inc., 112-118 So. Los Angeles St., Los Angeles.

### POULTRY

**For Sale**—300,000 Single Comb White Leghorn chicks during April, May and June. Heaviest laying, Hogenized stock only. Broilers in ten weeks; pullets lay at five months. We guarantee safe arrival of all chicks to destination, you pay only for chicks received in good condition. Shipped safely anywhere West of the Rockies. Price \$10.00 per 100; \$95.00 per 1000. No money in advance; pay on delivery. Finest hatchery in the world. Established over twenty years.

**Must Hatch Incubator Co.,** 418 Seventh St., Petaluma, California

**John G. Poorman's** 200 egg strains of great winter layers are making money for us and will for you. Settings from the get of S. C. White Leghorns, "Busy Bess" record 235 eggs and S. C. R. I. Red "Lady Agnes" record 236 eggs, \$2.25, \$1.50, \$1.00. Baby chicks, 15c, 25c. Cockerels, \$5.00 to \$15.00. Elmhurst Poultry Farm, 5217 T St., Sacramento, Cal.

**Baby Chicks, Anconas, Rhode Island Reds,** \$14.00 per 100, Barred Rocks, \$17.50. MacFarlane Quality White Leghorn, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. Agent for Poultrymen's Co-Operative Association. Incubator catalogue mailed free. D. E. Duke, 743 So. Los Angeles St., Los Angeles.

**For Sale**—Pure Strains baby chicks from selected flocks. White Leghorns, R. I. Reds and Barred Rocks; hatches every week, order filled in rotation and shipped anywhere. Also Buckeye and Jubilee Incubators and Brooders. Stiles Poultry Supply Co., 645 G Street, San Diego.

**For Sale**—Lo-Glo, Electric Incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Ancona Chicks** from my vigorous heavy-laying strain of First Prize winning Anconas, \$15 per 100, \$70 per 500. Hatching eggs \$1.50 a setting, \$6.00 per hundred. Kaj. Paulsen, Route F, Fresno, California.

**For Sale**—Anconas the most popular breed today. "There's a reason." Small eaters and heavy layers of large eggs. Five breeding pens. Eggs of guaranteed fertility \$1 per 15; \$6 per 100. A. E. Nelson, El Monte, Cal.

**White Leghorn Baby Chix** from heavy-laying (Hogenized) stock; \$10 per 100. We guarantee safe arrival. THE PETALUMA HATCHERY, 409 Sixth St., Petaluma, California.

**Huddleston Blue Andalusians**, great winning and laying strain. Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**Petaluma Hatchery** can ship day old chicks to points reached in three days. Why not have the best? We challenge the hen. Free circular. L. W. Clark, Petaluma, Cal.

**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders** for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery, Watsonville, Cal.

**For Sale**—Barred Rock, R. I. Red and White Leghorn chicks. Reduced prices. Fine stock. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain). Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**For Sale**—1917 model 200-egg Radio-Round Incubator, also 50-egg Cycle Hatcher; cheap. R. L. Bernard, Mountain View.

**Baby Chicks** (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

**Baby Chicks** from Forney's famous heavy laying strain of Single Comb White Leghorns. \$14 per 100; \$65 per 500; \$120 per 1000. John F. Forney, Kingsburg, Cal.

**White Wyandotte eggs** for hatching from fine breeding pens. Can't be excelled for winter layers. J. W. Nicholson, Wasco.

**Buff Leghorn Eggs**—\$1.50 per 15, \$5.00 per 100. Mrs. H. W. McClure, Glendale, Arizona.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynolds, Lathrop.

### POULTRY

**White Leghorn Baby Chicks**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. \$11.00 per 100. Lyon Hatchery, Gardena.

**Your Opportunity**—Half price eggs sale. Big profit now raising our 200-290 egg Leghorns, Wyandottes, Anconas, Red Rocks, Minorcas, Orpingtons, Brannans, ducks, geese, turkeys. Thousands chicks, eggs weekly, reasonable. Laying pullets hens. Males half price. Many repeat orders. Hundreds customers making money. One cleared \$617 on 110 hens last year. James Beeson, Pasadena, Cal.

**Baby Chicks & Eggs For Hatching**—from pure bred McFarland strain White Leghorns, carefully culled and Hogenized for heavy egg production, shipped on approval \$10.00 per 100, special price in lots of 500 or more. Sonoma Valley Hatchery & Poultry Yards, R. 2, Box 48, Sonoma, Cal. Write for booklet.

**Thorough Barred P. Rocks** exclusively. Hen record 190 eggs in 10 months. Trap-nested, pedigreed matings for 1918. Pen 1, \$2.50; two \$1.50 per 15 eggs. Baby chicks, March and April 25 cents, limited number. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

**Baby Chicks and Eggs**—Hogenized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked now for spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Model Poultry Farm, White Leghorn Specialists**, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Baby Chicks**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbs, Campbell Poultry Ranch, Campbell, Cal.

**Spring Chicks**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal., Route A.

**White Leghorns—White Rocks**—Highest class of thoroughbred stock. Chicks, Leghorns, \$15.00 per 100. Rocks \$20.00 per 100. Eggs \$2.50 per 15. \$10.00 per 100. Eggs from special pens of high class exhibition type \$5.00 per 15. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

**Baby Chicks**—Leading varieties. We guarantee safe arrival and full count; strong vigorous chicks from the finest flocks of free range stock in this country. 1918 price list and instructions on care of baby chicks, if you mention this paper. Lasher's Hatchery, Petaluma, Cal.

**For Sale**—Baby chicks from fine thoroughbred heavy laying stock. White Leghorns, 100, \$12.50. Rocks and Reds 100, \$15.00. Hatching eggs 15, \$1.25, 100, \$6.00. McConnel's Black Minorca eggs, 15, \$1.50, 30, \$2.50. Bronze Turkey eggs, 15, \$4.00. W. H. Ralls, Orange, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona, Cal.

**Headquarters for Baby Chicks** of standard breeds. Shipped to all points within 40 hours' travel from Fresno and on Freemarket. Phone 2544W. Hall & Rohrs, cor. Clark and Belmont, Fresno, California.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns, "Quackless" White Muscovy dux.** White Embden goslings, eggs and babies. White Star Hatchery, Kerman, Cal.

**"Eastman's Bred-to-Lay"** Hogenized, trap-nested Barred Plymouth Rocks; April chicks, March eggs. Fairmead Poultry Farm, Fairmead, California.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for matting list. IVEYMOOR FARM, San Leandro, Cal.

**For Sale**—Rhode Island Red baby chicks from our carefully selected matings. \$14 per hundred. Williams Poultry Place, 236 No. Gage, Los Angeles.

**White Leghorn chicks and eggs**, best strains, low prices, large plant. Free catalogue and price list. Newton Poultry Farm, Los Gatos, Cal.

**White Leghorn Baby Chicks**—Strong and healthy for particular people, from Hogenized heavy laying mature fowls. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

**Baby Chicks**—C. A. Gray Hatchery, Le-moore, Cal. S. C. Brown Leghorn \$12.50 per 100, S. C. Rhode Islands \$15.00 per 100, one-fifth down with order.

**Buff Orpingtons, Buff Ducks, Bourbor Red Turkeys.** Hatching eggs; baby stock; matting list. The Ferris Ranch, 8 Reservoir, Pomona, Cal.

**Trapnested White Leghorns**—Official 20 egg records, also eggs from above \$1 per 15, \$8 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

**Pit Games, Reds, Blues, Grays**—Cocks atags, hens, eggs. R. H. Crane, Route 3, Santa Rosa.



HOGS

**Make Big Money**—You can, even at present price of grain, if you have our famous Whitten Ranch Poland-Chinas—the mammoth, prolific, fast-growing, easy-feeding kind. Special sale of weaned pigs, many sired by our great \$1000 Jumbo Model. Prices reasonable; satisfaction guaranteed; everything immune. Send for free illustrated booklet, "Hogs for Profit." Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 519B Marsh-Strong Bldg., Los Angeles.

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—GRAPE WILD FARMS—

At present the oldest boars we have to offer are of September and October farrow. They are by Royal Superbus and Fashion Longfellow 27th. We also have a limited number of gilts to offer, bred for May farrow.

A. B. HUMPHREY, Escalon, San Joaquin County, California.

**The Billiken Brand of Chesters**—The easy feeders and the money makers. The future outlook for hogs was never so good before. Am offering a few fall sows, bred to farrow their second litters in May. Some extra nice spring gilts bred to farrow in June. Fall pigs, both sexes. Write now for prices; immediate delivery. C. B. Cunningham, Mills, Sacramento County, Cal.

**Improved Jerusalem Artichokes** produce twenty tons to the acre. The great hog feed for the winter months—the hog does the harvesting. 18 pounds for \$1.50 postpaid to and including third zone. 38 pounds for \$5.00 f. o. b. Niles. 1000 pounds and over at 4 cents per pound. California Nursery Co., Niles, Cal.

**Superba, World's Grand Champion** Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Sta., Riverside, Cal.

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. F. D. Hall, Perris, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Copro (Made from cocoanuts)**—Best hog feed. Your dealer, or Lee Chamberlain & Co., Los Angeles, Cal.

**Bernstein's Reduction Sale of Registered** Poland-Chinas, Hanford, April 17. 60 head will be sold consisting of four herd boars, 18 bred sows and gilts, six fall boars and 32 fall gilts.

**Duroc-Jerseys**—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

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**PLW Durocs**—Golden Models and Great Wonders are the most consistent winners at every show. Peters, Lamson & Walker, Devore, San Bernardino County, Cal.

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**HEWITT'S BIG TYPE POLAND-CHINA** gilts and boar pigs. Hewitt & Hewitt, Dixon, Cal.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

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**Your Alfalfa Fields** will produce heavier crops of clean hay for a greater number of years if you plant the seed best suited to your conditions. We will gladly give you the benefit of our long years of experience as commercial growers if you will write us of your soil and climatic conditions and will also send you samples and prices of the seed we consider adapted to your requirements. Desk B. Bomberger Seed Co., Modesto, Cal.

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**Sweet Potato Plants** for sale. We make a specialty of shipping to outside points. Wholesale and retail. Prices on request, stating quantity. Plants ready April and May. Address Box 522, Merced, Cal.

**For Sale**—Sharpless strawberry plants, 15c dozen, 2 dozen 25c, 100 60c. Heavy bearers. Strawberry Rhubarb plants, 4 for 25c. All postpaid. Apply to Gust Brown, Park, California.

**Rhubarb Plants**—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00, Wagner's Giant Crimson Winter \$3.00, 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Sweet Potato Plants for Sale**, 500,000 Yellow Nansemon, April and May delivery, \$2.50 per 1000. F. O. Popenoe, Altadena, California.

**For Sale**—Pink beans. Choice seed. Hand cleaned. Ten cents per pound in lots of fifty pounds or over. A. Osburn, Redlands, Cal.

**Soudan Grass**—A few thousand pounds of Soudan grass seed for sale. Write for prices. L. A. Gunther, Los Molinos, Tehama Co.

**Strawberry Plants**—Everbearing, strong, northern grown. Americus, \$1.50 per 100; \$3.00 per 250. F. I. Moffet, Ellensburg, Washington.

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**Sweet Potato, Chili pepper** and other vegetable plants in any quantities. Geo. M. Ketscher, Santa Ana, Cal.

**R-O-S-E'S** 50 cents per dozen. Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

**For Sale**—Connell Blue Potatoes for seed at W. W. Hoyt Ranch, Motor Route A, Phone 865, Placerville.

WANTED

WANTED: HERDSMAN

Single man, who understands scientific feeding and can do veterinary work. Have hundred high grade Guernseys, but going into pure bred. Dairy within twenty miles of Los Angeles. State fully experience, references, wages expected and age. Box A, care Cultivator.

**Wanted**—Place as foreman. Advertiser is thorough in all lines farming, fruit growing and care of livestock. Experienced in working all kinds of labor, both tenant and wage system. Address D., care Cultivator.

**Wanted**—Calendula Flower leaves. Must be dark orange perfectly dry, clean and free from dust, stamen or green leaves. Send sample and state amount on hand and price will be quoted. Address C., care California Cultivator.

**Wanted**—Experienced working foreman for mountain apple orchard. State age, experience, size family, references. I. Ford, 915 W. Cypress Ave., Redlands, California.

**Wanted**—Good bee location. Place with water and a garden patch preferred. E. L. Babe, Del Mar, California.

**Wanted**—500 Buff Leghorn baby chicks. Mrs. H. M. Kinne, R. 1, Box 36-C, El Centro, California.

GEESSE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alhambra, Cal.

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**Toggenburg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, Cal.

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**FOR SALE—USED WINDMILLS, TANKS, TANKS, PUMPS, PUMPS, RANCH TOOLS.**

Plows, Harrows, Cultivators, Southwick Power baler \$250, cost \$300. PLOWS, HARROWS, MOWERS, RAKES. 150 iron redwood tanks, 50 gallons to 25,000, several wagon tanks, 3-16 steel riveted wagon tank, \$85, cost \$200; 30 windmills.

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Several single, double acting deep well pumps; 30 cylinders, all sizes. Also two, three, four, single horizontal pumps. Special bargain, single acting deep well head 100 ft. 7 1/2" piping rods, 7-in. cylinder, 8 H. P. Engine, used one year, \$450, cost double. No. 5, two stage, like new, \$175, cost \$400. 3 vertical, \$50, 6, \$90; 7-in. Krogh, fine, \$125; 80-ft. 1 1/2-16 shafting, bearings, pulleys, sundries.

**POULTRY SUPPLIES.** 25 Automatic feeders, \$2.50. Grinders, choppers, sundries, Iron kettle, % by % flexible cable. Remember the new machinery you buy at unreasonable prices will be like these in a short while, but not necessarily worn out. Call, write. Office Demmitt Co., 120 North Main, Upstairs, Los Angeles.

**For Sale**—One 18 h. p. "Olds" distillate engine, mounted on wagon. One 50 h. p. "Olds" distillate engine; one 20 h. p. "Muncie" oil engine; one water well drilling rig; one wooden wagon running gear. The above used machinery may be priced at our shop. Will be sold at a very low figure. Dunn Manufacturing Co., Oxnard, Cal.

**REMANUFACTURED PIPE** All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

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**Tractor Plow**—Sanders 4 disc; plowed 10 acres demonstration only. Price \$200, with 2 100-lb. wheel weight. G. E. Busch, Santa Rosa, California.

**For Sale**—Southwick Power Baler Gears and Bearings, 1st class. Cost new \$800. Our price \$250. Demmitt, 120 North Main, Los Angeles.

**25 h. p. Western and Lane-Bowler** 10 inch vertical. Good condition. Hale, Owensmouth, Cal.

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**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs** and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, Cal.

**For Sale**—Young registered Jersey cow and thorobred (solid fawn) bull calf. Also fine grade Jersey (tests high) and heifer calf. Robt. Stevenson, Box 387, Watsonville, Cal.

**Twenty-five head good, range Durham** cows, some fresh, others to be fresh this spring and summer; in good condition. For sale at a bargain. Address Box 135, Morgan Hill, California.

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**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

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**Mammoth Bronze turkey leaders** of Imperial Valley toms, 8 months weight 26 to 30 lbs., price \$15.00 to \$25.00 each. E. V. Blaschko, Silsbee, Cal.

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**For sale or exchange** for other property or cash, \$500 Homestead Relinquishment 8 miles north of Honey Lake in Creson Valley, Lassen County. Sage brush land, small house. Railroad crosses place. Sidetrack on corner. Solomon Britton, 438 James St., Modesto, California.

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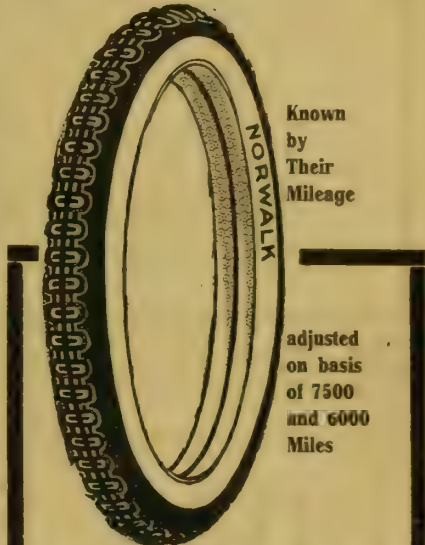
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HINTS ON GARDENING

"A Few hints on Gardening" is the title of the 1918 catalog of Morris & Snow, 439 South Main Street, Los Angeles. Of course it has the usual feature of an order blank, planting calendar, etc., and it has list of the seeds and plants for sale by the company. In addition it has a fund of information of value to every backyard and frontyard gardener. It tells how to plant, when to plant, and what to plant. It is worth sending for—and that is all it costs.





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**Makes Chicks Healthy. The Best Safeguard Against Little Chick Ailments**

Your great problem is not how to hatch chicks, but to raise them after they are hatched. You would like to avoid the distressing losses of the first few weeks. Here's the best advice I can give you: Feed chicks Pan-a-ce-a to keep their general health good. Remember that disease takes the weak, not the strong and vigorous.

**LISTEN TO THIS:** There's a dealer in your town that will supply you with Dr. Hess Poultry Pan-a-ce-a, sufficient for your flock—it's to keep your chicks healthy; it's to prevent gapes and cure the gapey ones—it's to prevent and cure leg weakness—it's to prevent and cure indigestion—it's to regulate the bowel troubles. Guaranteed.

If you want early broilers and pullets that will develop into early winter layers, then feed Pan-a-ce-a. Packages, 25c, 50c and \$1.00. 25-lb. pail, \$3.00; 100-lb. drum, \$11.00.

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## Hens in an Orange Grove

Written for California Cultivator by Jean A. Koethen

**T**HAT hens belong on the general farm goes without saying. The case of the hen in the orange grove is far different. There is no waste there for her. She cannot eat cull oranges. If she did, they would not be good for her. And she does scratch up the furrows and make a nuisance of herself generally. Besides, who wants to fence in his whole grove with chicken wire, and if he doesn't, there is trouble with his neighbors. "No," says Mr. Orange Grower, "to keep 100 hens in my orchard is simply impossible. I won't be bothered with them."

Hens may be a bother, and they may be a joy forever. If they are allowed to do as they please, like undisciplined children, they are undoubtedly a bother and a nuisance. If they are kept in their place, confined by wire fencing except at such times as it is proper for them to go abroad, they may be made as profitable as oranges, and yet will not interfere with the crop in the least.

A flock of this sort, numbering nearly 400, is kept by Mr. Harry Bickle on his five-acre grove in Riverside. The hens are never allowed to run. "They hide their nests and bother the neighbors if I let them out," said Mr. Bickle, "and they lay more eggs and are less trouble if I just keep them in the runs."

The poultry houses and runs are in the middle of the orchard, surrounded by a high chicken-tight fence. Together with the house and barn they occupy about a half acre. Another half acre is devoted to the alfalfa patch which provides green feed for the hens most of the year. All the rest of the place is in oranges. To be absolutely accurate, all the place except the space occupied by house and front yard, barn and alfalfa patch, is in oranges, for the chicken runs do not in the least interfere with the orange trees within them. The hens do not care to roost in the trees, nor do they interfere in any way with the crop, while the trees provide much needed shade. In order that the hens may never lack greens, about half an acre at the rear of the place is planted to barley between the trees. In winter when the alfalfa is dormant the barley is run through the clover cutter and fed in troughs and mash.

Green feed is Mr. Bickle's hobby. Cut-up alfalfa or barley is mixed with the moist mash that is given all layers in the morning. It is also mixed with the dry mash that is before them all day. In fact, he tries to keep some green before them all the time. Perhaps this is the secret of their excellent laying.

The houses and runs are arranged in a square, those of the older hens facing east and those of the pullets south. The houses are built in sections, each section being entirely separated by wire or board partition from the adjoining section. Each section, or house, for they are in some cases entirely separate, holds a maximum of 100 hens. Some of the houses are 8x12, with 70-foot run, others 12x12 with 70-foot run. Mr. Bickle runs for the most part about 90 hens to a house, but considers a house 12x12 amply large enough for 100 hens. The houses are all built on the economical plan which provides scratching space under the dropping boards. This assures the hens a dry place in wet weather.

The day I was there Mr. Bickle brought in 23 dozen eggs. That was nearly 75 per cent production for the 370 hens in his runs. During the month of January the same hens laid a total of 4973 eggs, or an average production of 43.2 per cent. The record of the 205 pullets, which is kept with that of the hens, and also separately, showed 1119 eggs for the first eight days of February, or an average production of 68 per cent. A half dozen or so of the flock are Campines, the rest Single Comb White Leghorns, which have been so many times proved to lay more eggs for a given amount of feed than any other breed that there is no question as to their efficiency and economy.

Mr. Bickle keeps no male birds. Each spring he buys day-old chicks, 500 or more, according to the number

of pullets he desires, and raises them in his brooder house. He is thus spared the care of breeding stock and can devote his whole thought to egg production. The cockerels he raises are sent to market as soon as they reach broiler size, and the pullets at six months of age are ready to replace the oldest of the hens.

Few orange growers, perhaps, would care to keep as many hens as Mr. Bickle does, but 100 hens, in a single house 12 feet square with a run half the length of an ordinary city lot, would not be difficult to plan for. If the hens are kept closely confined every day till 3 o'clock they may be allowed to run till supper time with little danger that they will hide their nests. If such range, however, brings them too near the next neighbor's line, there is nothing for it but to keep them closely confined.

Providing green stuff for a flock of hens should be easier for the orange grower than for other farmers. Six months of the year he is expected to grow vetch or cowpeas or some other kind of greens between the rows of orange trees. Just a little of this, run through the clover cutter, will give 100 hens all the green they need. Then there are nearly always odd strips and corners where extra greens, such as kale, turnips, chard or rape, may be planted and watered with the waste from orchard irrigation. In my 15 years on an orange ranch I heard every argument against keeping chickens over and over. Since I have tried to raise chickens and garden on a dry hillside, where water must always be used with the greatest economy and runs off or soaks in clear to the center of the earth when it is not watched, I have come to think the orange grower does not begin to do what he might with his abundance of water.

Then there is the manure from the henyard, tons of it. Did you ever stop to figure, Mr. Orange Grower, what that would be worth to your orchard? You spend hundreds of dollars for commercial fertilizers, and not one of them is as good for your trees as hen manure. If I owned a grove I should feel obliged to keep a cow, a goat, a few ducks and geese and 100 hens, just for the sake of the trees. Rejuvenation of wornout soil can be accomplished in no way so quickly as by keeping stock on it. The orchardists of 30 years ago in Southern California did not realize the need of keeping stock along with their trees, and that is one reason for the great number of wornout orchards. I planted garden this morning in a chicken yard that had not been planted for a year, and oh, the richness and mellowness of it! The portable chicken pen could be used with great advantage in the orange grove. Keep your chickens in one place till the soil becomes foul, then move on. Yes, I know the fences would interfere with irrigating and cultivating, and yet I believe a little planning would smooth out the difficulties. The trees within the yard might be skipped for a month, and the water run around them. The hens would keep them cultivated, and the extra humus would make up for lack of water. This is not theory. I know from years of experience with hens and orange trees on a small place and with very dry soil that when trees are well fertilized with chicken manure and mulched with weeds and other vegetable refuse they do not need the monthly irrigation which most orchardists consider necessary.

The last time I was in Riverside I heard a mythical account of an orchardist who had given up using the cultivator and was letting his hens cultivate his grove. I tried to hunt him up, but when we finally drew up in front of his place, one glance was enough to show the regular marks of cultivator teeth about his trees. If he had ever seriously tried the hen-cultivator proposition he had evidently given it up as a bad job. Any exploitation of the hen as an orchard cultivator must be doomed to failure. She does keep down weeds and eat some noxious bugs, and she is a splendid hand at spreading manure when it has been dumped about the trees, but of these small accomplishments she



does not boast, for her business is laying eggs. Any other service is gratuitous.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pumpkins for Cows

What is the usual yield of pumpkins? When should they be planted? Due to danger of frost injury, which begins in the middle of October, can they be planted in the middle of July or first of August? Is there sale for them?—Subscriber.

Pumpkins should be planted prior to first of July if possible. With favorable season it is possible the frost might hold off till later planting is ripened. As to marketing we would surely not plant till market is arranged for. They are too bulky and not long enough keepers to make possible waiting for market. If gathered in the fall, piled, and covered with leaves, vines, or straw which protects from heavy frosts, they may keep some months, however.

Thornless Blackberry

Is the thornless blackberry a proven success in a hot climate? — Subscribers.

We have never heard of success of this plant under extreme conditions. Would be glad to hear from subscriber.

Early Feed

What is the best crop for immediate planting which will give carbohydrate feed for dairies? Want something which can harvest quickly. The pumpkins I find hard to get mature before fall. What is the best root crop which will not come to grief through frosts? — Subscriber, Riverside.

Perhaps quickest returns in matter of feed at this time would be sweet sorghum. The crop gives lusty growth and affords liberal amount of feed which may be cut daily. Sweet sorghum may be planted at once. Sudan grass is good. Pumpkins planted, say in May or June, should give you fine return before any danger of frost. There are also one or two types of "citron melon" which give immense quantity of feed and are lusty growers. One of the best pumpkins is the "Cheese" pumpkin which has done well and has given immense tonnage in nearly all sections. As to roots, perhaps the ordinary mangel-wurzel, a long red beet, gives biggest tonnage and is a most satisfactory feed. Turnips give large tonnage but influence flavor of milk when fed to dairy cows. These root crops are very hardy and may remain in the ground through the winter.

Earnings in Income Tax

Does owner of property have right to deduct wages for his own service, including the exemption, in making returns of his individual income tax? —Subscriber.

If we understand the question it is, "Does a man have the right to charge off his own wages as part of the expenses of his business?" No, even if he did charge it off it becomes a part of his own wages or income and it would still be subject to the income tax. Bear in mind that the income tax is exactly what it says; it is a tax on one's income, no matter whether it be from interest, profits of business, such as farming, salary, or wages, or any other source. Of course there are exemptions, such as the \$2000 or \$1000 for married and unmarried persons, \$200 foreeach de-

pendent child, and income from 3½ per cent liberty loan bonds, etc.

Beans—Rabbits

I notice in your two last issues your subscribers have been asking about whether rabbits will bother the different varieties of beans. I can state that I planted out 20 acres of Blackeyes last year and the rabbits did not bother much except on one corner they cleaned up about one acre. There not being any bean fields near, all the rabbits centered on my piece. If there had been more beans in that section the amount they would have damaged would have been light. I would not stand back to plant Blackeyes and I would not go to the expense to fence against the rabbits. But as to Tepary beans I have been informed that the rabbits are fond of them so I would prefer the Blackeyes.—C. E. McLaughlin.

Smyrna Figs Drop

I noted the article in the Cultivator of March 16 regarding fig culture. I have Smyrna fig trees that have thousands of young figs, but they always drop off when quite small. Can such trees be budded with capri tree buds,

and how should I proceed to secure a full crop?—Subscriber, Los Angeles.

Budding or grafting these trees would be of no value unless the fruit of the capri were pollenized by the blastophaga, or fig wasp. The method ordinarily followed by Smyrna fig growers is to plant the true Smyrna trees and at the same time plant two or three varieties of the capri fig at the rate of one capri for every 20 Smyrnas. One or more trees should be of the mamme or overwintering fig, and others should be of other types which are producing their fruits at the time the Smyrnas are setting their fruit. Then the distribution of these fruits through the orchard permits the insect to fertilize the blossoms in the fruit of the Smyrnas. In this case, if the orchard is not supplied with any capri trees, then to secure a crop while they are growing it will be necessary to purchase capri figs from some other orchardist and distribute in each one of your Smyrna trees. This question calls for too extended an answer to be properly treated in this column. We would suggest the inquirer write Fancher Creek Nurseries, Fresno, for Practical Horticulture of the Fig.

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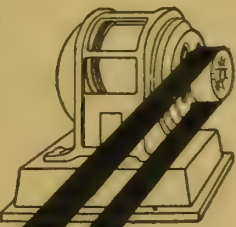
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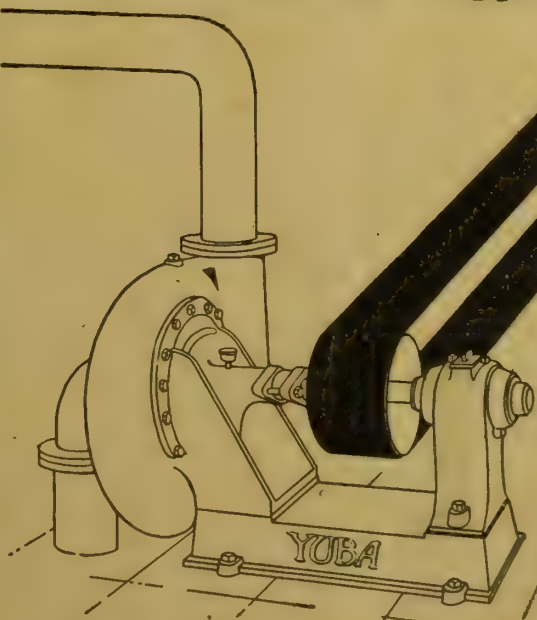
The intelligent farmer of these days understands many mechanical principles; he comprehends what the scientist has proved in the relation of leguminous plants to nitrogen in the soil; what is meant by r. p. m. and by differentials, magnetos; distillate and grease; but it seems he has no conception of the difference between TEST SPECIAL belting and all the other kinds offered to farmers, with no manufacturers' guarantee to back them.

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### Lentils

Queries often come in as to lentils. So far as we know the most extensive information published on the subject was in the California Cultivator of January 7, 1915. However, we referred the matter to Assistant Farm Adviser Hodgson of Los Angeles County, and he secured from G. W. Hendry of the state university the following:

"Lentils have been grown in California in a limited way in the vicinity of Salinas and in the Stockton delta. Their requirements are about the same as those for peas or Horse beans. It is essentially a cool weather crop and makes its best growth when planted during the fall the same as vetch. In the coast districts, however, it may be planted during March or April in rows about 20 inches apart and the seed dropped from four to six inches apart in the row. Ordinary bean machinery, including planters, cultivators and thrashers, may be used with this crop. The market is fairly staple but is a limited one."

### Dehorning Calf

Dehorning with caustic should be done when calf is very young, in fact, before it is five days of age. When not performed then it is usually deferred until the animal is two years old when there is less possibility of the horns growing out again. It is then done by controlling in chute and by use of ropes so as to stop all motion of the animal's head, then with clean sharp meat or miter saw, or one of the various types of dehorning shears or clippers, the horn is sawed or cut off one-half inch below where skin joins base of horn. Dehorning should always be done in cool weather when there are few flies about.

### SAN JOAQUIN VALLEY BEEKEEPERS' MEETINGS

The closing meetings of a series which have been of interest and helpfulness to the beekeepers of the state will be held next week at various points in the San Joaquin Valley. These meetings have been attended by members of the faculty of the University of California and by experts of the department of agriculture. As a rule they have been held in connection with meetings of farm bureaus of various counties. The dates of the six meetings to be held in the valley are:

Bakersfield/ 10 a. m. to 4 p. m.  
April 1; Visalia, 10 a. m. to 4 p. m.  
April 2; Hanford, 10 a. m. to 4 p. m.  
April 3; Fresno, 10 a. m. to 4 p. m.  
April 4; Modesto, visiting apiaries,  
April 5; Sacramento, 10:30 a. m. to 4 p. m. April 6.

### MILCH GOAT RECORDS

The milch goat is becoming more and more a factor in California production. There are thousands of them in the state and they are increasing rapidly, and if such records as have just been made by the "poor man's cow" at the University Farm increase, their number will be still greater. The university makes this report of a test which began February 26, 1917, and ended February 25, 1918, or for 365 days:

	Lbs. Milk	Pct. Fat	Lbs. Fat
February, 1917	20.7	5.40	1.12
March	255.7	4.26	10.89
April	277.6	3.31	9.19
May	281.4	3.06	8.53
June	290.5	3.10	9.01
July	290.4	3.02	8.77
August	275.4	2.87	7.90
September	233.2	3.07	7.16
October	241.1	3.28	7.91
November	217.2	3.28	7.12
December	196.7	3.46	6.80
January, 1918	197.2	3.54	6.98
February	164.4	3.67	6.03
Total	2941.5		97.41
Average		3.31	

Indian reservations will be open to pasturing of Arizona sheep, so that at least 65,000 head may be accommodated.



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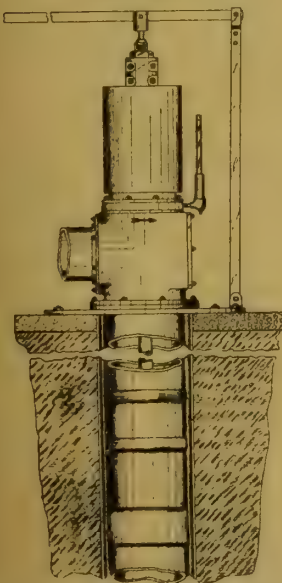
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## Household Department

### THE EASTER QUEST

I knew thou wert coming, O Lord divine;  
I felt in the sunlight a softened shine,  
And a murmur of welcome I thought I heard  
In the ripple of brooks and the chirp of bird;  
And the bursting buds and the springing grass  
Seemed to be waiting to feel thee pass;  
And the sky and the sea, and the throbbing sod,  
Pulsed and thrilled to the touch of God.

I knew thou wert coming, O Lord divine,  
To gather the world's heart up to thine,  
I knew the bonds of the rock-hewn grave  
Were riven, that, living, thy life might save.  
But, blind and wayward, I could not see  
Thou wert coming to dwell with me,  
e'eh me;  
And my heart, o'erburdened with care and sin,  
Had no fair chambers to take thee in.

Not one clean spot for thy foot to tread,  
Not one pure pillow to rest thy head:  
There was nothing to offer—no bread, no wine,  
No oil of joy in this heart of mine.  
And yet the light of thy kindly face  
Illumed for thyself a small, dark place,  
And I crept to the spot by thy smile made sweet,  
And tears came ready to wash thy feet.

Now, let me come nearer, O Lord divine;  
Make in my soul for thyself a shrine;  
Cleanse, till the desolate place shall be  
Fit for a dwelling, dear Lord, for thee.  
Rear, if thou wilt, a throne in my breast;  
Reign—I will worship and serve my guest.  
While thou art in me—and in thee I abide—  
No end can come to the Eastertide.

### THE RUSSIAN

From Milestones  
(Continued from last week.)

"We made the polls on the tap of nine. Afterwards we drove back to my car and among us, with the lantern, we got the motor running again, the girl helping efficiently. The big fellow, when we told her good night, astonished me by dropping on his knees and kissing the edge of her skirt. But I put it down to Slavic temperament and took it casually. I've learned since what Russian depth of feeling means—and tenacity of purpose. There was one more incident. When I finally drove the lads up to their village the big chap, who spoke rather good English when he spoke at all, which was seldom, invited me to have some beer. I was tired and wanted to get home, so I didn't. Then the young giant excavated in his pocket and brought out a dollar bill.

"You get beer tomorrow." And when I laughed and shoved it back he flushed. "Excuse—Mr. Sir," he said. "I make mistake." Suddenly he drew himself up—about to the tree-tops it looked, for he was huge, a magnificent lad. He tossed out his arm to me. "Some day," he stated dramatically, "I do two things. Some day I give Mr. Sir somethings more than dollar—and he will take. And—some day I marry—Miss Angel."

"You may believe I was staggered. But I simply stuck out my fist and shook his and said: 'Good. No reason on earth why a fellow with the right stuff shouldn't get anywhere. It's a free country.' And the giant drew his black brows together and remarked slowly: 'All countries—world—is to be free. War will sweep up kings—and other—rubbish. I—shall be—a man.'

"Besides his impressive build the boy had—had—" the Judge glanced at the Russian General whose eyes glowed at the fire. "The boy had a remarkable face. It was cut like a granite hill, in sweeping masses. All strength. His eyes were coals. I went home thoughtful, and the Russian boy's intense face was in my mind for days and I told myself many times that he not only would be but already was a man.

"Events quickstepped after that. I got to France within the year and, as you remember, work was ready. It was perhaps 18 months after that registration day, June 5, which we keep so rightly now as one of our sacred days, that one morning I was in a fight. Our artillery had demoralized the enemy at a point, and sent them running, and we had turned on a squadron of cavalry—old Squadron A of New York, to be exact, brought over much for such occasions. There was one machine gun left working in the Hun trenches—doing a lot of damage. Suddenly it jammed. I was commanding my company, mounted,

and I saw the chance, but also I saw a horrid mess of barbed wire. So I just rode forward a bit and jumped off my horse and ran up to the wire and started clipping, while that machine gun stayed jammed. Out of the corner of an eye I could see men rushing towards it in the German trench, and I knew I had only a moment before they got it firing again. Then as I leaned far forward to reach a bit of entanglement, my foot slipped in a puddle and as I sprawled I saw our uniform and a dead American boy's face under me and I fell headlong in his blood over him and into a bunch of wire. And couldn't get up. The wire held like the devil. I got more tied up at every pull. And my clippers had fallen from my hand and landed out of reach.

"It's good night for me," I thought and was aware of a sharp regret. To be killed because of a nasty bit of wire! I had wanted to do a lot of things yet. With that something leaped and I saw clippers flashing close by. A big man was cutting me loose, dragging me out, setting me on my feet. Then the roar of an exploding shell; the man fell—fell into the wire from which he had just saved me. There was no time to consider that; somehow I was back on my horse and leading my men—and then we had the trenches.

"The rest of that day was confusion, but we won a mile of earthworks, and at night I remembered the incident of the wire and the man who rescued me. By a miracle I found him in the field hospital. His head was bandaged, for the bit of shell had scraped his cheek and jaw, but his eyes were safe, and something in the glance out of them was familiar. Yet I didn't know him till he drew me over and whispered painfully, for it hurt him to talk:

"Yester—day I did—give Mr. Sir something more than dollar. And he did—take it."

"Then I knew the big young Russian of registration day who had tried to tip me. Bless him! I got him transferred to my command and—" the Judge hesitated a bit and glanced at his distinguished guest. One surmised embarrassment in telling the story of the General's humble compatriot.

The General rose to his feet and stood before the fire facing the handful of men. "I can continue this anecdote, from the point, that is, more easily than my friend, the Judge," spoke the General. "I was in the confidence of that countryman of mine. I know. It was so that after he had been thus slightly useful to my friend the Judge, who was the Captain McLane at that time—"

The Judge broke in with a shout of deep laughter worthy a boy of 18. "He 'slightly obliged' me by saving my life," the American threw into the Russian's smooth sentences. "I put that fact before the jury."

The four men listening laughed also, but the Russian held up a hand and went on gravely. "It was quite simple, that episode, and the man's pleasure. I knew him well. But what followed was not ordinary. The Captain McLane saw to it that the soldier had his chance. He became an officer. He went alive through the war and at the end the Captain McLane made it possible that he should be educated. His career was a gift from the Captain McLane—from my friend, the Judge, to the man who is now—" the finished sentence halted a mere second—"who is now a responsible person of Russia.

"And it is the incident of that sort, it is that incident itself which I know, which leads me to combat—" he turned with a deep bow—"the position of the Sena-torr that the great war did not make for a democracy. Gentlemen, my compatriot was a peasant, a person of ignorance, yet with a desire of fulfilling his possibilities. He had been born in social chains and tied to most sordid life, beyond hope, in old Russia. To try to shake free he had gone to America. But it was that caldron of fire, the war, which freed him, which fused his life and the life of the Captain McLane, so different in opportunity, and burned from them all trivialities, and put them, stark-naked of advantages and of drawbacks artificial, side

# 1918 Catalog

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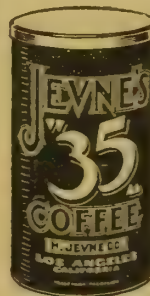


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# SHERWIN-WILLIAMS

## PRODUCTS

by side, as two lives merely. It made them—brothers. One gave and the other took as brothers without thought of false pride. They came from the furnace—men. Both. Which is democracy—a chance for a tree to grow, for a flame to burn, for a river to flow; a chance for a man to become a man and not rest a vegetable anchored to the earth as—Oh, God!—for many centuries the Russian mujiks have rested. It is that which I understand by democracy. Freedom of development for everything which wants to develop. It was the earthquake of war which broke chains, loosened dams, cleared the air for the young forests. It was war which made Russia a republic; which threw down the kingships, which joined common men and princes as comrades. God bless that liberating war! God grant that never in all centuries may this poor planet have another! God save democracy—humanity. Does the Senator yet believe that the great war retarded democracy? The Russian's brilliant, smoldering eyes swept about, inquiring.

There was a hush in the peaceful, firelit, lamplit room. And with that, as of one impulse, led by the Senator, the five men broke into handclapping. Tears stood in eyes, faces were twisted with emotion; each of these men had seen what the thing was—war; each knew what a price humanity had paid for freedom. Out of the stirring of emotion, out of the visions of trenches and charges and blood and agony and heroism and unselfishness and steadfastness, the fighting parson, he who had bent, under fire, many a day over dying men who waited his voice to help them across the border—the parson led the little company from the intense moment to commonplace.

"You haven't quite finished the story, General. The boy promised to do two things. He did the first; he gave the Judge 'something more than a dollar,' and the Judge took it—his life. But he said also he was going to marry—what did he call her? —Miss Angel. How about that?"

The Russian General, standing on the hearth rug, appeared to draw himself up suddenly with an access of dignity, and the Judge's boyish big laugh broke into the silence. "Tell them, Michael," said the Judge. "You've gone so far with the fairy story that they have a right to know the crowning glory of it. Tell them."

And suddenly the men sitting about noticed with one accord what, listening to the General's voice, they had not thought about—that the Russian was uncommonly tall—six feet four perhaps; that his face was carved in sweeping lines like a granite hillside, and that an old, long scar stretched from the vivid eyes to the mouth. The men stared, startled with a sudden simultaneous thought. The Judge, watching, smiled. Slowly the General put his hand into the breast pocket of his evening coat; slowly he drew out a case of dark leather, tooled wonderfully, set with stones. He opened the case and looked down; the strong face changed as if a breeze and sunshine passed over a mountain. He glanced up at the men waiting.

"I am no duke's brother," he said, smiling, suddenly radiant. "That is a mistake of the likeness of a name, which all the world makes. I am a born mujik of Russia. But you, sir," and he turned to the parson, "you wish an answer of 'Miss Angel,' as the big peasant boy called that lovely spirit, so far above him in that night, so far above him still, and yet, God be thanked, so close today! Yes? Then this is my answer." He held out the miniature set with jewels.

#### HOME MADE EASTER EGG DYES

Be sure to dye some Easter eggs for the children. Of course it is easy enough to use the dyes from the drug store but it is more fun to utilize the home resources and there are plenty of them. Onion skins when boiled will brown the eggs, stewed spinach or parsley will make them green, pink or red tissue paper will furnish the crimson, blueing will make various shades while the blueing with the spinach water will turn off yellow casts.

If you are planning to build a house sometime, start a scrap book now and in it put every building hint or suggestion that comes your way.

#### CHRIST IS RISEN

The eternal message of Easter is the triumph of the Spirit. Harry Lauder says that our boys in the trenches are "living outside their bodies." Stripped of all but the realities, they have come face to face with God—the Spirit is triumphant. When the great horde of Germans, flushed with victory, was turned back at the Marne by a comparatively small force of English and French, meagerly equipped and unorganized, it was a triumph of Spirit. We standing back of our fighting men, while we realize that we must bend every atom of physical energy to preparation for the conflict, must never lose sight of the greatest force of all, the power of Spirit. All our lives we have been taught that we must align ourselves on the side of righteousness against the powers of evil; now, in this greatest of all spiritual conflicts, where the forces of darkness are battling against the forces of decency, of honor and humanity, we must bring to bear our full powers. For us the chanting of the Easter hymns, the perfume of the Easter lilies, the sweet children's voices are part of a beautiful ceremony, but above all symbols of the best there is in us, the things we give ourselves to protect, the Christ risen in us.

#### RYE AND BARLEY FLOURS

Written for California Cultivator by Ruth Dougherty

Rye and barley flours have just been discovered by many of us. They are sold at the same price as wheat flour—which is not the case with some of the wheat substitutes, notably rice flour which is so delicious but has risen in price even as it has in popularity.

Rye and barley combine especially well with corn meal. Muffins made of half corn meal and half rye or half corn meal and half barley are particularly good.

If you are interested in shorthand methods of doing things try this: Light the oven; divide two tablespoons drippings in a dozen muffin rings; slip muffin pan in oven to melt shortening. Get out the mixing bowl, put flour sifter in it. Measure one cup corn meal, one cup rye flour, one tablespoon sugar, two heaping teaspoons baking powder into sifter. Now it's time to take the muffin pans from oven to let drippings cool. Sift ingredients into bowl; break in two eggs; add one and one-half cups milk (corn meal takes more liquid than does flour—ordinarily I use but one cup). Beat all together quickly with spoon; turn shortening from muffin pan into the mixture with a sliding motion that greases the pan. Beat quickly; put in muffin pans in quick oven. Muffins will be cooked through and crisp and brown in 15 to 20 minutes and are delicious. If ordinary shortening is used of course you will need to add a pinch of salt, but you will like them better made with drippings, especially if your grandfather came from south of Mason and Dixon's line. This liberal use of drippings makes it unnecessary to eat butter with the muffins. Corn meal and barley is just as good and a trifle more delicate.

Another combination that is fine is half rye and half rice flour.

#### WHEAT SAVING MORE NECESSARY

A telegraphic warning from Herbert C. Hoover that a more rigid conservation of wheat in American homes is "vitally necessary" to prevent a most "critical" shortage for exportation to the allies, has been followed by two new and drastic rules promulgated by the United States food administration for California as a measure to further reduce consumption of wheat products. Both rules are now effective throughout the state, to continue an indefinite period.

The first rule removes potatoes from the official list of wheat flour substitutes. No dealer is now permitted to sell potatoes as a substitute for wheat products. A pound of other cereal substitutes, which includes cornmeal, hominy grits, corn flour, barley flour, rolled oats, oatmeal, rice, rice flour, buckwheat flour, soya bean flour, potato and sweet potato flour and feterita flour and meals, must be sold with each pound of wheat flour. Sale of larger quantities must be in the same proportion.







## Los Angeles Market

Los Angeles, March 27, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery ..... 43  
Dairy Exchange price past week on ex-  
tras.  
March 20 21 22 23 25 26  
'18 ... 43 43 36 43½ 43½ 43  
Rcts. wk. ending Mar. 26, 262,400 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. .... 26  
Eastern Daisies ..... 28½  
Domestic Swiss ..... 37

## EGGS

Exchange quotations. Prices to re-  
tailers 2 to 4 cents higher.  
Fresh Extras ..... 39  
Pullet ..... 36  
Case Count ..... 37  
Dairy Exchange prices past week on  
fresh extras.  
March 20 21 22 23 25 26  
'18 ... 40 40 40 40 40 39  
Rcts. wk. ending Mar. 26, 4702 cases.

## POULTRY

We quote to producers:  
Food administration orders hens sold  
for producing purposes only till April 30.  
Broilers ..... 34@38  
Fryers ..... 36  
Roasters, 3 lbs. and up ..... 34  
Ducks, lb. .... 25@28  
Roosters, old ..... 18  
Turkeys ..... 31@33  
Geese, lb. .... 23

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, March  
27, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. 10.50@11.00  
Heifers, good ..... 8.00@8.50  
Cows, good ..... 8.00@8.50  
Canners ..... 4.00@5.00  
Hogs—  
Av. 125 lbs. .... 14.75  
Av. 150 lbs. .... 15.75  
Av. 175-225 lbs. .... 16.75  
Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent.

Prime wethers ..... 12.00  
Ewes ..... 10.00  
Lambs ..... 13.50@14.00  
Yearlings ..... 10.50@11.00

## POTATOES

Wholesale selling price:  
Oregon Early Rose ..... 1.30@1.35  
Northern Burbank, cwt ..... 1.35@1.40  
Idaho Russets ..... 1.30@1.35  
Sweet, sk. .... 4.50@4.75

## ONIONS

Wholesale selling price, cwt.:  
Brown ..... 1.10  
White ..... 3.00  
Garlic ..... 6

## VEGETABLES

Wholesale prices:  
Artichokes, doz. .... 90@1.15  
Jerusalem, lb. .... 7½  
Asparagus, green, 17½@20; white ..... 15  
Beets, sk. .... 2.25  
Brussels Sprouts, lb. .... 13  
Cabbage, lb., 2½; sk. .... 1.65  
Red, lb. .... 5  
Carrots, doz. .... 30  
Cauliflower, doz. .... 85  
Celery, doz. .... 70  
Cucumbers—Hothouse, doz. .... 75@2.50  
Egg Plant, lb. .... 25  
Horseradish, lb. .... 15  
Lettuce, doz. .... 25  
Leeks ..... 20  
Mint, doz. .... 40  
Onions, green, doz. .... 25  
Peas, Tel., lb. .... 6½@7  
Peppers, Chili, lb. .... 30  
Parsnips, doz. .... 30  
Parsley, doz. .... 35  
Radish, doz. .... 20  
Rhubarb—Strawberry ..... 1.50  
Romaine, doz. .... 40  
Spinach, doz. .... 30  
Squash—Crockneck ..... 70@75  
Hubbard, lb. .... 8½  
Summer, cr. .... 3.00  
Tomatoes, lug ..... 2.25  
Turnips, doz. .... 30  
Watercress, doz. .... 35@40

## FRUITS

Wholesale prices:  
Apples—Bellflowers ..... 1.75  
King David ..... 2.00@2.25  
W. W. Pearmain ..... 1.65@2.25  
Spitzenberg ..... 2.50@3.00  
Y. Newton ..... 1.65@2.25  
Bananas, lb. .... 5½@5¾  
Loquats, lb. .... 11  
Pears, Winter Nellis, lug ..... 2.25

## CITRUS

Lemons, 5.00; packed, 5.75; loose ..... 4.50  
Juice ..... 3.50  
Orange—Navels, bx. .... 4.25@8.00  
Grapefruit ..... 3.25  
Limes, basket ..... 75  
Tangerines, lug ..... 2.00

## DRIED FRUITS

These are not prices to producers but  
prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, ½c less.  
Apples, evaporated, 50s, 16; extra ch.,  
16½; apricots, ch., 16½; extra ch., 17½;  
fy., 18½; pears, 12; peaches, choice, 12;  
fy., 12½; citron, 30 lb.; lemon peel, 25;  
orange peel, 25; prunes, 20-30s, 17; 30-40s,  
14; 40-50s, 13½; 50-60s, 13; 60-70s, 12½;  
70-80s, 11.  
Figs—Callmyrns, bx., 2.25; black, 25-lb.  
bx., 3.00; white, 3.00; 10-lb. Adriatic layer  
figs, 1.75.

## NUTS

Almonds—Not growers' prices but prices  
of wholesaler to retailer.  
I. X. L. .... 25  
N. P. U. .... 23  
Nonp. .... 26  
Peanuts, raw ..... 20@21  
Pecans, lb. .... 17  
Walnuts—Cal. Walnut Growers' Associ-  
ation named prices Oct. 1:  
No. 1 Soft Shell, lb. .... 20  
No. 2 Soft Shell, lb. .... 16  
Budded, Diamond Brand ..... 24  
Budded, Standard Brand, (same size  
as No. 1 Soft Shell) ..... 21  
Prices delivered in East 1½c higher.

## RICE

See San Francisco rice market.

## BEANS

These are prices made by wholesaler to  
retailer.  
Lady Washington ..... 14.50  
Limas ..... 14.50  
Pinks ..... 9.25  
Manchurian Reds ..... 9.25  
Baby Mex. .... 9.00  
Garbanzos ..... 10.00  
Small Whites ..... 14.50  
Blackeyes ..... 9.50  
Tepary ..... 10.00@11.00  
Lentils ..... 25.00

## HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:

The continued rains have caused a  
drop in all grades of hay of from \$1.00 to  
\$2.00. The supply is said to be sufficient  
to carry till new crop comes in.  
Tame Oat ..... 28.00@30.00  
Volunteer Oat ..... 18.00@18.00  
Wheat ..... 25.00@28.00  
Barley ..... 26.00@29.00  
Alfalfa ..... 27.00@29.00

The Alfalfa Growers' Association of  
Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where  
the \$1.50 freight rate applies, and \$29.00  
f. o. b. where the \$2.50 freight rate ap-  
plies.

## GRAIN AND FEEDSTUFFS

No quotations yet made since the re-  
cent withdrawal of the card. Within  
the next two or three days a new card  
will be made and it is hoped that grain  
and feeds will return to normal.

## San Francisco Markets

San Francisco, March 26, 1918.

## BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:

Two-pound squares, parchment wrap-  
per, ½c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.

Dairy Exchange quotations, lb.:  
Extras ..... 46½  
Prices on butter are practically 15  
cents above year ago this date.  
Prices Extras past week and year ago:  
March 19 20 21 22 23 25  
'18 ... 45½ 45½ 46 46 46½ 46½  
'17 ... 34½ 35 36 36½ 36  
Rcts. wk. ending Mar. 25, 584,100 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal. Flats; 26; Y. Am. .... 27½  
Jack cheese, full cream ..... 26@27  
Half skim ..... 14@17

## EGGS

Extras ..... 39  
Firsts ..... 36½  
Selected Pullets ..... 37  
Firsts ..... 35  
Prices Extra past wk. and yr ago:  
March 19 20 21 22 23 25  
'18 ... 41 40½ 39½ 39½ 39 39  
'17 ... 26½ 25½ 27 27 27  
Rcts. wk. ending Mar. 25, 17,568 cases.

## POULTRY

We quote from producers, lb.:  
The food administration forbids sale of  
hens for meat until after April 30.  
Roosters ..... 29@40  
Broilers—1 to 1½ lbs., 48@50; 1½ to 2  
lbs., 50@55; 2 to 3 lbs., 55@57; 3 to 4  
lbs., 40@45.  
Squabs, doz. .... 3.50@5.00  
Ducks ..... 25@30  
Geese ..... 27@30  
Belgian Hares, live, lb. .... 22@23  
Turkeys, dr., 36@37; live ..... 28@30

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾c  
more.  
Steers, lb., 9½@11½; thin, 6½@8½;  
cows and heifers, 8½@9½; seconds, 7½@  
8½; calves, 8@10½.  
Sheep—Lb. gross weight: Fat, unshorn  
wethers, 14@15; ewes, 12@12½; lambs,  
yearlings, 16@16½; shorn sheep, 1¼@2  
less.  
Hogs—Hard grain-fed, weighing 100 to

140 lbs., 15; 140 to 300 lbs., 16½; 300 to  
400 lbs., 16.

## POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks ..... 1.10@1.50  
River ..... .99@1.30  
Yakima Gems ..... 1.40@1.50  
Sweets ..... 5.00@7.00  
Seed—Wholesale, per 100 lbs.: Early  
Rose, British Queen, American Wonder,  
1.50@2.00; Burbank, low top, 1.50@1.75;  
high top, 1.50@1.75; Garnet Chile, 2.75@  
3.00; White Rose, 2.00@2.25; Early Jack-  
son, 2.50@3.00; inferior and off stocks at  
lower prices.

## ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown ..... .80@1.00  
Bermudas ..... 2.00@3.00  
Garlic, lb. .... 3@3½

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 35@50  
Asparagus, lb. .... 7@14  
Beets, sk. .... 1.25@1.35  
Brussel Sprouts, lb. .... 5@7  
Carrots, sk. .... 85@1.00  
Cauliflower, doz. .... 30@40  
Celery, Delta, cr. .... 1.00@2.25  
Cucumbers, bx. .... 2.00@2.75  
Egg Plant, lb. .... 10@15  
Endive, lb. .... 25@30  
Lettuce, cr., Southern, iced ..... 1.15@1.25  
Uniced ..... 75@90  
Onions, green, bx. .... 65@75  
Parsnips, sk. .... 85@1.00  
Peas, lb. .... 5@10  
Peppers, Bell, lb., 25@30; Chile ..... 12½@15  
Pumpkins, sk. .... 85@1.00

## Ten Million Dollars

Congress, to increase next  
year's crops, has made this  
appropriation to bring Nitrate  
of Soda, at cost, from Chile.  
"What Nitrate Has Done in  
the Farmer's Own Hands"  
will be sent to you free if  
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develop into strong  
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proposition for unoccupied terri-  
tory—write us.



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out of Golden Model 2nd 77339; out of Golden Model 53675. She is the dam of  
Kings Col. Again, that sold to Dave Bosinger for \$1000. She herself cost us  
\$1050 landed on our farm.

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H. P. Slocum and Sons  
Willows, California

## DUROC JERSEYS

## Hereford Cattle Sale

by the

Pacific Coast Hereford Cattle Breeders Association

University Farm, Davis, Cal. Wednesday, April 10, 1918

This offering will be made up of about 45 females and 40 bulls. All Western  
bred. Consignors to the sale: Cazier & Sons, Wells, Nevada; H. H. Gable,  
Esparto; W. J. Bemmerly, Woodland; D. O. Lively, Mayfield; Dean Duke,  
Likely; Simon Newman Co., Newman, California.  
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For Price and Descriptive Matter Address  
BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco



Rhubarb, bx. ....1.75@2.25  
Squash, Cream, lug ....75@1.00  
Tomatoes .....75@2.25  
Turnips, sk. ....75

FRESH FRUITS

Apples — Spitzenburg, 2.00@2.50; Red 1.25@1.50; Newton Pippins, 1.35@1.75.  
Pears — Winter Nellis bx., 2.00@2.25; winter pears, lug, 1.50@1.75.  
Bananas, Hawaiian, bunch ....2.00@3.00  
Strawberries, cr. ....2.00@2.50  
Citrus Fruits—Lemons, bx. according to size, fy., 3.00@6.00; lemonettes, 2.00@3.00; grapefruit, fy., 2.50@3.25; ch., 2.00@2.50. Oranges—Bx., navel, fy., 4.50@7.50; ch., 4.00@6.00; mandarins and tangerines, per half orange box, 2.25@3.00; cr., 1.50@1.75.

DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, bulk basis, standard, 10; ch. 10½; extra ch., 11; fy., 11½. 40s, 8½; 30s, 9½.  
Apricots—Bulk basis: Standard, 13½; ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorparkes, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8; 40s, 8½; 30s, 9½.  
Apples—In 50-lb. bxs., lb.: Fy., 16; extra ch., 15; ch., 15.  
Pears — Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 16-oz. cartons, \$4.20 for 48s and \$3.15 for 36s; fy., \$4.20 for 48s and \$3.15 for 36s; do, 12-oz. 45 to 55; ch., 5.25; ch., 16-oz. cartons, \$4.00 for 36s; do, 12-oz. cartons, 45s to 55, \$3.10. In bulk: Sun Maid, 1.75; fy., 1.90; ch., 1.75.  
Sulphur-bleached Thompson, extra fy., 5.37½; fy, 5.12½; ch., 4.87½; soda-bleached, 4.75.  
Loose: One-crown, 4.15; 2-crown, 3.40; 3-crown, 3.65; 4-crown, 3.20.

NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. X. L., 19½; Na Plus, 18½; Drakes, 16; hard shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts, Va. ....15  
Pecans, lb. ....19@20  
Pine Nuts ....20@22

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....13.90@14.10  
Bayous .....9.25@9.50  
Small Whites .....Nominal  
Large Whites .....Nominal  
Mexican Reds .....9.00@9.25  
Blackeyes .....8.90@9.00  
Pinks .....8.40  
Red Kidney .....Nominal  
Cranberry .....Nominal  
Teparies .....10.50@11.00

RICE

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

HAY

Under date of March 23, Scott, Magner & Miller says:  
Receipts for the past week 1059 tons. Unless conditions change and cars are available for shipment not only will receipts become lighter but it will be a question whether it will be possible for holders in some sections to move their hay to market prior to the advent of the new crop. Trade is very dull and inactive in the Bay cities and dealers show very little inclination to purchase much hay at this time at the prices asked by holders. This no doubt is caused by the recent general rains which we have had of late and the prospects of good hay crops and feed in general. With the warm weather that we have had following the rain, grass of all kinds is growing very rapidly and before we know it the first cutting of alfalfa will probably commence on the river. Reports at present are to the effect that cutting will commence within a month. The natural result of this is that considerable alfalfa has been offered during the week at lower prices than have prevailed for some time.  
Washington, Idaho and Nevada.  
Fancy Wheat Hay  
(light 5 wire bale) .....30.00@31.00  
No. 1 Wheat or Wheat and Oat Hay .....28.50@30.00  
No. 2 Wheat or Wheat and Oat Hay .....25.00@28.00  
Choice Tame Oat Hay .....28.00@30.00  
Other Tame Oat Hay .....25.00@27.00  
Wild Oat Hay .....24.00@26.00  
Barley Hay .....22.00@24.00  
Alfalfa .....24.00@26.00  
Stock Hay .....18.00@20.00  
No. 1 Barley Straw .....60@90

GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

SEEDS

Prices in round lots, lb.:  
Millet, recleaned .....4½@5½  
Alfalfa, lb. ....20@21  
Flax .....6½@7  
Hemp .....4½@5½  
Rape .....2½@3

Citrus Fruit Market

Los Angeles, March 27, 1918.

The orange market for the past week has been a record breaker, seedlings bringing almost as high prices as Navels at all auctions. As high as \$9.65 has been paid for 250 Navels. The chief factor in the big prices has been the restricted shipments owing to heavy rains in the orange districts holding back picking. This condition is now changed and shipments are going freely with ex-

pectation of lower prices. A few sales were noted of decayed fruit around \$2.00 but practically all oranges are now moving under refrigeration, thus lessening possibility of decay. A very few shipments are being made of Valencia's.  
With lemons bringing up to \$9.00 all available fruit is being rushed to the Eastern markets to get a share of the big prices. Practically no fruit is being stored for spring and summer market.

Shipments

Shipments of oranges from Southern California to date since November 1, 1917: 5540 cars; lemons, 1520; total, 7060. To same date last season: Oranges, 13,911; lemons, 2501; total, 16,412. From Central California to date: Oranges, 1901; lemons, 113; total, 2014. To same date last season: Oranges, 4047; lemons, 153; total, 4200. From Northern California to date: Oranges, 202; lemons, 843.

AT THE AUCTIONS

March 20  
New York: 10 cars oranges, 3 lem. Nav. 5.30-7.55, lem. 8.00-8.45. Seed. 7.00.  
Cincinnati: 2 lem, 3.40-5.60.  
Cleveland: 4 Nav. 4.05-6.95.  
St. Louis: 1 Nav., 1 mix oranges. Nav. 5.40-6.05, Seed. 4.15-5.55, sweets 5.45.  
Philadelphia: 1 Nav. 6.50, 1 lem. 7.85-8.25.  
Boston: 4 Nav. 5.50-7.50, 2 lem. 5.45-6.20.  
Pittsburg: 4 cars. Nav. 2.85-5.70, seed. 6.70-7.05, lem. 5.45-6.20.  
March 21  
New York: 9 Nav. 4.35-8.30, 1 lem, 8.85-9.05.  
Boston: 4 cars Nav. 4.95-7.65, lem. 5.95-6.45.  
Philadelphia: 1 lem. 8.10-9.05.  
March 22  
New York: 8 Nav. 5.15-8.40, lem. 7.30-8.65.  
St. Louis: 4 cars. Nav. 5.90-6.00, seed. 5.50-6.80, Jaf. 6.25, lem. 5.10-6.65.  
Pittsburg: Nav. 1.85-6.90, lem. 4.50.  
Cleveland: 2 Nav. 5.30-6.55.  
Boston: 1 Nav. 6.35-7.15, 2 lem. 6.30-6.55.  
Philadelphia: 2 oranges. Nav. 6.70-7.10, seed 3.85-4.10, lem. 8.70-9.05.  
March 25  
New York: 16 Nav. 5.65-8.40, lem. 7.35-8.40.  
Boston: 10 cars Nav. 5.50-8.30, seed 6.70-7.10, bloods 7.20-7.40, Jaf. 6.80, lem. 5.60-6.55.  
Philadelphia: 4 cars. Nav. 6.35-6.50, seed 5.65-6.55, lem. 5.50-7.90.  
Pittsburg: 4 Nav. 5.30-7.25.  
St. Louis: 1 Nav. 1 mix oranges. Nav. 5.40-6.30, seed 6.40-6.70, bloods 6.30-6.80.  
Cleveland: 2 Nav. 6.20-7.45, 1 seed 6.25-6.70, 1 lem. 4.40-6.30.  
Cincinnati: 1 Nav. 5.00-7.05, 1 lem. 5.15-6.55.  
March 26  
New York: 15 oranges, 6 lem. Nav. 4.10-7.40, seed 6.00, sweets 3.00, bloods 3.50, lem. 6.50-7.75.  
Boston: 7 cars. Nav. 4.25-7.80, sweets 3.65-6.25, lem. 5.50-6.15.  
Philadelphia: 1 Nav. 6.60-6.90, 1 lem. 6.80-7.30.

MARKET NOTES

The senate has passed by vote of 49 to 18 the agricultural bill fixing \$2.50 base price on 1918 wheat. The bill provides that the guaranteed prices for the 1918 crop shall be based on No. 2 Northern wheat or its equivalent, instead of No. 1 as under the existing law. The price is not dependent on action of the president, but "is hereby made absolute and binding until May 1, 1919."  
Imperial County cantaloupe fields are showing vines two and three feet long and liberal bloom ready for an early crop.  
Thousands of acres of milo are already being planted in the Imperial Valley.  
The war department is buying liberally of Imperial Valley hay. Holtville alone has shipped over 100 cars, and one dealer at the north end of the valley has contract for 800 cars.  
Thousands of articles not needed in warfare and not food are being denied shipment from American ports. It is possible that coffee may be placed on this list.  
It is now announced to California tomato growers that the order making the \$15 price named by the food administration has been revoked.  
California potatoes are being moved in immense quantities, especially since the recent reduction in price.  
Oranges at Pacific Coast points are commanding around \$7.00 per box, and dealers are threatening reduction of orders at such prices. They maintain that \$5.00 should be the limit.

PARTIAL LIST OF FRUIT SHIPMENTS  
From post card reports to the bureau of markets, United States department of agriculture, Miss Hoey makes report of the following shipments from California for the week ending March 25: Apples, 8 cars; asparagus, 1; artichokes, 8; broccoli, 1; cabbage, 31; carrots, 1; cauliflower, 82; celery, 23; peas, 2; dried apples, 6; dried beans, 15; dried figs, 1; dried peaches, 14; dried peas, 1; dried prunes, 18; lettuce, 104; mixed vegetables, 110; mixed fruit, 4; mixed fruit and vegetables, 11; mixed dried fruit, 4; onions, 2; potatoes, 54; turnips, 1; rhubarb, 1; raisins, 37; Mexican tomatoes into state, 19.

WEATHER CONDITIONS

San Francisco, Cal., March 23, 1918.

Stations	Wk. Season.	Norm.	Max.	Min.
Eureka	1.93	21.45	38.89	64
Red Bluff	1.14	10.19	20.40	70
Sacramento	.68	7.93	16.21	68
San Francisco	.69	10.18	18.86	66
San Jose	1.86	8.85	14.01	74
Fresno	1.62	9.56	7.88	72
San Luis Obispo	2.78	18.46	17.08	76
Los Angeles	.86	13.14	13.36	86
San Diego	1.16	7.84	8.49	80

The seventh annual irrigation congress of Oregon recently met and elected Jay H. Upton, president.



# The BEE, a Patriotic Worker

The collection of sweets from blossoms and ripened fruits is carried on by the industrious bee without complaining or wages, and why shouldn't he be given all the comforts and conveniences possible? The

## MILLER HIVES

are models of convenience and furnish an ideal comfortable home for the industrious bee. Miller Hives are made of clear, straight grained material and supplied in either Redwood or Cedar; dove tailed and ready to put together. The honey frames are made from fragrant white pine, accurate and smooth.

Send for Free Catalog.

Everything in Bee Supplies.

**Miller Box Manufacturing Co.**  
201 N. Ave. 18, Los Angeles, Cal

## Mission and Manzanillo

# Olive Trees at Half Price

Because we wish to completely dispose of our Nursery Stock, we offer at this time to sell as specified below, three year old Olive Trees absolutely unexcelled in California, for pedigree, size and condition, at the following unprecedented prices:

Trees caliper ¾ to 1 in. in Diam. 25c each.  
Trees caliper 1 to 1¼ in. in Diam. 30c each.  
Trees caliper 1¼ to 1½ in. in Diam. 35c each.  
Trees caliper 1½ to 1¾ in. in Diam. 40c each.  
Trees caliper 1¾ to 2 in. in Diam. 45c each.

On trees less than ¾ inches in diameter we will make a special low figure.

TERMS: On lots of not less than 2,000 trees, 5 per cent off of above prices. On lots of not less than 5,000 trees, 10 per cent off of stated prices. All prices f.o.b. cars Ontario, California.

Important Notice: Orders filled only on basis of half Missions and half Manzanillos. No order handled for less than 500 trees.

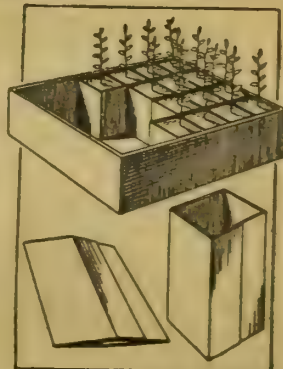
**Los Angeles Olive Growers Association**  
522 Higgins Building, Los Angeles, Cal.

## Perforated Tree Protectors

Why use anything but a PERFORATED PROTECTOR, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small LATH HOUSE ABOUT EACH TREE. Protects from Squirrels—Rabbits—Gophers—Hot Sun—Sand Storms — Barking in Cultivation, etc.  
We make a number of kinds. TELL US YOUR PEST, and we will tell you what kind to buy. Get our prices. We can save you money.

### COLLAPSIBLE PLANTING POTS

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.  
Write for samples and prices of both Pots and Protectors. State which you are interested in.  
THE EXPAN CO., 935 E. Central Ave., Redlands, Cal.



Corys

# THORNLESS Blackberry

Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

**Ekstein Nurseries**

Modesto

California



## THE GREATEST DAIRY COW IN CALIFORNIA



is a title that may well be claimed by MISS VALLEY MEAD DE KOL WALKER, who has added to her many accomplishments the winning of the California Dairy Competition over all breeds, with an actual production of 819.42 pounds butter fat in 10 months, and giving her a total credit of 966.9 pounds butterfat with age handicap as she is only a junior three year old. Keep your eye on her son

### King Korndyke Pontiac 20th

our junior herd sire, for whom we paid \$6500 in the Guaranty Sale. You will want to buy one of his sons one of these days, and in the meantime visit our herd whenever convenient and see the great

cows and heifers with which he is being mated. Our senior herd sire, PRINCE RIVERSIDE WALKER, is by the same sire as Miss Valley Mead De Kol Walker, and is out of the same dam as Aaglie Acme of Riverside 2nd, 1331.77 pounds butter in one year, the world's official record. A young son of PRINCE RIVERSIDE WALKER will introduce this wonderful combination of breeding into your herd. Only a few on hand and they are priced so reasonably that they will not remain unsold very long.

Our Entire Herd is Tuberculin Tested

## Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

### "Whenever I Find Korndyke De Kol's Prince in a Pedigree My Respect for That Pedigree is Always Increased"

That statement was made publicly by Mr. A. A. Hartshorn, Hamilton, New York, formerly President of the Holstein-Friesian Association of America, during the last October Sale at Sacramento, which he attended.

Mr. Hartshorn is noted for his accomplishments as a Holstein breeder, and one of the greatest factors in his success has been the way in which he sticks close to the practice of selecting individuals and families that transmit uniformly high production.

### Prince Alcartra Korndyke



our senior herd sire, is a son of Korndyke Queen De Kol's Prince, and his dam is Tilly Alcartra, 40.78 pounds butter in seven days after making a total of 123,351.3 pounds milk and 4819.12 pounds butter in five consecutive years.

PRINCE ALCARTRA KORNDYKE is breeding on. His first five daughters to complete yearly tests as two year olds average 15,333 pounds milk and 675.92 pounds butter.

In a son of PRINCE ALCARTRA KORNDYKE out of one of our good cows you get the greatest certainty of the power to transmit high production and the type that should go with it. Let us price one of his sons to you now before prices advance as his daughters continue to make further high records.

The J. S. Gibson Co.  
Williams, Cal.

## Santa Anita Rancho Anoakia Breeding Farm Registered Holsteins

### Our Junior Herd Sire, Prince Walker Cornucopia

is now in active service and will be bred to a large number of high class cows and heifers during the coming year.

His sire is PRINCE GELSCHER WALKER, whose daughters have commanded the attention of the entire Holstein breeding world through their tremendous records.

His dam is ALBA SADIE CORNUCOPIA CREETIA, 34.14 pounds butter in seven days, and she is by a son of Sadie Vale Concordia, 30.64 pounds butter in seven days, who is the dam of Sadie Vale Concordia 4th, 41.06 pounds butter in seven days, and she in turn is the dam of the sensational sire King Korndyke Sadie Vale and Sadie Vale Concordia 4th Pietje, 38.43 pounds butter in seven days.

This combination of breeding we consider of exceptional promise and an outstanding offspring should result from the splendid females with which he is being mated.

At present we are sold down to a limited number of young bulls, sons of our senior sire MERCI LAD KORNDYKE BURKE, whose dam made 31,034.1 pounds milk and 1201.06 pounds butter in one year. They are priced moderately. Inquiries or orders by mail will receive prompt attention.

Santa Anita Rancho, Santa Anita Cal.

W. H. Taylor Supt.  
Anita M. Baldwin, Owner

Patently waiting for—

## RED HORN CALF MEAL

WITH DRIED BUTTERMILK

### GLOBE MILLS

Los Angeles Colton San Diego

## BUY MYERS

PUMPS—ALL KINDS  
HAY AND GRAIN  
UNLOADING TOOLS

MYERS STAYON AND TUBULAR DOOR HANGERS AND TRACKS  
FROM YOUR DEALER OR IF MORE CONVENIENT  
WRITE US.—ATTRACTIVE BOOKLET ON REQUEST.

F.E. MYERS & BRO. No. 1361 ORANGE ST. ASHLAND, OHIO.

## Annual Meeting Orland Jersey Cattle Club

Written for California Cultivator By C. A. Briggs

The visitor in the "Land of Orland" always gets a new vision of great possibilities. All the residents are, compared with other sections of the state, "new comers," see things in bright colors, never wear gray on their hats or have "fog on the brain." They say as one, "We can do it," and then—do it. That should be the trade mark motto of the bright little city and the thriving surrounding country. They have decided to put the Jersey cow on the Orland map, more of 'em than there are in Jersey, and our little side bet is that they will realize this ambition. A year ago a few men and women organized the club. On this their first anniversary they filled a hall and crowded a banquet table loaded with good things prepared by the ladies of the club strictly a-la-Hoover. Everybody enjoyed it. Dr. Hand, the new president, made a delightful toastmaster. J. J. Flaherty of the First National Bank told of the

bank's liberal policy toward loaning money on registered Jersey cows, Chris Myre, manager of the Orland Cheese and Butter Company, in his remarks stated that they produced 713,000 pounds of butter during 1917, paying out for it the tidy sum of \$258,000. E. A. Kirk, secretary of the Glenn County fair which is held in Orland, told of the progress of his work and stated that 103 Jerseys were shown last year and predicted twice that number this year. The leading speaker of the evening was Guy H. Miller, of Modesto, acting as the representative of the American Jersey Cattle Club. He gave a most interesting and valuable talk on feeding rations and handling of Jersey cows on yearly tests.

The club officers elected for next year are Dr. H. W. Hand, president; W. C. Whitsett, vice president; Mrs. D. F. Nickell, secretary; A. J. Morey, treasurer; W. T. Hollinshead, member of the board of directors.

## The Three Individual Holstein Winners

As might be expected the three registered Holstein cows winning the three individual prizes in the California Dairy Competition are all remarkable cows.

First place went by a wide margin to the great heifer, Miss Valley Mead De Kol Walker, with an actual production of 819.42 pounds of butter fat in ten months, and with the credit she received for age, as she is only a junior three year old, she was credited in the competition with 966.92 pounds fat. The breeding and performance of this heifer are too well known to

and in the competition made 764.94 pounds butter fat in ten months. In estimating the record of this cow it must be taken into consideration that she was never before run on test, and it is confidently expected that she is capable of very much greater production. She was bought in the Guaranty Sale by Toyon Farm Association, San Jose, for \$2250.

The winner of third place, Abbie De Kol of East Bank 2nd, is one of the great Holstein cows of California, and a cow whose accomplishments have not received the acknowledgement due them up to the present time. She was bought as a calf by H. E. Cornwell, Modesto, was developed by him, and in his hands made official records of 26.50 pounds butter from 524 pounds milk in seven days. In the previous official year, 1916-1917, she made 14,171.8 pounds milk and 635.63 pounds butter in ten months on semi-official test as a junior four year old, and won first prize in that class in the prize list of the Holstein-Friesian Association of America, hers being the highest record of the year. She entered the California Dairy Competition in the hands of Mr. Cornwell but was sold in his sale last spring to A. M. Bibens, Modesto, in whose hands she completed her record, 656.61 pounds butter fat in ten months. This cow is unquestionably capable of much greater production both in short and long time work. She is a remarkably good individual and an exceptional breeding cow. Mr. Cornwell still owns a 14 months old son of hers that is a fine straight individual, and his son Homer Cornwell owns a splendid two year old daughter of hers that is just now fresh and one of the most promising heifers the writer has come across. Abbie dropped a beautiful heifer calf by Prince Hiske Walker after going into Mr. Bibens' herd and this heifer was recently sold to G. W. Shirk, Modesto, at a price that went a long way toward covering the \$725 which Mr. Bibens paid for the cow.



A Great Cow

Abbie De Kol of East Bank 2nd, winner of third prize in California Dairy Competition. Owned by A. M. Bibens, Modesto.

require repetition here, as she is widely known as the holder of two world's records and as the dam of the \$6500 bull, King Korndyke Pontiac 20th, bought by W. J. Higdon, Tulare, in the Guaranty Sale. It may perhaps not be generally known however, that this heifer made her great record under considerable handicap, for along in the middle of her test, in extremely hot weather, she was shipped a distance of nearly 500 miles, falling off very greatly in production as a result, although she finally got back into her normal stride.

The second place cow, Jennie Terzool Hicks 4th, is rated as one of the great producing cows of the state. At the beginning of her lactation period she made official records of 32.71 pounds butter from 600.30 pounds milk

## Sir Veeman Hengerveld Now Has 16 30-Pound Daughters

Sir Veeman Hengerveld has broken the tie that existed for second place among Holstein sires for daughters with official records of 30 or more pounds of butter in seven days, and now with 16 to his credit he is exceeded in number of 30 pound daughters only by King of the Pontiacs. The latest 30 pound daughter for Sir Veeman Hengerveld is S. V. H. Ida, who is still on test. In a letter to C. L. Hughes, sales manager of California Breeders' Sales and Pedigree Company, W. D. Robens, Poland, New York, who owns Sir Veeman Hengerveld and S. V. H. Ida, states that the latter has to her credit 32.47 pounds butter in seven days as a junior four

year old. This great heifer is full sister to Sir Veeman Korndyke Pontiac, who heads R. F. Guerin's herd of registered Holsteins at Visalia, and who will be sold in Mr. Guerin's sale on April 4.

### THE AMATEUR FARMER

"I hear you are thinking of buying a farm."

"That's my intention," said the city man with a complacent air.

"Well, don't forget the importance of silos."

"Trust me for that, sir. By the way—er—do these things consume much gasoline?"—Birmingham Age-Herald.



# The California Polytechnic School

San Luis Obispo, Cal.

Offers

## For Sale

the Following Stallions:

**The Clydesdale Stallion,  
Chief Guardsman, 18756**

Grand Champion in both open and State classes and winner of first premium in both classes, at State Fair, Sacramento, Cal., September, 1917.

**The Percheron Stallions:**

**Master, 122755  
School Boy, 117687  
Director, 117686**

and one unregistered stallion, foaled April, 1916.

The first three Percherons were exhibited at the 1917 State Fair, receiving five ribbons—Reserve Champion, First, Second, Third and one Third Premium Award.

To any one purchasing the unregistered stallion the opportunity will be offered for selecting such name as may be desired.

The above stock is second to none and an excellent opportunity is afforded for securing first-class breeders at reasonable prices.

This School now has more studs than it has use for in its course of instruction and for breeding purposes and for that reason the above are offered for sale.

Correspondence and inquiries solicited.

**California Polytechnic School**  
A State School of Agriculture, Mechanics and Household Arts.  
San Luis Obispo, Cal.

## Official Testing Under Way at Westlawn Farms

Observers of Holstein development in California have long been of the opinion that when official testing got under way at Westlawn Farms, owned by H. E. Vogel, Fresno, there would be new chapters written in the splendid history being made by the black and white breed in this state.

In his selections for foundation animals Mr. Vogel has become noted as an exceptionally good judge of individuals, which accounts for the very high average type of his herd, and his selection of blood lines has been no less noteworthy, which promises well for the future development of the herd.

It is not then entirely surprising to have news of a 30 pound cow as about the first gun in the official record advance at Westlawn. The honor falls to the senior four year old, Betsy Lamb-Prilly, who has completed official records of 647.4 pounds milk and 31.37 pounds butter in seven days, 2870.2 pounds milk and 121.43 pounds

butter in 30 days. She is a beautiful individual, as will be noted from her picture elsewhere in this issue, and comes of famous breeding. Her sire is a grandson of Beauty Pietertje Butter King, who is also the grandsire of Prince Gelsche Walker, and he is out of a granddaughter of Joe Gelsche De Kol Burke, the great son of the famous foundation cow Prilly. Her dam is a granddaughter of Admiral Walker Pietertje, whose 57 A. R. O. daughters have splendid short time and yearly records and whose blood is closely interwoven in the great producing fabric of the Holstein breed.

Another nice record recently completed at Westlawn was that of the senior three year old, Theta De Kol of Linwood, who has made 25.67 pounds butter from 523.1 pounds milk. She is sired by Dutchland Hengerveld Sir Gladi, grandson of the famous cow Changeling, and is out of a double granddaughter of Ignaro De Kol, the leading sire of the breed in respect to combined milk and butter records of his daughters on yearly test.

## The Use of Lambing Sheds

**W**HILE this has been a mild winter and lambing in general has been above normal, there is considerable interest in the use and practicality of a shed. The division of animal husbandry at the University Farm at Davis is receiving many requests for Circular 188 regarding lambing sheds.

No doubt many sections are not adapted to the use of sheds. On the other hand where the storms frequently occur and little natural protection is afforded, some shelter would be found very profitable. Sheepmen that have lambled out in the open for many years are reluctant about adopting new methods, but those that have used sheds during the last few years find their losses at lambing considerably reduced.

There are many types of shelter, and prevailing conditions largely determine the most practical shed for a given locality. The shed alone is not sufficient. The owner must attend to every detail to be successful.

The shed must furnish ample room for the number of ewes sheltered. Crowding ewes that are lambing or about to lamb is certain to result in loss. A shed or barn 80x80 will accommodate about 600 ewes. By allowing ample room the ewes that are lambing during the night will usually go quietly into a corner by themselves. The next morning when the gate is opened the ewes will slowly move out, and those having just lambled will oftentimes stay behind in the barn.

The barn or shed should be provided with a number of individual pens (3x3) for a ewe with twins or with a weak lamb, and the barn should be so constructed as to admit of further partitioning for ewes and lambs as required.

During the wet weather it is important to have the shed well bedded with straw or it will become very filthy. The sheep track in more or less mud, and when the fleeces are water soaked the bedding soon becomes wet.

In addition to the shed it is very helpful to be able to hold the ewes with young lambs in small numbers or each day's drop separate for a few days. The ideal arrangement, therefore, is to have a number of ten or 20 acre fields adjacent to the shed which may be used for this purpose although this is not always possible. After the ewes are turned out into the fields it is not necessary to bring them back to the barn at night. From these small fields the ewes are worked together into bands of 200. When the lambs are two or three weeks old they are docked and marked and usually the ewes put into bands of 600 until the lambs are weaned.

When barn room is limited the ewes are sometimes worked in relays, taking out the ones that are about to lamb by inspecting their bags and working them in a chute

and then separating them by means of a dodge gate. This is a precarious undertaking, however, and heavily pregnant ewes cannot be handled too carefully. When this method is followed it would be more practical to breed the bands so as to come in at intervals of three or four weeks.

Handling the ewes very quietly is most important, and the services of a good night man are almost invaluable. There are many details to look after and every ewe is somewhat "different," and the best of judgment is needed for successful lambing.

### "CAFETERIA" SYSTEM FOR HOGS

In general there are two systems of feeding hogs, hand feeding and by means of the self-feeder. The use of self-feeders for swine is comparatively recent. In the "cafeteria system" the various feeds are kept in separate feeders or in separate compartments of a larger feeder. In this system the "liberty hog" is allowed to balance his own ration.

No man has ever been able to give a sensible reason for growing cotton to pay for bacon and lard, instead of growing cheap forage crops, and especially legumes, to raise some hogs. No man has ever been able to give a plausible reason for attempting to grow hogs on pasture alone or on grain alone. A happy combination is the ideal one.

Hog raising can seldom be made profitable without good, permanent pastures and temporary grazing crops where the hogs can obtain the necessary coarse forage besides a large amount of the grain feed. Pasture grasses and forage crops, especially leguminous crops that will grow healthy, vigorous hogs of good quality, must ever remain the basic factor in economical pork production; however, grain must not, on any account, be omitted from the daily ration. A certain amount of grain feed is absolutely necessary to grow hogs with the greatest profit.

The Mississippi Delta station made three tests in which self-feeding was compared with hand feeding. "The self-feeder is desirable in that it saves five-sixths the time required by the old method of feeding two or more times a day in a trough." This is an item to be reckoned with since labor is getting scarcer and higher in price every day.

"It is desirable in that it insures better and cheaper gains." Farmer's Bulletin No. 906 "Self Feeders for Hogs," United States Department of Agriculture, Washington, D. C., gives working plans on construction of the various types which any farmer can use. — William E. Schneider, Swine Specialist, Arizona Agricultural Extension Service.

## Large Milk Yield

High Butterfat  
GOOD TYPE

Can all be bred into your herd by a son of

Dutchland Sir Pietertje Creamelle  
our best sire, whose sire is by Pietertje. He sired a Count De Kol and out of the great transmitting cow Changeling. His dam is a daughter of the famous world's record cow Creamelle Vale, and is by a grandson of De Kol 2nd, the foundation cow of the De Kol family.

He has 14 A. R. O. daughters, records all made in our herd, with records up to over 30 pounds butter in seven days at three years. We especially appreciate the orders of dairymen who want good young bulls at modest prices. Write for prices and descriptions.

**F. STENZEL**

San Lorenzo California

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco  
Carruthers Farms, Mayfield, Cal.

## Constructive

This company is not operated for profit, consequently there is no incentive for sharp sales practice.

Every animal that goes through our regular consignment sales is covered by a definite contract, signed by the seller.

We believe these methods best for the seller and buyer.

Write us if you want to consign a number of animals or sell your entire herd.

**California Breeders Sales and Pedigree Company**  
C. L. Hughes, Sales Mgr.,  
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## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

**H. L. & E. H. Murphy**  
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## Redwood Manufacturers Company

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San Francisco



# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

April 6 1918

SAN FRANCISCO

## Blossom Time in Santa Clara County



### California Fruit Trees No Slackers

In 1917 218,000,000 Pounds Prunes

Nearly \$15,000,000



# REO

"THE GOLD STANDARD  
OF VALUES"

## All the Former Excellence Plus Many Refinements

THIS NEW REO LIGHT FOUR is, in all mechanical essentials, the same as its famous predecessor—Reo the Fifth, "The Incomparable Four."

THAT IS TO SAY, those principles of design and of construction which made that great Reo famous the world over for dependability and low upkeep, have all been retained.

WHEN YOU CONSIDER that that Reo Four remained standard in practically the same form for eight seasons (longer than any other automobile ever built save one);

IT MUST HAVE BEEN wonderfully right at every point; must have been. For during those years an host of rivals and imitators came and went.

AND ALWAYS REO maintained its supremacy.

SO WE FEEL that the best possible recommend for this latest Reo—this new Light Four—is to say that all those principles of design and that same quality have been retained.

REFINEMENTS have been made at many points however.

WE PREFER THE TERM "refinements" rather than improvements. For, truth to tell, no owner of a Reo Four could suggest an improvement in that great car.

REO ENGINEERS, at the same time the most experienced and the most progressive, are always seeking opportunities to refine details of Reos.

AND THEY FOUND WAYS to make parts of this chassis, always the most accessible ever built, still more accessible.

ALSO MORE POWER has been developed in the same motor by refinements of valve mechanism; better balance of reciprocating parts.

THE OILING SYSTEM has not been improved—no use trying to improve on what was already perfection.

ODDLY ENOUGH when we begin to talk about this new Reo Light Four, we feel an inclination to emphasize rather those features in which no changes have been made, than those where they have!

SUCH WAS THE QUALITY—such the dependability—such the low upkeep—such the satisfaction of 100,000 owners, that a better could be made only by refining details of the original model.

AND THIS ONE IS BETTER only because it is the latest, the most refined edition of that Reo Four.

YOUR REO DEALER will show and explain to you the points wherein these refinements have been effected—and he'll tell you the reason for each.

IN A WORD, for your convenience—in every case. For still greater accessibility. For still longer life. And for still lower cost of upkeep.

ASK HIM about these things.

WHEN YOU SEE THIS REO you will say the body lines, the finish, the upholstering are the finest Reo has ever turned out.

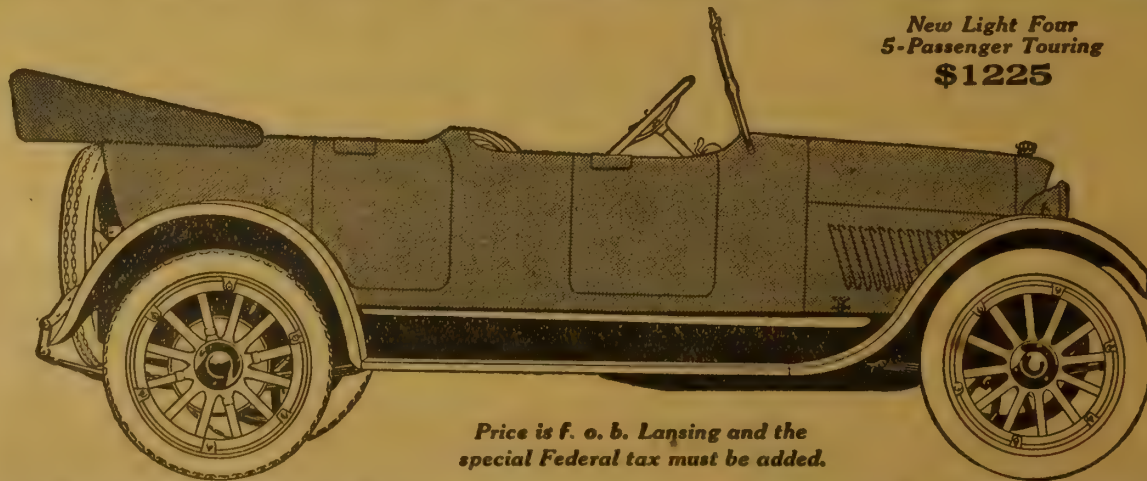
A LUXURIOUS EQUIPAGE; as handsome in appearance as it is excellent mechanically; yet at a price less than you had planned to pay for such a car.

DEMAND SEEMS unlimited. At present, almost hopelessly in excess of factory output.

SO ONLY THOSE who decide now and order at once can hope to obtain a Reo Light Four for spring delivery.

TODAY won't be a minute too soon.

### Reo Motor Car Company, Lansing, Michigan



New Light Four  
5-Passenger Touring  
\$1225

Price is f. o. b. Lansing and the  
special Federal tax must be added.



# California Cultivator

Vol. L, No. 14

LOS ANGELES: APRIL 6, 1918

One Dollar Yearly

## From Low Priced Bulky Feeds to High Priced Products

One of the Factors in Winning the War is the Production of Meats and Fats. To Continue, it Must be Profitable, and to be Profitable Under Present Feed Conditions it Must Take Advantage of Every Improved Method and of Proven Producing Beef Types

**T**HE most intelligent production of animals for slaughter involves a knowledge of the standard requirements of the meat market. Breeders, feeders or investigators who consider only the cost of production and the market value of the live animal, ignoring the demands of the meat trade, overlook one of the most important factors that affect the live stock market and

which should give suggestion to farmers in neighborhoods of small producers. This especially where the producers are people who think and realize the true commercial value of pure blood. Too many farmers have the idea that the pure bred is only for the pleasure of the rich, or at least to give opportunity to the lover of fancy stock, but, as noted in the first paragraph, market reports show otherwise.

A writer in The Journal of Agriculture

Secretary Kinzer, John Letham, the noted writer on Hereford topics, and some of the leading breeders will make the trip to look over Western Hereford interests.

Following is the program of the meeting of range cattlemen which will be held at the University Farm, Davis, on April 8 and 9. Following the Hereford sale on the 10th there will be a Shorthorn sale at San Francisco on April 11, and range cattlemen as well as Hereford breeders will come down from Davis to attend this event.

Monday, April 8

Address of Welcome, Dean H. E. Van Norman; Response, William Mullins; Aims and Purposes, C. E. Rachford, Forest Service, Professor Gordon H. True, L. A. Nares; Markets and Marketing, E. E. Niccoll, bureau of markets, W. J. Dorris, J. B. Curtin, H. A. Jastro and others; Shipping to Market, John M. Fulton of the Southern Pacific and others; Dean Thomas F. Hunt, informal talk; Ralph P. Merritt, food administrator for California.

Tuesday, April 9

Auto drive about the farm; Range Management, Dr. C. H. Shattuck, division of forestry, and others; Feeding for Market, Prof. C. M. Vestal and others; lunch; Livestock Demonstration, University of California; Value of Improved Breeds, Prof. F. W. Wilson, University of Nevada, and others; organization; inspection of sale stock.

THE HEREFORD SALE AT DAVIS

By D. O. Lively

**T**HE sale of Hereford cattle to be held at Davis on April 10, will be a milepost in Hereford history of California.

There will be 50 head of cattle offered for sale, made up of about an equal number of heifers and bulls.

The consignors to the sale are: Cazier & Sons, Wells, Nevada; H. H. Gable, Esparto; W. J. Bemmerly, Woodland; D. O. Lively, Mayfield; Dean Duke, Likely, and Simon Newman Company, Newman.

The Hereford blood lines represented in this sale are unusual. Bonnie Brae, Kansas Lad, Lord Wilton, Gar-

field, Majestic, and that sine qua non of Hereford excellence, Anxiety 4th, are reproduced in the animals that will be put up at the sale.

Dean Duke is consigning a Hereford bull to be sold for the benefit of the Red Cross. Every breeder of Herefords in the sale is putting his reputation back of the animals that are offered. There are bred heifers, a cow and calf, and a number of magnificent yearling heifers that should be quickly snapped up by men who desire to establish pure bred herds of Herefords.

It is an unusual thing for breeders of Herefords to sell females. There is such a demand for bulls to turn out on the range that the breeders find a difficulty in breeding them fast enough. The old order has changed. The cattle raiser of long ago was satisfied with a bull that cost from \$50 to \$100. Modern cattle raising has emphasized the necessity of good blood, and it is the common custom in the range country to pay from \$250 to \$500 a head for bulls that will be taken up by men who know the cattle business, to use as sires for the choice cows from which the range bulls will be bred and selected. These yearling bulls not over-fitted in any sense, not hurt by fat, are western raised, and will in a short time be ready for effective and useful service.

When the three year old steer was cut out of the premium list in the big Eastern live stock shows it was thought that the millenium had come as far as it applied to production of beef cattle at a profit. Now a step further has been taken and the two year old steer has been eliminated. This means that the progressive cattle men have found the most profit in marketing yearling and long yearling steers.

At Chicago last December, there were dozens of carloads of long yearlings that weighed from 1500 to 1200 pounds each. This was not special in any sense but it was the result of close business management and the realization that high priced bulls are the best investment that a cattle man can make.

Continued on Page 434



Count Glory

A great bull owned by W. M. Carruthers, type of some of the great stock which will be at the Shorthorn sale.

may thus fail to follow the most rational lines of improvement in breeding and feeding.

As to demands of the trade, the behavior of the market is best answer. Our readers will recall that California Favorite sold after the 1916 International at \$1.75 per pound. To be sure, that steer had just won grand championship at one of the world's greatest live stock shows. Likewise it is to be admitted that the price was made in part by its advertising value, but there was a foundation of real value in the meat purchased. California Favorite's ancestors were pure bred, and on both sides bred as meat producers.

Another champion at the same show was California Jock. He was no range steer picked up on the Texas plains, but a pure bred of the meat producing type. Now while the demand for beef in these times of war is not for the \$1.75 per pound class, it is for the greatest amount of beef for the least amount of feed. The pure bred have the qualities which enable the most economical production.

The owner of range cattle is appreciating this and is heading his herds with pure bred of best meat producing strain; the small farmer, in a measure, is learning the same lesson, and this will result in the turning of the cheaper, coarser fodders into high priced meat.

We call attention to these points at this time because of the great sales to be held next week. They afford opportunities for securing pure bred which will prove money makers. Lower in these columns we call attention to article on bull associations

Improvement cannot come through using an inferior sire; consequently, when purchasing a herd header, endeavor to secure one which you would expect to throw stock of superior quality to what you already have. Unless a constant effort is made towards improvement the quality of the herd will retrograde; there is no standing still. There are runts in pure bred herds. Only recently we saw a bunch of pedigreed heifers which had been stunted in their development, due to injudicious feeding and care. They were scarcely one-half the size that they should have been. According to the definition given these calves were scrubs. There would be little demand for them for breeding purposes or for beef. It is doubtful if they will ever catch up to the properly cared for heifers even with the required attention. Feed and labor are too expensive to tolerate inferior stock at the present time.

### HEREFORD, SHORTHORN, RANGE CATTLEMEN GET TOGETHER

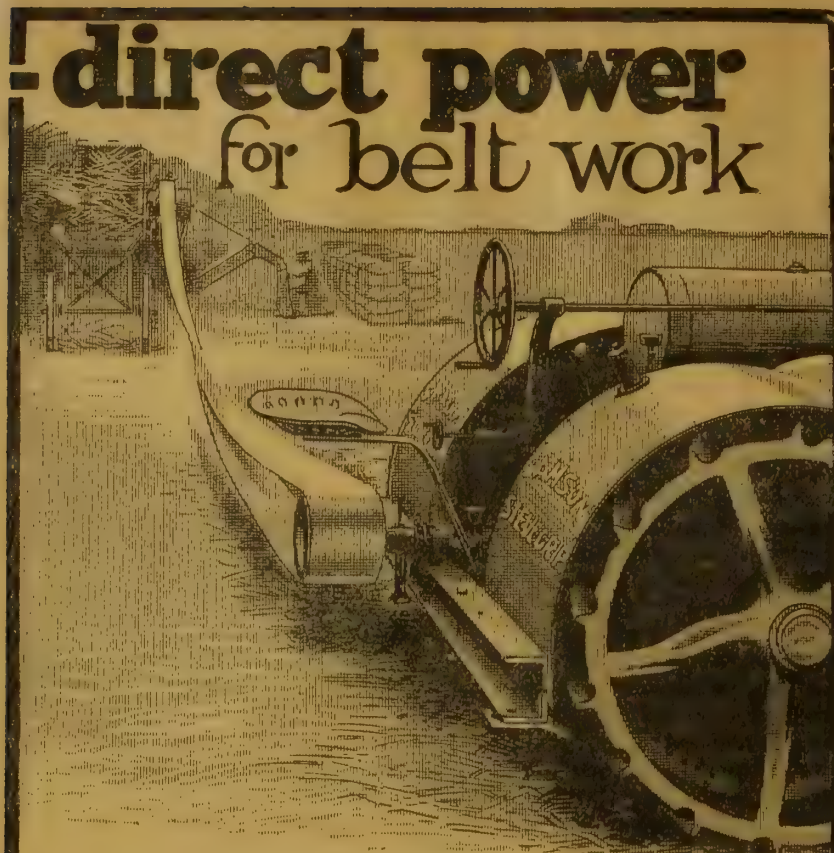
There will be a great concentration of cattlemen interested in purebred Hereford cattle at Davis on April 8, 9 and 10. The purebred Hereford sale will take place on Wednesday, April 10, at 1 o'clock. At 10 o'clock a. m. on the same date, the Pacific Coast Hereford Cattle Breeders' Association will hold its first annual meeting for the election of officers and the transaction of general business. On Tuesday night, April 9, there will be a Hereford banquet at which addresses will be delivered by the prominent Eastern Hereford men who are coming out to attend the sale.



To be at the Great Hereford Sale

A perfect Lady, 608005. Consigned by D. O. Lively to the San Francisco sale, April 10. She was second prize junior yearling at state fair, Sacramento, 1917.





No gears are in motion when the Model S-25 does belt work. Power is transmitted direct from crank shaft of Motor, giving full 25-H. P. at belt pulley.

When doing stationary work—

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 Reg. & Pat. U. S. & Foreign Countries  
**TRACTORS**

- Give steady and reliable power.
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A Model S-25 will do your Traction and Stationary work at LOW COST.

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 (Division of General Motors Corporation)  
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Added protection with Mica Axle Grease. Powdered mica—a mineral lubricant, practically wear- and heat-proof—mixed by special process with highest-quality petroleum grease, keeps spindles smooth and cool—no hot boxes, resists wear and pressure and makes the grease last twice as long. Get a can from your dealer today.

STANDARD OIL  
 COMPANY  
 (California)

**MICA**  
**AXLE GREASE**  
 STANDARD OIL COMPANY

## Taking the Drudgery Out of the Nursery Business

Written for the California Cultivator by James Mills, Jr.



IN every business there is what is known as a time of "peak load." In the nursery game especially we find a time that calls upon all the resources a man can muster to keep things on the move. This is the time during which the stock is dug, graded, inspected and shipped to the buyers.

The digging is the hard part. Generally the work is done by means of a digger drawn by 14 to 20 horses, depending upon the nature of the ground and the size of the trees. This operation necessitates the laying out

wind. The differential gears were mounted, one on each spindle, and the main drive gear was mounted between these on the main axle of the machine. This arrangement made a differential which took care of the varying strains on the two 400 foot cables and so enabled the man handling the machine to run it straight. By means of a system of gearings this main drive gear was connected to the clutch pulley of the old Rumely. This latter was mounted on one side of the machine as shown in the cut, and was used to control the machine.



It Doesn't Look It but It Is a Tree Digger  
 See Mr. Mills' article.

of the nursery in such a manner that large spaces of waste ground are left at each end of the row for the long string of horses to turn in, or it requires the digging by hand of a large number of trees at each end of the row for the same purpose. In digging by hand a large number of trees are injured and the cost of digging is very much increased. Running the horse machine through the nursery is not without its drawbacks either as it is almost impossible to run a large number of horses through a nursery without doing considerable damage to the trees.

In trying to solve the digging problem the writer got some ideas from the Niles nursery and then evolved

When the machine was ready to operate it was hitched behind a Best tractor and was connected to it by means of a belt. This year bars had to be driven alongside of the machine to keep it from slipping when the strain was put on it, but this factor will be taken care of next year by using I beams for runners. These will sink into the ground and will hold the machine steady when it is pulling the digger.

The tree digger itself is pulled back to the end of the row, each time, by means of two horses. The cables are each pulled back by one horse. The machine then winds up on the cables and pulls a row at the rate of about 85 feet a minute. Six men and four horses handle the complete outfit.



Economical Tree Digging  
 Perfect root system saved on every tree.

the following method: Twelve by twelve beams were bolted together as shown in the cut. Then an old Rumely tractor was dismantled and the parts, after they had undergone a little shaping in the lathe, were put together somewhat as follows: The two wheel hubs were cut from the wheels and the hubs were built up to 18 inches in diameter. These were used as the drums on which the cable was to

By using this machine we were able to run the digger at a greater depth and at a steeper angle than when we were pulling the machine with horses. This enabled us to get out a complete and uninjured root system. Besides helping us to get out a perfect root system, the machine has cut down our digging expenses to a very great degree and it has made the tree digging operation a pleasure rather than a



drudge. As to the saving in the expense of digging the data below will speak for itself and will make any nurseryman think twice before he digs his trees this coming year by means of the old and antiquated

method. In 1915 the total cost of digging and grading was \$1365.19; total number of trees dug, 64,176; cost per tree, \$.0211. In 1916, total cost of digging and grading, \$887.01; total number of trees dug, 76,545; cost per tree, \$.01158.

## Insect Enemies of the Home Vegetable Garden

By F. H. Chittenden, Truck Crop Insect Investigations, U. S. D. A.

**F**ROM the standpoint of their food plants, injurious insects may be grouped roughly into two classes: First; those which are choice feeders and ordinarily attack only a single crop, or crops of a single class, although when they are extremely abundant they may resort to other crops or weeds. Examples are the asparagus beetles and asparagus miner and the large tomato worms, which confine their feeding to plants of a single family. Second, those known as general feeders—insects which are not particular as to their food plants. Some of these devour nearly every form of vegetation that grows in the garden. These include cut-worms and other caterpillars, several forms of leaf-beetles and flea-beetles, plant, thrips, blister beetles, and others. When abundant, some of these pests do great damage, sweeping over large areas and ruining entire crops before they can be stopped.

### Cutworms

Tomatoes, sweet potatoes, and other truck plants, particularly when started under glass, are likely to be injured by cutworms when transplanted. These appear in great numbers in the spring and early summer, and the injury is often complete before the gardener notices it. The chief injury is due to the severing of the stems of young plants at about the surface of the ground. One cutworm can destroy many plants in a single night by cutting off more than it can devour.

Control. The best remedy is what is called poisoned bait. For use in a small garden take one peck of dry bran, add four ounces of white arsenic or Paris green, and mix thoroughly with two gallons of water in which has been stirred a gallon of sorghum or other cheap molasses.

For a large garden, use one bushel of bran to one pound of the arsenical mixed with eight gallons of water containing half a gallon of molasses. This is enough for treating four or five acres of cultivated crops.

After the mash has stood for several hours, scatter it in lumps the size of a marble over the garden where the injury is beginning to appear and about the bases of the plants set out. Apply late in the day so as to place the poison about the plants before night, which is the time when cutworms are active. Apply a second or third time if necessary.

Arsenic and Paris green are deadly poisons. Handle them with great care. Keep young children, live stock, and chickens away from this bait.

In severe attacks by cutworms on low-growing plants, such as parsley, a leaf-arsenate spray will answer in place of the bait.

Clean cultural methods and crop rotations are advisable, as are also deep fall plowing and disking, to prevent recurrences of cutworm attacks. Experienced growers become expert in detecting cutworms and remove them by hand. This often can be done with profit on small patches.

### Grasshoppers

Grasshoppers, while more impor-

tant pests in fields of grain and forage, are often troublesome to vegetables.

Control. Poisoned baits especially adapted to grasshoppers are generally used, for which the best formula is as follows:

Twenty-five pounds bran, one pound white arsenic or Paris green, six oranges or lemons, two quarts cheap syrup or molasses, three or four gallons water. This should be scattered thinly over infested ground or on plants attacked.

Where it is possible to turn turkeys into gardens without injury to the plants, they will make short work of the grasshoppers. When the fields are plowed, disked, or harrowed, this also destroys the grasshopper eggs. See Farmers' Bulletin 691, "Grasshoppers and Their Control on Sugar Beets and Truck Crops."

### Plant Lice

Practically all vegetables, especially cucumbers, cabbages, and peas, suffer considerable damage from attacks by small, soft bodied insects commonly called lice or aphids, but better known as plant lice. These work for the most part on the lower side of the leaves, which become curled or otherwise destroyed by loss of their vital juices. They give off a sweet mixture called honeydew, which attracts ants, flies, and other insects. Plant lice increase with great rapidity by the female giving birth to living young. The different kinds vary in

## Get 'em Quick!

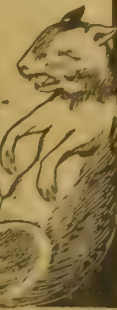
Rid your place of squirrels, gophers, prairie dogs, etc. Do it now when the young of these crop-destroying pests are being born. It's easy and cheap—when the ground is full of moisture to

### Exterminate Squirrels and Gophers

and other rodent pests. Just gas them with Carbon Bisulphide. Used and recommended by U. S. and State officials for its efficiency and economy. Simple to handle—safe. Write today for prices and folder telling how Carbon Bisulphide works.

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such as these are grown only on our foot-hill locations. Note the good roots—for hardiness they have no equal.

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**SILVA-BERGTHOLDT CO.**  
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"LIBERTY BOND" Trees



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Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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## Orange Seed Bed Stock

Both Sweet and Sour. Excellent Fiber Roots  
From \$20 to \$30 per Thousand

**W. G. Hall** Glendora, Cal.

color from light to dark green or nearly black, grayish, brown, yellow and red. They have comparatively long legs and have feelers attached to the head. Some forms have two pairs of transparent or clear wings. They feed by sucking juices of the plants through a beak. Familiar examples are the melon aphid, pea aphid and cabbage plant lice.

Control. If the plants are grown under glass, plant lice may be killed by fumigation with a nicotine preparation. The form suitable for this work is paper soaked in nicotine which when lighted causes a smudge. Sprinkling plants with fine tobacco dust is of some value, especially if applied early in the morning when the dew is on. Under large vegetable garden conditions standard 40 per cent nicotine sulphate gives almost

perfect results if properly diluted and applied. It may be used at the rate of one teaspoon of sulphate to one gallon of water with a one-inch cube of laundry soap.

### WAR CYCLOPEDIA

The committee on public information has issued "War Cyclopaedia, A Handbook for Ready Reference on the Great War." A paper covered book of 324 pages with one folder map of the war zone in Europe and Asia, which touches everything pertaining to the war from "Acts of Congress" to "Zimmerman Note" and even beyond, for it ends with appendix or outline of principal events of the war from 1914 to December 29, 1917. To secure the book enclose 25 cents in coin to Committee on Public Information, 10 Jackson Place, Washington, D. C.

## Citrus Station Dedicated

Impressive Services at Formal Opening of The Citrus and Sub-Tropical Experiment Station.



THE citrus experiment station is dedicated. A beautiful site, a beautiful building, a large and able faculty provides for California an institution unique and one to which scientists the world over are looking for the solution of many horticultural problems.

President Widtsoe of the University of Utah remarked in his address at the dedication; "This institution aids us all." One half the lands of the earth are under arid or semi-arid conditions, and as more people have died as a result of famine than because of

Wickson, former dean of the agricultural college, gave extended review of the Development of California Fruit Industries. The Trend of Discovery in Evolution and the Utilization of its Concepts was the subject of a paper by D. T. MacDougall of the Carnegie Institute.

The dedicatory services were at the station grounds in the afternoon of Wednesday, March 27.

As soon as Dr. Webber had introduced Dean Hunt as chairman of the meeting came an event not on the program and a surprise to all, the pre-



Dedication of the Citrus Experiment Station

On one of Riverside's gray-green hills where the Citrus Experiment Station is located gathered an audience of citrus growers and scientific people to dedicate the Citrus Experiment Station and Graduate School of Tropical Agriculture.

all wars there is a mission for institutions like this in showing how these arid lands shall be made fruitful."

The dedicatory services were impressive and in the presence of a large number of producers and scientific people of California and other states. President Wheeler of the University of California, Dean Hunt of the agricultural college, Dean Van Norman of the university farm school and many others of the University of California were present, as were representatives of Stanford, the University of Utah, the Carnegie Institute of Washington, D. C., of Massachusetts agricultural college, of the United States department of agriculture, of the state and county horticultural commissions, and withal a big showing of producers of the finest fruit on earth.

The exercises began in the morning at the Riverside polytechnic high school with F. O. Storey presiding.

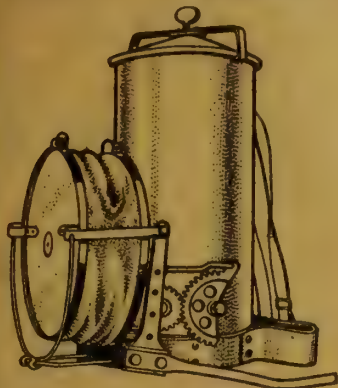
Dean H. E. Van Norman gave a practical talk on Dairying in Relation to the Citrus Industry. It had good practical suggestions as to upkeep of citrus orchard fertility and will be liberally quoted from in the next issue of the Cultivator. Prof. E. J.

sensation by Prof. Wheelock, superintendent of Riverside's schools, but representing the chamber of commerce of Riverside, of two banners, one the Blue and Gold of the University of California and the other Old Glory. The Sherman Institute band played the Star Spangled Banner as four high school girls raised the two banners on their separate flagpoles. Addresses were made by Pres. Wheeler, Dr. Herbert J. Webber, and Dr. Jno. A. Widtsoe, president of the University of Utah. The Cantadores added to the pleasure of the occasion by several chorus songs, and the exercises of the afternoon closed with inspection of the buildings and band concert. The most pleasurable feature of the day was the reception in the evening at the home of Dr. and Mrs. Webber.

The Citrus Experiment Station and Graduate School of Tropical Agriculture at Riverside is a part of the college of agriculture of the University of California. The state legislature in 1913 provided for the establishment of such an institution in Southern California and appropriated \$60,000 for the purpose of the necessary land and water rights, \$100,000 for laboratory



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(Copy) AUGUST CODIGA.

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Your local dealer carries Kilmol, Waste Balls and U. S. Gov't. Poisoned Barley.

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buildings, and \$25,000 for a director's residence, barns and minor buildings.

A large number of sites for the institution were offered and after a thorough consideration the regents of the university on December 23, 1914, voted to purchase the site at Riverside. The location embraces a tract of 475 acres of land, of which about 300 acres are tillable, the remainder being rough, hilly land, suitable only for range or forestry work.

It is located two and one-half miles from the center of the city of Riverside and is traversed by the paved Box Springs Boulevard, the principal interior road to San Diego.

The laboratory buildings are located in a commanding position at the base of a rocky peak, several hundred feet in height; while the residences and farm buildings form separate groups a short distance away. The architecture of the laboratory buildings in general is of the mission style so far as this type of architecture lends itself to laboratory construction. The buildings are constructed of cement,



Herbert J. Webber

Dean of the Riverside station, who before coming to California served with the United States department of agriculture in Florida citrus orchards.

brick and hollow tile, plastered on the exterior. The group of laboratory buildings comprises a main central building, 154 feet by 57 feet, and two wings (one only as yet erected), each 100 feet by 55 feet.

Regarding the staff in charge of the work of the station, Dr. Webber said: "The institution now employs 14 scientific investigators, six laboratory and field assistants, one librarian, four stenographers and 14 farm foremen, teamsters and laborers.

"The chemistry division is headed by Dr. W. P. Kelley, formerly chemist of the government Hawaiian experiment station at Honolulu.

"The division of plant pathology is headed by Dr. H. S. Reed, formerly pathologist of the Virginia Agricultural College.

"The division in charge of the study of plant disease is headed by Dr. J. T. Barrett, formerly pathologist of the Illinois experiment station.

"The leading professor of the division of entomology is Prof. H. J. Quayle, formerly assistant professor of entomology in the college of agriculture at Berkeley.

"The division of plant breeding is led by Dr. L. D. Batchelor, former professor of horticulture in the Utah College of Agriculture.

"The division of orchard management is in charge of Prof. R. S. Valle, formerly horticultural commissioner of Ventura County.

"Associated with these departments as investigators are Dr. H. S. Fawcett, Dr. O. F. Burger, C. O. Smith, E. E. Thomas and Dr. H. B. Frost."

Dr. Webber took charge as dean and director in January, 1913.

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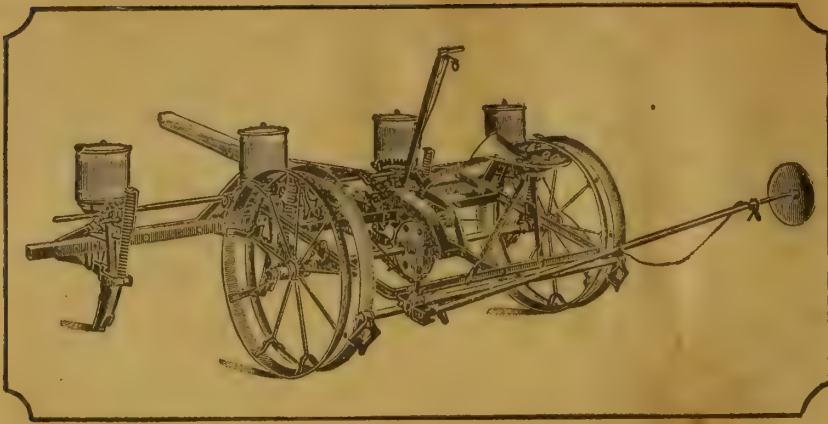
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## Bean Culture

Written for California Cultivator By D. F. Reichard



### Moline Four-Row Bean Planter Saves Time Planting Any Kind of Seed

For the man who has large acreages to plant, not only of beans but any other seed as well, the Moline Four-Row Bean Planter is a great time saver. It does the work just as well as the ordinary two-row planter, and twice as fast.

Any kind, shape or variety of seed ranging in size from cane seed to lima beans can be planted in the best possible manner in the shortest time by the Moline Four-Row Bean Planter.

You have the choice of using either edge or flat drop plates. Each style has its advantages—both styles are regularly furnished.

Seeds of a rounded character—such as kaffir corn, milo maize, navy beans, cranberry beans, etc., are best handled by a round hole plate, while such seed as kidney beans, lima beans

and field corn the edge drop plate with cells properly fitted is better adapted.

A uniform planting depth is maintained because each furrow opener is held to the ground independently of the others by spring pressure. Rows from 24 to 36 inches apart can be planted with the Moline Four-Row Bean Planter.

It is well constructed throughout, seed cans and furrow openers being supported on a heavy, square and very stiff steel pipe.

Seed cans are easily tipped to change plates or empty them of seed.

Steel marker is easily and quickly adjusted.

The Moline Four-Row Bean Planter will save you time this year. See your Moline dealer now, or write us for further information.

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When writing advertisers, mention The Cultivator.

### The "California Special" Plants Every Variety of Beans Including Horse Beans

Make sure of a good stand of beans on your valuable bean land, by using the thoroughly dependable "California Special" Bean Planter.

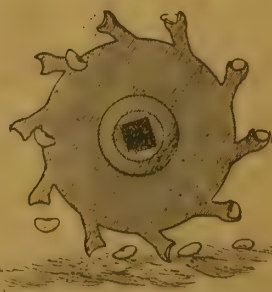
Each planter is equipped with a set of rotary droppers adjustable to plant any variety of beans from small white to large limas. This is the best and most dependable dropping device known for planting beans. The dropper rotates without friction through the hopper cupping the seed as delicately as though each were selected by hand. The seed passes from dropper to boot which runs at any depth set. Shoe runners will be

furnished where desired. Each boot is hinged with wooden peg. Open wheels run back of boot. These press inward and downward around the seed but do not pack the ground directly on top. The California Special is the last word in bean planting machinery. The frame is especially strong—is made low for orchard work if desired and is so evenly balanced and adjusted as to make it easy to handle. Made in 2, 4, 6 and 8 row sizes.



This planter will save the price of itself in not injuring the seed bean during the process of planting.

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Rotary dropping device insures uniform planting. It cannot injure any of the seed.

Catalogue and circulars sent on request. We make a complete line of bean and beet tools.

**T**

HE time for planting field or commercial beans will soon be at hand. An article in the Cultivator of March 16 told how to prepare the soil and

keep it in condition during the winter and spring till planting time, in the case of dry-farming as well as under surface irrigation conditions. With this latter system considerable acreage will be planted as a second crop. When irrigating for a crop after the first one has been harvested be sure to get every bit of the plot wet, as in maturing the first crop, which is usually grown on rainfall, the soil is almost depleted of its moisture. Plow thoroughly six or eight inches deep.

Before planting go over the whole field with a harrow to kill any weeds that may have started, which is cheaper than hoeing after the crop is up.

Commercial bean planting properly begins when cold nights are over and the soil has taken on enough warmth to germinate the seed. Plantings may be extended to as late as August 1 for quick maturing varieties on irrigated land in sections where frost does not come before the last of October.

#### Planting

Planting is done by drilling them two to three inches deep according to the variety of the beans planted and the condition of the soil. The larger beans are put at the greater depth. The closer the moisture is to the surface the shallower the beans should be planted. Cover the seed well.

The rows should be 30 to 36 inches apart according to the tools or machinery you are using. Should there be a rain after planting and before the beans are up go over the plot lengthwise of the rows with a harrow with the teeth sloped well backwards so as not to tear up the beans. This will break any crust that may have formed and leave a fine mulch on the surface.

#### Cultivation

Cultivation begins with the arrival of the second character leaf on the

young plants. Use small toothed cultivators the first time so as not to cover the small plants with dirt. Three or four cultivations at intervals of two weeks will carry the crop through under usual conditions.

Where it is necessary to irrigate furrow out between the rows by attaching a furrower to the cultivator when making the second cultivation. Irrigate and, as soon as the ground is dry enough to be worked, cultivate, leaving a furrow for future irrigations. Water should be applied often enough to keep the crop in continuous growth until the pods begin to ripen.

#### Harvesting

Harvesting begins when the leaves are falling freely but before the plants are dead. This is done with an implement made for the purpose, which straddles two rows, cutting the plants off with blades that run just under the surface of the ground and leave the two rows in a single windrow. The bean cutter is drawn by horses. Let the vines partially dry after cutting, then pile in small bunches to thoroughly cure before thrashing or stacking. It is preferable to thrash beans as they are drawn from the field, for the less they are handled the less loss there is from shelling.

#### Thrashing

Thrashing should be done by an experienced person who understands bean thrashing. A regular grain thrasher will do if properly rigged. Throw large canvases over the bottom of the wagons used to haul the beans to the thrasher to catch any beans that might shell out in hauling and handling.

If the beans grown are only a small lot they can be (1) flailed out on the barn floor or on a canvas, (2) they can be piled three or four feet high and tramped out by driving a team of horses attached to a disk cultivator over the pile until the beans are thrashed out. To separate the chaff, if one does not have a fanning mill, toss the thrashings into the air with a scoop shovel on a windy day. This should be done in an open space where buildings or trees will not break the wind.

#### Weevil

Weevil may be controlled to a certain extent by planting after June 1 in the inland sections where weevil are usually prevalent. Along the Coast weevil are found only occasionally. Beans that are subject to weevil attack should be thoroughly treated with carbon bisulphide as soon as possible after thrashing. Use containers as nearly air-tight as possible. Apply the carbon bisulphide at the highest point by pouring the amount desired into an open dish and placing it on the uppermost sack. For small quantities use one ounce carbon bisulphide to a ten gallon container; for larger quantities use one gallon to 10 by 10 by 10 feet space. Leave the beans in about two hours. Watch the beans closely after they are stored to see that weevil do not develop later. At the first signs treat them again, as a few warm days will hatch out enough weevil to ruin the whole crop. Treating with the carbon bisulphide has little or no effect on the germination unless indulged in too frequently and in unnecessarily heavy doses.

As to the varieties of beans to  
Continued on Page 440



## A Word to the Wise

Food Administration Makes  
Another Appeal  
for Conservation.  
Homemakers,  
Bakers, Grocers,  
All Given Opportunity to Save as  
War Measure



The United States food administration issues the following:

If we are to furnish the Allies with the necessary proportion of wheat to maintain their war bread from now until the next harvest, and this is a military necessity, we must reduce our monthly consumption to 21,000,000 bushels a month as against our normal consumption of about 42,000,000 bushels, or 50 per cent of our normal consumption. Reserving a margin for distribution to the Army and for special cases, leaves for general consumption approximately 1½ pounds of wheat products weekly per person. Many of our consumers are dependent upon bakers' bread. Such bread must be durable and therefore requires a larger proportion of wheat products than cereal breads baked in the household. Our Army and Navy require a full allowance. The well-to-do in our population can make greater sacrifices in the consumption of wheat products than can the poor. In addition, our population in the agricultural districts, where the other cereals are abundant, are more skilled in the preparation of breads from these other cereals than the crowded city and industrial populations.

With improved transportation conditions we now have available a surplus of potatoes. We also have in the spring months a surplus of milk, and we have ample corn and oats for human consumption. The drain on rye and barley as substitutes has already greatly exhausted the supply of these grains.

To effect the needed saving of wheat we are wholly dependent upon the voluntary assistance of the American people and we ask that the following rules shall be observed:

1. Householders to use not to exceed a total of 1½ pounds per week of wheat products per person. This means not more than 1¾ pounds of Victory bread containing the required percentage of substitutes and one-half pound of cooking flour, macaroni, crackers, pastry, pies, cakes, wheat breakfast cereals, all combined.

2. Public eating places and clubs to observe two wheatless days per week. Monday and Wednesday, as at present. In addition thereto, not to serve to any one guest at any one meal, an aggregate of breadstuffs, macaroni, crackers, pastry, pies, cakes, wheat breakfast cereals, containing a total of more than two ounces of wheat flour. No wheat products to be served unless specially ordered. Public eating establishments not to buy more than six pounds of wheat products for each 90 meals served, thus conforming with the limitations requested of the householders.

3. Retailers to sell not more than one-eighth of a barrel of flour to any town customer at any one time and not more than one-quarter of a barrel to any country customer at any one time, and in no case to sell wheat products without the sale of an equal weight of other cereals.

4. We ask the bakers and grocers to reduce the volume of Victory bread sold, by delivery of the three-quarters pound loaf where one pound was sold before, and corresponding proportions in other weights. We also ask bakers not to increase the amount of their wheat flour purchases beyond 70 per cent of the average monthly amount purchased in the four months prior to March 1.

5. Manufacturers using wheat products for non-food purposes should cease such use entirely.

6. There is no limit upon the use of other cereals, flours, and meals, corn, barley, buckwheat, potato flour, etc.

Many thousand families throughout the land are now using no wheat products whatever, except a very small amount for cooking purposes, and are doing so in perfect health and satisfaction. There is no reason why all of the American people who are able to cook in their own households cannot subsist perfectly well with the use of less wheat products than one and one-half pounds a week, and we specially ask the well-to-do households in the country to follow this additional program in order that we may provide the necessary marginal supplies for those parts of the community less able to adapt themselves to so large a proportion of substitutes.

In order that we shall be able to make the wheat exports that are absolutely demanded of us to maintain the civil population and soldiers of the Allies and our own Army, we propose to supplement the voluntary cooperation of the public by a further limitation of distribution and we shall place at once restrictions on distribution which will be adjusted from time to time to secure as nearly equitable distribution as possible. With the arrival of harvest we should be able to relax such restrictions; until then we ask for the necessary patience, sacrifice and cooperation of the distributing trades.

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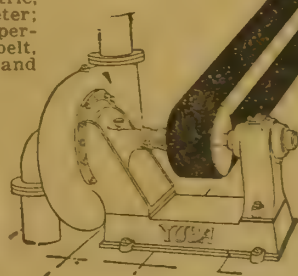
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Published By

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The California Cultivator is a Member of



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C. A. Cour, Globe Bldg., St. Louis, Mo.

Entered at the Post Office at Los Angeles, California, as Second-Class Matter.

Saturday April 6, 1918

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

The Santa Clara Valley is holding its Blossom Festival today and tomorrow. This has been for several years a regular feature. We attended one of those festivals and will always remember the impression made. If other festivals would induce other people to visit the hills above the Santa Clara Valley and look over the blossom covered orchards surely the fame of the valley would be extended, but, fortunately, Santa Clara has no copyright on the blossoms of our orchards, and many another valley has scenes of as great beauty though not so extensive as those which lie before one's eyes when standing upon the hills near Los Gatos, Saratoga or many other near-by points. Besides the beauty there is inspiration this year in the scene because of promise which the flowers are giving of more food for a hungry people.

"Trees bloom in the April weather,  
Petals drifting across the sky."

**SAVE FOR THE BONDS**

The fact that every bond of our liberty loan is backed by more than \$300,000,000,000 of national resources and, further, that in 1888 U. S. Bonds sold as high as 130 and in 1901 went to the top notch of 139.7 on the stock market is not needed to induce true Americans to invest in the third liberty loan, the drive for which begins this week on the first anniversary of America's entrance into the war.

We may make money by investing in liberty bonds, but the rigid economy which some people are practicing in order to be truly patriotic and aid in the successful prosecution of the war is inspired by entirely different motives. The United States will pay dollar for dollar and every penny of interest. She will win in this war,

and it will be because of the patriotic work of our people from the Pacific to the Atlantic.

**POTATOES**

Potato growers of California feel justified in asking a pointed question. Certainly a very difficult situation is confronting them. Why, with the present freight congestion, are hundreds of carloads of potatoes being shipped from far away points into sections which already have glutted potato markets? Los Angeles County farmers have the problem of disposing of thousands of tons of potatoes within the next few weeks or seeing them rot, yet car after car of potatoes from other sections of this state and from the Northwest are sold in our markets daily. Stockton and the Bay markets are receiving the same treatment. Perhaps this is wise. Of course it is easier for the market to supply those goods for which a demand has been created, but this is time of war, and local products which may not always afford all the consumer demands, from a food standpoint equal in every way the imported article.

Growers in all sections of the state have been appealed to to grow potatoes and to grow everything which will sustain life, and consumers have been appealed to to buy locally grown material so far as possible and save the strain on transportation. If the market and the people will not voluntarily comply with this request, should not the food administration or others in authority take steps to bring about correction of glutted markets and choked transportation?

**HONOR TO FRANCE**

The most heroic figure in all this world war is that of France. For nearly four years her men have fought like tigers, have remained absolutely steadfast, and today, facing partial starvation, still stand and are fighting as men of few other nations have fought. Of course there are the Belgians, the Servians, and men of other nations who have shown the same spirit, but from sheer brute weight these nations have been compelled to give way. The soldiers of England, of Canada and of Australia have proved wonderful fighters, but as a nation those peoples have not been tested as have the people of France.

The credit for this wonderful staying power of France has been most justly given to her women. As to the women of France and the work they are doing one writer has said:

"My words are not powerful enough to do even scanty justice to the most heroic figure in the modern world, and of ages past — the woman of France. Of the healthy men who are not engaged in the military service in France, practically all are engaged either in transportation or in the manufacture of munitions, leaving the agriculture absolutely to the women. Not only this, but they have stepped into the place of work animals; you can go into any section of France today and see women of magnificent, noble womanhood hitched to the plow and cultivating the soil. All of the agriculture rests upon their shoulders. The home, always an extremely efficient home, maintains a few old men, the wounded, and the tubercular. Uncomplaining, with high devotion, with an attitude that amounts almost to religious exaltation, the woman of France bears the burden."

The American soldier needs no inspiration from any other people. His

duty and his love for his flag are sufficient, but if example were needed France offers it.

**UPHOLDING THE FLAG**

We believe in honest and constructive criticism; we believe that no arm of the government should feel that it occupies a position so secure that it may not have its mistakes referred to in a truly patriotic way. This is a government of the people, and if that form of government is to continue, the people must be not only intelligent and observant of the manner of administering that government, but true to themselves and to our flag, and not take on the carping or fault finding attitude because of mistakes which have been made and which our government is trying to rectify.

There has been many a loss to our farming interests because of some of these mistakes, and some farmers have felt that injustice called for resentment. One of the best expressions as to the attitude we may well take at this time in this matter is given by the editor of the Breeders Gazette in a recent issue. He says:

"The Gazette does not often preach; but, men and brethren, this is a time when none can skulk nor hide, except in shame. It is a time to strangle all that is sordid and unworthy in word, deed or thought, and once for all declare ourselves. Maybe wheat should command a lot more money. We think it should. Maybe we lost money on those lambs or steers. Clearly the eat-less-meat campaign was carried too far, and well-meaning officials and citizens unintentionally wronged and hurt patriotic people who were loyally trying to respond to their country's call for meats and fats at financial risks to themselves. But what of it? There is just one way to figure: treat any loss or disappointment that may be incurred as a part-payment of the debt you owe the world in which you live. It is a part of the price of wanting to live on in a world fit to live in, and no price is too great to pay that prevents our country's flag from going down in defeat before Prussian cannon. That is The Gazette's idea of the standard that every loyal American has got to fly this spring, if he wants to be counted worthy of bearing the name."

**This Week's War News**

Gov. Stephens reviewed the troops at Camp Kearny last week.

All America is in line for the third liberty loan drive which begins today.

"Be loyal and do your best for America. If you won't help America, go to Germany where you belong."

Americans' wheat ration, six pounds per person per month. Card system soon in force. No hoarding permitted.

Everyone of the seized ships of Holland is now on the way, carrying American reinforcements and supplies.

Quebec has been the scene of serious riots during the week. Many have been killed. The cause of the riots is the activities of the anti-conscriptionists.

The Italian front reports no serious activity, but the Austrians are known to be massing troops, and it is anticipated that another drive will begin within a short time.

It was reported that an uprising of loyal Russians had retaken Odessa and driven out German troops. This lacks confirmation, and so far as

known little of interest has occurred in Russia.

The famine in Finland and in fact many other portions of Europe is becoming more acute.

Two members of the faculty of University of California have been dismissed by the regents after the filing information with the board by officers of the Navy.

Wisconsin has redeemed herself and elected a Loyalist United States senator. It appears that the Republican and Loyalist, I. L. Lenroot is elected, but both he and Joseph E. Davies, Democrat and Loyalist are far in the lead over Berger, the Socialist.

Submarining continues, each week witnessing the sinking of a score or more of ships. This week the great liner Celtic, a 20,000 ton ship, was hit and seriously injured, but managed to make harbor.

The Allies have agreed on one officer who shall direct the offensive of the entire western line. The French General Foch has been appointed, and the announcement was scarcely made when General Pershing made pledge of the services of the American boys at any point and in any way that General Foch should command.

How many Huns have been slaughtered in the terrible drive on the Allies will never be known, but it was certainly awful, and some estimate the number at as high as a half a million. The Allies have also suffered great losses, though to no such degree as have the attackers. The "wedge" was driven to within ten miles of Amiens where it was stopped and terrific drives by the French on the south and the English on the north were begun on the flanks of the enemy. It is reported that the Germans are now digging in in the hope of holding the ground won. Yankee troops have been thrown into the fray, but as to the portion of the line being held by them no announcement is made. It is anticipated that terrific counter attacks will be made during the next few days.

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# Agricultural News Notes of the Pacific Coast

## Northern California

San Quentin prison jute mill has sold 3,000,000 grain bags.

It is estimated that there are 410 carloads of potatoes in Stockton warehouses.

The Butte County chamber of commerce is planning for a liberty garden contest.

Elorado County's farm bureau is demonstrating the construction of "farm bureau" silos.

The bureau of plant industry is aiding large land owners near Chico in experimental plantings of long staple cotton.

The Yolo County superior court has granted damages above \$9000 to a farms company for injury by seepage from a canal.

A late frost has done serious injury to the almond crop near Yuba City. Some growers estimate the loss at 80 per cent.

The Tehama County Cattlemen's Association is to stage an old time barbecue at the formal opening of the Kauffman causeway.

Next week, April 8-10, the cattlemen of California will meet at Davis for a conference on methods of economical beef production.

The Sacramento Valley Development Association is letting sub-contracts for 5000 acres of castor beans to be raised in the Sacramento Valley.

Sutter County grain producers are still encouraging the erection of grain elevators; three are being planned at Tudor, Marceuse and at Caplett Station.

The municipality of Chico, Butte County, now has title to a 2300 acre park in hills near the city. A deed to a portion of this land was lost and later discovered, to the great relief of the city administration.

Placer County's farm bureau meeting: Monday, April 8, Penryn; 10, Weymar and Colfax; 11, Forest Hill and Butcher Ranch; 12, Lincoln; 15, Gold Hill; 20, Long Valley; 22, Roseville; 23, Sheridan; 24, Colfax; 27, Mt. Vernon. A poultry specialist will attend most of these meetings.

The survey of the lands of the state land settlement colony near Chico is under way and will be completed sometime in April. Price list of the various tracts will be issued from Berkeley about April 20. Over 800 applications for these lands have been filed, only 100 of which can be granted.

## Central California

The pasture on the ranges is the best in years.

A farm bureau center at Ceres has been organized.

Pomona Grange of Tulare County recently met at Poplar.

The San Joaquin Valley Milk Producers' Association recently met at Fresno.

Merced County farm bureau is securing pledges from farmers to raise more pigs.

"A squirrel in time saves killing nine" is the slogan of the San Joaquin Valley squirrel army.

San Joaquin Valley sugar factories have contracted for 7000 acre plantings in Kern County.

Farmers of Stanislaus County held a big rabbit drive on St. Patrick's day; 2000 rabbits were bagged.

The state board of health has declared against the use of sewage in producing garden vegetables and berries.

A \$25,000 packing house under control of the California Peach Growers Inc. will be built at Turlock, Stanislaus County.

Stanislaus County Poultry Association is holding monthly meetings and discussing methods of producing more for less money.

Stanislaus County's squirrel campaign is to start April 29. All the school children of the county are to unite in the campaign.

The Grange Patrons of Husbandry at Aromas, Monterey County, is materially increasing its membership. Its campaign at present is in the selling of war stamps.

Grape growers of Stanislaus County recently met and resolved to resist the Drys in the campaign to put California in line on the national constitutional prohibition amendment.

Growers of cling peaches gathered recently at Hanford and considered cost of production and prices which will be fair to producer. Freestone growers are questioning as to advisability of uniting with cling producers in one large pool. The growers want better than \$25 per ton.

Kern County flocks, aggregating a quarter of a million sheep, will soon be yielding their wool clip which, it is feared because of pasture shortage early in the season, may not be as large as last year's clip. It is now anticipated this year's lambs will sell around \$10 per head.

## Southern California

Dates of the Riverside fair, October 8-12.

Brawley, Imperial County, recently shipped two cars of peas in one day.

Riverside has already shipped for this season about 500 cars of oranges.

Two large canneries at Hemet, Riverside County, are planning for great output.

One 12 acre seedling orange grove at Duarte has made a gross return of \$25,000.

Farmers near Salton Sea in Imperial County report wild geese migrating north.

A local center of the county farm bureau for Antelope Valley recently met at Lancaster.

Riverside County farm centers are giving special attention to the pork increasing campaign.

F. H. Scribner, assistant farm adviser of Los Angeles County, is preaching the gospel of more silos.

Farm Adviser Coit of Los Angeles County is discussing June drop at farm center meetings in the citrus districts.

The extremely short output of Navel oranges is in part compensated for by long prices which have prevailed through the season.

The canning company at Chino has been formally organized, and it is expected that an up-to-date cannery will be in operation for this season's fruit.

Agricultural classes in San Fernando high school, Los Angeles County, are observing tractor school week and doing the practical work of running tractors as part of the lessons.

Imperial County has within the membership of the county farm bureau a woman's organization which will have to do with the forming of canning clubs and the encouraging of any activity which increases home comforts and war efficiency.

Bee keepers of Riverside County are urging the organization of a permanent fire protection. The board of supervisors promise aid, and an effort will be made to appoint eight fire wardens to have charge of the various districts of the county.

An effort is being made by the Ventura County bean producers to secure better conservation of bean straw next threshing season. It has been the custom at threshing time to burn hundreds of tons of bean straw which is valuable for feed and fertilizer.

## The Coast and General

Tucson, Arizona, hopes to be a wheat terminal.

Salt River Valley, Arizona, farmers will plant largely to peanuts.

The reclamation service will open 110,000 acres to sheep pasture in Oregon.

The postoffice department has now made a ruling that live chicks may be sent by parcel post.

The war department has figured out that it will need at least 3,000,000 bushels of castor beans.

Canada plants about 14,000 acres to sugar beets with an average yield of around 8.4 tons per acre.

A great cotton gin and oil mill is to be built at Yuma, Arizona. The mill is to cost about \$50,000.

English walnut men of Yamhill, Oregon, are organizing to further planting and profitable marketing.

Producers of castor beans in Brazil are willing to ship large quantities to this country if the market can be guaranteed.

The Farmers Union warehouse at Palouse, Washington, is planning to increase its elevator capacity to 100,000 bushels.

Portland, Oregon and Spokane, Washington, are pulling for the 1920 convention of the American National Live Stock Association.

Owing to low prices on beans and slow movement New Mexico and other growers of pintos will not plant so extensively as last year.

The grinding of all grain in Italy is now under official control. No owner of a mill may grind his own grain without special permit ticket.

Hay producers of Idaho are being warned that fake war department buyers are securing control of large quantities of hay through misrepresentation.

The federal farm loan bank loaned over \$15,000,000 to farmers during the month of February. Nearly \$1,000,000 of this amount was loaned by the Berkeley institution.

The United States imports from China something over 100,000,000 pounds of tea annually, which is valued at nearly \$20,000,000. It reexports less than 1,000,000 pounds.

Tomato growers the Coast over are making appeal to the United States food administration for relief from the low price of \$15 per ton established by the administration. The growers are asking for \$18.



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## Hereford Cattle Sale

by the

### Pacific Coast Hereford Cattle Breeders Association

University Farm, Davis, Cal. Wednesday, April 10, 1918

This offering will be made up of about 45 females and 40 bulls. All Western bred. Consignors to the sale: Cazier & Sons, Wells, Nevada; H. H. Gable, Esparto; W. J. Bemmerly, Woodland; D. O. Lively, Mayfield; Dean Duke, Lively; Simon Newman Co., Newman, California. Fred Reppert, Auctioneer.

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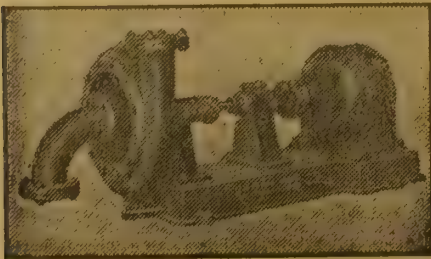
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## This Month in the Ornamental Garden Northern California

Written for California Cultivator by A. R. Gould



WING to the extensive rains there is now much to do in holding the weeds in check, and the lawns need weekly attention.

### Sunflower

These are popular flowers, the new red type being a novelty and seen in quite a few gardens, but the most striking of the more modern types is miniature grandiflora. This grows to a height of two to three feet, branching freely and is covered with small yellow flowers with a dark centre. It makes a fine solid effect and is also useful as a cut flower. Stella is a similar form but a very pale yellow. Seeds of this miniature type should be sown now on a very warm border and later planted out to flower two and one-half feet apart each way.

### Lobelia and Ageratum

These are largely used for edging. Sow the seeds at once in boxes of fine sandy soil, placed in a warm situation, and as soon as the seedlings are large enough they may be transplanted to larger boxes three inches apart. Plants of these may often be purchased.

### Antirrhinums, or Snapdragons

These may now be secured in many different shades and are always popular. They have a bad habit of getting the rust, which is very hard to control, although many cures are recommended. However the disease is generally worst towards the end of the flowering season, so that it does not affect the display very much and young plants are so quickly and easily raised that a succession is not difficult to maintain. Seeds of the following varieties should be sown now in a warm seed border: Golden Morn, Amber Queen, Fiery Cross, Mauve Beauty, Fascination and The Fawn.

### Dahlias

It will be necessary to prepare the ground for these by trenching deeply with manure. Towards the end of the month the tubers may be planted. If you managed to save some seed or secure some from choice varieties it will be an easy matter to raise plants which will flower this year if you sow the seed in a box in a warm situation and later transplant in a box three inches apart. When they are 12 to 18 inches high they may be planted in the open ground.

### Asters

You should not delay in sowing the seed of these in a warm border. The following are very fine varieties: Comet Branching, lavender; Crego's Giant, rose pink, white and purple; Mammoth, white, lavender, purple and shell pink; Red Sensation.

### Nemesia and Linaria

These are little known annuals but very pretty and may be sown in a well prepared border where they are to flower. N. Strumosa and Blue Gem are both fine Nemesias, and Linaria Excelsior hybrids are very choice. They should later be thinned out to four inches apart.

### Pansy

Those which were in flower early will be now making an excellent display, but to keep them on at their best for several more months work in some quick acting fertilizer as a

top dressing. Collect all the seed possible.

### Perennials

The perennial border should ere this have been dug through and any replanting completed as soon as possible. All large clumps of hardy aster, Shasta daisy, etc., should have been divided and the border renovated.

### Castor Oil Plant

This is sometimes grown as an ornamental plant, both the green and red leaved variety, but now it appears to be also in great demand to provide oil for the Liberty motor for aeroplanes. Seeds if sown at once will provide plants for putting out towards the end of the month. Sow two or three seeds in small pots and place in a warm sunny position. Plant later from three to four feet apart each way.

### THE BRILLIANT FIRETHORNS

There are three species and several varieties of shrubs known as pyracanthas, but also called cotoneasters, or crataegus, being closely related to both. They are quite hardy in cold locations, half evergreen. The flowers are white and fragrant, borne in great profusion, followed by an equally abundant crop of red or orange-red



berries which remain on the plants throughout the winter, being ideal for Christmas decorations. They prefer sunny situations, thrive on rocky slopes and luxuriate in rich garden loam but are intolerant of wet feet. They are still rare in California but sure to gain rapidly in popularity as they are easily grown, require no care and are both attractive and useful to an unusual degree in a great variety of situations.

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## This Month in the Vegetable Garden Southern California

Written for California Cultivator By D. F. Reichard

**N**ATURE has certainly favored us this season. Conditions are such that anyone who has a piece of ground and does not make a garden or grow some kind of a crop on it will feel very embarrassed at the end of the season. There was a long dry period in early winter to give all the opportunity to clean up the ground or to spread fertilizers. Rains have thoroughly soaked the ground. The temperature has been in general very mild so that the invitation to work the soil has been strong. Besides these natural incentives we have the human demands which call on us most earnestly, to which we should faithfully respond or be classed as slackers.

It is our patriotic duty as well as our privilege to make this April the biggest planting month ever. There has been time since the rains to have put the land in perfect condition. If this has not been done do so at once by spading or plowing ten to twelve inches deep and thoroughly harrowing or raking to break up all clods and to make a mulch as well as settle the soil. This is the first essential to a successful garden.

Prepare the ground where small seeds are to be planted especially well so that the earth particles will be small enough to snugly fit about the seeds and thereby hold the moisture near it. Moisture, air to a limited degree, and warmth are the essentials for proper germination. Moisture and air are available any time by proper cultivation of the land, while the warmth is best attained in the open or outside ground after the Equinox, which makes the last of March and all of April the best planting weeks of the year.

Often by seeding time the fine mulch has dried down an inch or more. This should be scraped aside and then the seeds are planted in the moist soil one to three inches deep according to their size, the larger seeds being planted to the greater depth. Cover the seed with the moist earth and settle it gently. The dry mulch can be put back as it will not retard the growth of the young plant and will still act as a mulch.

During April most everything can be planted with assurance of rapid healthy growth. Plant beans, corn, cucumbers, melons, okra and squash in variety. For succession, beets, carrots, Cannon Ball or Scott's Cross cabbage, chard, endive, Iceberg lettuce, bunching onion, parsley, parsnips, radishes, salsify, summer spinach and small quantities of turnips may be planted.

Set out plants of Earliana and Stone tomatoes, peppers in variety, egg plants, sweet potatoes, and celery plants. Every garden should have some of the herbs, chives and rosemary. This last item makes a most delicious jelly.

It is getting a little late for planting potatoes and also peas except in particularly well suited places.

Keep hard after the weeds as they make a strong attack at this time. The same can be said of insects and fungi which the warm mild weather develops to full strength. Keep supplies of tobacco extract, sulphur, lime

rosin wash or lime-sulphur and Bordeaux mixture and a good spray pump on hand for immediate use.

### Northern California

Written for California Cultivator By A. R. Gould

**W**E FIND this one of the busiest months of the year. This is the month when we can play safe with tomatoes, beans, peppers, melons, squash, corn, cucumbers and such like tender stuff. Many of our other earlier crops will be nearing maturity, especially peas. In many of the sections where they expect to make lots

of money they will have marketed some ere this. The pea crops both sides of the Bay this year were in fine condition. There were very extensive plantings between San Leandro and Niles on the hillsides where are picked most of the early peas. Some of the smaller seeds, such as lettuce, carrot, onion, etc., have been rather slow in germinating owing to the cold, but they appear to be moving now and will soon need all the care and cultivation we can give them. Throughout the month the weeds should be kept down as, apart from looking unsightly, they rob the soil, and the planted crops will suffer. Turnips, carrots and lettuce sown previously will require thinning and very frequent use of the hoe or cultivator.

The school garden leader might do worse than follow the notes closely in the Cultivator as they will prove of

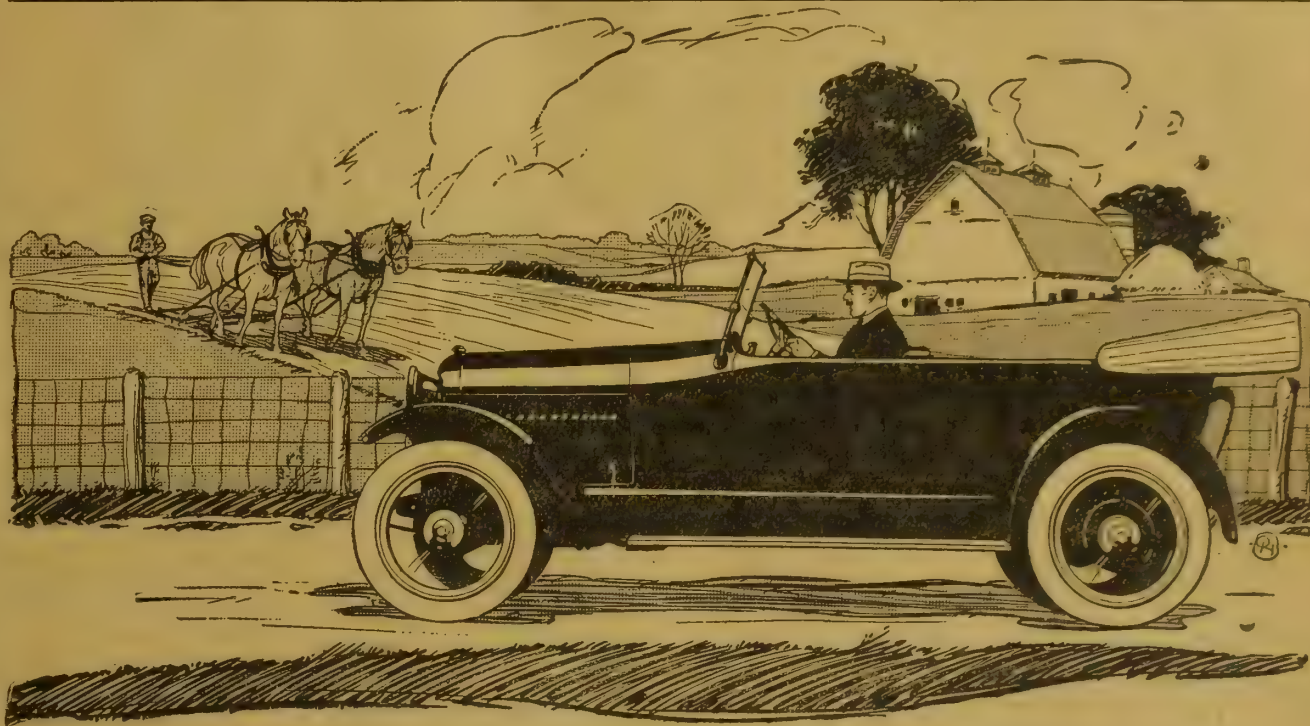
great assistance, and we shall be only too glad to help out with any particular garden problem.

#### Potatoes

The early varieties will soon be showing through, and when they are two or three inches high they should be cultivated between the rows, and the soil should be drawn up towards the plant to form ridges. Planting may still be carried on this month of the main crop varieties.

#### Peas

Continue to cultivate between the rows of this crop and watch out for aphids or green fly. If troubled with this pest spray with Blackleaf 40, a nicotine solution. This is also an opportune moment for making a successional sowing of Little Marvel, as the late rains will no doubt come to our aid, and the variety mentioned is very prolific. You can keep peas in  
Continued on Page 447



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#### HEREFORD SALE AT DAVIS

Continued from Page 423

The quality of the bulls that will be sold at Davis on April 10 will demonstrate just what can be expected of the right sort of blood.

#### THE SHORTHORN SALE

Written for California Cultivator

**E**LEVEN consignors are entering 32 head of cows and heifers and 34 bulls in the Shorthorn sale to be held in San Francisco on Thursday, April 11, 1918.

The largest consignment is that of W. M. Carruthers of Mayfield Farms. Among the animals is Mayflower, sired by a grandson of Whitehall Sultan; Mayflower's granddam being the Bruce-bred imported Marion. This heifer was first prize senior yearling at the San Francisco Land and Livestock Show last year. Another outstanding heifer is Barco Duchess, sired by Wallhurst Goods, and out of Duchess Hurst. This heifer was grand champion female at the 1916 state fair, as senior heifer calf.

The Ormondale Company, of Redwood City, is putting in three well bred young bulls, also nine beautifully smooth heifers.

Henry Elberg of Woodland has some choice young bulls entered, sired by Ring Leader, son of Ring Master, also a four year old cow, Wide-awake, and two cows sired by Gibson's Goods.

Another consignor is William Bond of Newark who is putting in two heifers and four bulls, all of True Dale breeding, being sired by his herd bull, Pacheco Lad 46th, out of cows some of which are strong in Cruickshank blood.

The Paicines Ranch is consigning four bulls bred on Mr. Macomber's Kentucky ranch, two sired by Fayette Marshall, the by King Cumberland, and out of a Cumberland cow; one by Pine Grove King, and the fourth by Fayette Aberdeen, out of a Cumberland cow.

Avondale, Blood shows up strongly in the entries of the Pacheco Cattle Company, which firm is entering three bulls and three heifers. The blood of King Edward, Choice Goods and Avondale represented therein is well worth attention.

T. S. Glide of Davis has a treat in store for the discriminating bull buyer, as instanced by his entry of Village Type, sired by the famous bull, Cumberland's Type, out of the Hannabred Village Myrtle, by a son of Villager. Three Knight Perfection bulls are also offered.

The Jack London ranch has put in this sale the cow Roan Lady, sired by Emperor's Pride, out of Red Lady by King Banff. Roan Lady has a calf at foot. London's Aloha, another entry, is a coming two year old heifer, sired by Roselawn Chief 81st.

Two cows, one heifer and a bull are the contribution of the Hopland Stock Farm, owned by A. W. Foster. All four are sired by the Choice Goods bull, Right Choice.

The Misses Alexander & Kellogg, of Grizzly Island are consigning the bull Shasta, a white bull sired by Glenside Royal and out of Glenside Fern. His granddam, Margaretta Clay, had a record of 10,143 pounds. Glenside Royal was grand champion milking Shorthorn bull at the Exposition in 1915 and at the state fair in 1916, and reserve champion at the state fair in 1917, while Glenside Fern was first in the three year old class at the state fair in 1916.

The University of California enters Belle of Wayside, with calf at foot sired by Sultan Mayflower; also California Belle, a yearling heifer, out of Belle of Wayside. The opportunity is afforded therefore of observing in one ring two of the get of Sultan Mayflower and the dam which produced them.

#### COOPERATIVE BULL ASSOCIATIONS

**T**HERE is a lack of definite purpose in the breeding of livestock on the part of the American farmer. The farmer who has only a few cows usually has them bred by the nearest available bull, often without regard to breed or breeding. The result is a promiscuous admixture of breeds and lack of improvement.

The cost of bull service also falls heavily on the commercial dairyman with a small herd as bulls must be changed every two or three years to avoid inbreeding. He therefore, as a rule, buys a bull calf from the nearest farmer who keeps purebred cows of the breed in which he is interested. Too often cost is the first consideration. Too seldom is any authentic production record of the bull's ancestors available. The result is lack of improvement. Though a great bull may occasionally be secured in this way he will in nearly every case have been disposed of before his heifers come in milk and his value has been determined. In this way many of the greatest bulls have been lost to the dairy industry. A cooperative bull association will remedy these difficulties.

A cooperative bull association is a farmers' organization whose purpose is the joint ownership, use and exchange of three or more high-class purebred bulls. The territory covered by an association is divided into three or more breeding blocks, and a bull is stationed in each block for the service of the 50 to 60 cows in the block. Every two years the bulls are interchanged. Thus at the initial cost, a bull for every 60 cows is provided for six or more years. The cost of bull service is thus greatly reduced, the very best bulls can be obtained, and the man with limited means and only a few cows is enabled to improve his herd. Bulls of outstanding merit are preserved for their entire period of usefulness. Associations of this kind teach cooperation, encourage careful selection of cows and calves, introduce better methods of feeding and management, intelligently fight infectious disease in cattle, and assist in the marketing of dairy stock and dairy products. Assistance in organization may be obtained by writing to Dairy Division, Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C.

#### STATE DAIRY COMPETITION

Upon observation of the records made, many interesting facts were brought to light. For instance, the best grade cow produced 762 pounds of butterfat, contained in over 20,000 pounds of milk, during the ten months' test. More than 40 grade cows produced over 500 pounds of butterfat each in the ten months. The high production of these grades is probably traceable to the continued breeding of pure bred sires in the herds. If the dairy cow competition did not accomplish anything else than to bring to the dairy farmers the value of pure bred sires for improving milk production of grade cows, it will have more than justified the labor spent on it by those in charge.—W. J.



# 65,000 IN USE



"It is good business policy to take advantage of, and profit by, the experience of others wherever possible. It's mighty satisfactory to know you are right when making any investment."

Chas. K. Spaulding

**D**EPENDABILITY—that's the most desired quality in the world when necessity makes the accomplishment of some certain thing essential.

Today, Mr. Farmer, you realize the necessity of conserving and preserving every pound of feed you can. Our country requires this that we may meet our present national crisis. You require it that you may avoid the expense of buying feed at such tremendously high prices again.

A silo is essential to your success this year. It spells the difference between profit and loss in the handling of your livestock. It means that the average silo will save enough foodstuff to feed 80 soldiers 30 days. It helps you, and it helps the Nation. There are other duties for you to follow, too. The duty to yourself. Your crop is the result of a lot of expense and hard work, you can't afford to risk putting it into a silo of unknown merit. Buy a silo that you absolutely know will give back to you a ton of rich, nourishing feed for every ton put into it. Get a silo of proven quality—an



# INDIANA SILO

Indiana Silos are made from the best material that money can buy or skilled manufacturing can produce. A silo constructed according to the best ideas gained through 15 years of exclusive silo manufacturing. A silo tested out in actual use on the farms of 65,000 American farmers—successful ones.

Guaranteed to do all for you that it has done for them. Backed by warranty with millions of resources behind it. There is no doubt remaining as to the Indiana Silo's efficiency. Other types may be as good—but we know what the Indiana Silo will do. Its results are established by 65,000 successful silos.

**Conditions demand that you have a silo—NOW. Don't wait until next Fall. Raw materials are fast being diverted for Government use. So to avoid disappointment order NOW. You can pay us later. Mail your name on Post Card For Indiana Silo Book—FREE!**

**The Chas. K. Spaulding Logging Co.**

Portland, Oregon    Salem, Oregon    San Francisco, Cal.  
Address all inquiries to Salem Office

# O.K'D BY THE NATION



# First Spring Sale of SHORTHORNS

Under Auspices of

**California Shorthorn Breeders Association**

will be held at

**Sales Pavilion, 478 Valencia Street, San Francisco**

on

**Thursday, April 11th, 1918, at 1 P. M.**

Bulls for range man

Bulls for the registered herds

Cows and heifers of quality

All animals tuberculin tested

For Catalog Apply to

**CALIFORNIA SHORTHORN BREEDERS ASSOCIATION**

**320 Sharon Bldg.**

**San Francisco, Cal.**

**Fred Reppert, Auctioneer**

## Our Consignment at the Shorthorn Sale

consists of the following

**3 Bulls**

**9 Heifers**

By Golden Goods Junior

All are strong, healthy animals—the choice of last year's breeding. Out of pure bred Scotch cows.

Bulls are suitable to head any herd. Heifers are highest quality.

**THE ORMONDALE CO.** Redwood City  
California

This stock may be seen at our ranch any time before the sale. Ranch located in Portola Valley, seven miles from Redwood City.

## Pacheco Cattle Co.

will have three yearling bulls and three yearling heifers in the

**Great Shorthorn Sale on April 11**

All rich in the blood of their herd bull True Dale. True Dale won first for Get of Sire at Sacramento, 1916-1917 and at Portland International, 1917.

## Registered Shorthorns Hopland Stock Farm

Hopland, Cal.

Breeders of Grand Champion Cow, Sacramento, 1917  
Range and Herd Bulls of Choice Breeding

San Francisco Office

226 Southern Pacific Bldg.

## JACK LONDON RANCH

Have entered three head in the sale. Roan Lady and bull calf, sired by Roselawn Choice, and the prize winning white heifer "London's Aloha," also sired by Roselawn Choice, Reserve Champion Bull. Beef Shorthorns, Registered Jersey Stock, Shire Horses and Duroc-Jersey Hogs for sale.

**E. Shepard, Supt.,**  
Glen Ellen,

Cal.

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

## Cause of Bitter Milk

I would like to give my experience with my young cow that gave bitter milk last winter. I thought we did not wash the bucket and pans clean enough, so we took extra pains in washing them, but that did not help out any. I knew that if we boiled the milk we could make good butter, but I was not satisfied with that. I wanted to know the cause of it. I did not stop my observation until I found out; and I found out the cause of it all. Because my cow wanted to stay outside and take the cold winter at nights I just let her stay out. Now that was one cause, and the other cause is salt. I knew well enough that my cow ought to have salt, but I just neglected it and she got poor and consequently we got bitter milk. Then I put her in the stable at night and

gave her plenty of salt. She then got fat and we got good sweet milk and good butter.

Now this winter I had the same trouble again on account of leaving my cows out at night and not giving them enough salt. My young cow started to give bitter milk and my old cow gave pink milk; the butter would be strong, the buttermilk had a red-dish cast to it and we could not use it. Then I thought, "Here I am feeding expensive hay and not giving my cows the proper care," so now they go into the stable every night, and we see that they get plenty of salt.

Now this is practical experience with me. I am not afraid of the waste basket, for I feel that the California Cultivator is a good friend to all of us farmers.—Mrs. E. C. Dailey, Kingsburg.

## Farrowing Time

Do not confine the sow in her farrowing pen more than 48 hours before farrowing time if it is possible to avoid doing so. Reduce the heavy feed to some extent, probably about half, for that length of time. The farrowing house or pen should be comfortably warm, well ventilated, and well lighted. Above all else it should be well bedded. Do not allow any circulation of air under the floor. Too many hog raisers make the mistake of bedding too lightly. Heavy bedding naturally makes the sow comfortable and warm—conditions necessary if she is to be quiet.

Under no circumstances should the sow have any feed whatever for 24 hours after farrowing. She must, however have plenty of water at frequent intervals. This water must not be icy cold—that drawn directly from the well is about the right temperature. Commence after 24 hours feeding lightly, increasing the feed gradually for probably a week or ten days, when she may be gotten onto full feed, conditioned on the size of the litter and the milking qualities of the sow.

### Look Over Pigs Before Each Feeding

A good herdsman, for the first week at least after farrowing, will look the pigs over carefully before each feeding. If any indications of scours ap-

pear, the sow's feed should be reduced immediately or possibly cut out entirely. A heavy feed of rich slop given when scours begin to show up possibly may kill the entire litter. A little extra care for these few days is absolutely necessary.

When the pigs are from four or five to ten days old, be on the lookout for thumps. The best looking fat little pig is the one to go first every time. An almost certain indication is a little roll of fat around the neck. While there is no known cure for thumps, the trouble is quite easily prevented. Plenty of exercise for the pigs is the answer. In cold stormy weather out-of-door exercise is impossible, but if a central farrowing house with an alleyway is used, get the little fat fellows into the alley and put in about ten or 15 minutes three or four times a day chasing them with a buggy whip until they are pretty well tired out. If this is impossible try putting one or two of the little pigs at a time in a large barrel or hogshead, placed by the farrowing pen. The pigs will hear the old sow making a fuss, and in running around the barrel hunting for a corner to climb out, generally will take the exercise necessary to ward off thumps. A considerable part of the battle is won if the litter gets past the first ten days or so with a good start.

## "This Little Pig Went to Market."

Written for California Cultivator By C. A. Briggs



THIS is a story of the possibilities in the hog breeding industry and shows what may be accomplished with a good animal in capable hands. It is not believed that similar results can be obtained by careless breeders with poor stock. Facts, figures and names of purchasers are at hand to prove every statement and show that "this little pig" went to market to good purpose. This is the story:

The sow, Ora Price, a Poland-China owned by W. A. Young and J. A. Clark of Lodi, was first sold by W. A. Young as a suckling pig for \$12.50. Later Mr. Young saw the pig and bought her back for \$25. He did this because he thought she was a sow of promise but that she was not being properly cared for. Under his care she has developed into a splendid breeder. Her first litter, in the fall, of nine pigs, four boars and five sows, sold as follows: three for \$30 each,

two for \$35 each, two for \$40 each. Two were kept by Mr. Young after he had refused an offer of \$50 each. Counting these last as sold to Mr. Young the first litter brought in a total of \$340. Her second litter in the spring was seven sows. Of these one, Lady A Model, sold for \$175; one, Model Price, for \$200 to a Stockton breeder who also offered \$500 for two others of the litter which were first and second in class under year, and one of which was the reserve champion at Sacramento last year. Three of the litter were sold at Sacramento as under six months pigs for a total of \$235. Counting the two which Mr. Young refused to sell for \$500 as sold to his own herd at that price, this litter of seven has brought a total of \$1110. The total income from the two litters in one year is \$1450 from a \$25 sow. Added to this, the Stockton breeder referred to has made a standing offer for her of \$200. This story shows that breeding and feed-



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Germ Free

## Blackleg Filtrate

and

## Blackleg Tissue Aggressin

**The New, Safe and Efficient Agents for Protecting Calves from Blackleg.**

Cutter's Blackleg Filtrate positively protects against Blackleg.

Cutter's Blackleg Aggressin, made directly from animal tissues, affords even greater protection and is recommended for Pure Breeds.

Neither the Filtrate nor the Aggressin can possibly produce Blackleg in even the most susceptible animals since both are germ free.

Both have given 100% protection wherever used.

Prices—	
10 dose pkge. Filtrate....	\$2.00
50 " " " " " " " "	8.00
100 " " " " " " " "	15.00
10 dose pkge. Tissue Ag-	
gressin .....	4.00

N. B.—Cutter's Filtrate (a "cultural product" aggressin) is full 5 c.c. to the dose, as we believe that smaller doses, whether concentrated or not, afford less protection.

Write for booklet telling what germ free vaccines are and wherein "cultural product" Aggressins differ from Cutter's Aggressin made from animal tissues.

While these new "germ free vaccines" have advantages that should be known to every stockraiser, we see no reason for a quick change to them by stockraisers who have had satisfactory results from the use of

## CUTTER'S BLACKLEG PILLS

"California's Favorite" for nearly 20 years

Year in and Year Out they have given better satisfaction than any other vaccine made, and as far as price and convenience of administration are concerned, they have all the advantage.

Prices:	
10 dose pkge. Single pills	\$1.00
50 " " " " " " " "	4.00
10 dose pkge. Double Pills	1.50
50 " " " " " " " "	6.00
Cutter's Pill Injector....	1.50

Insist on Cutter products. If unobtainable, order direct. We pay shipping charges.

The Cutter Laboratory, Berkeley, Calif.  
(U. S. LICENSED)  
"The Laboratory That Knows How"

## Shorthorns

Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

Visitors welcome — information cheerfully given.

**T. T. Miller**

So. Normandie St., Los Angeles, Cal.

## The Papec Pneumatic

Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.

For particulars write

**Santa Fe Lumber Co.**

16 California St. San Francisco

When writing advertisers, mention the Cultivator.

ing both count, for W. A. Young is one of the best feeders in the state and Ora Price is a well bred sow.

### NEW ARRIVALS

Written for California Cultivator  
By C. A. Briggs

On March first Clayton N. Slocum of H. P. Slocum & Son of Willows arrived from the East with a carload of Duroc-Jersey hogs. They were purchased for their own and other herds of California breeders, are among the finest specimens ever brought into the state and were selected from the holdings of the best Eastern breeders in Iowa, Illinois, Nebraska and Missouri. Animals of best blood lines and finest individuality were secured from the herds of J. D. Waltemeyer & Sons of Melbourne, Iowa; Van Patten & Son, Sutton, Nebraska; Robert Leisy, Wisner, Nebraska; O. S. Larson, Logan, Iowa; McAndrews & Sons, Vail, Iowa; Lot Bros., Fairmont, Nebraska; J. Patterson, Red Oak, Iowa; E. Bates, Oakland, Iowa. For their own herd Mr. Slocum selected Uneeda King the Col., a fall boar of great quality. His sire, King the Col., is known to all lovers of the breed. Two years ago 35 sows of his breed were so good that they sold for an average of \$140. A year ago last fall the junior champion at the Omaha National Swine Show, Algo's Giant, was sired by a sow of King the Col. Col. Gano, another of his sons, was also a sire of many winners. The first prize senior yearling boar at the 1916 International was sired by a son of King the Col., so that the new arrival, Uneeda King the Col., out of King the Col., out of King of Cols., out of Prince of Cols., is the kind of hog we all want here. As an individual he is fine; he has great stretch, a high arched back, extra good bone and feet and will surely catch the judge's eye in the show ring. Best of all he will without doubt do much in the state's campaign for "more and better hogs." Besides this leader in boars Mr. Slocum has several sows of quality that add to the strength of his herd very materially.

### Book Review

#### SWINE MANAGEMENT

"Swine" by William Dietrich, published by Sanders Publishing Co., Chicago, \$1.50.

The discussions here given are the results of a number of years of specialized study in swine husbandry in connection with a thorough study of the principles of animal nutrition. Practical farm experience was supplemented by a detailed study of experimental data and a great deal of original investigation in the subject. An attempt is made to present the subject of swine breeding, feeding and management in such a form that it can be understood by the general farmer and swine breeder; the man who is producing hogs for the pork product as well as the man who is producing purebred swine for breeding purposes. The student also is kept in mind, and it is hoped that the elementary form in which this subject is presented will appeal to the needs of the classroom.

The book consists of 312 pages of hog information, which makes it a classic of swine literature. There are 23 chapters divided into three parts. The first, Swine Breeding, with nine chapters which treat fully selection, size, prolificacy, and quality, breeds, characteristics, judging, origin of breeds, their development, etc. The second part has to do with feeding, to which five chapters give fullest de-

## ABORTION IN CATTLE

PREVENTED AND CURED PERMANENTLY  
YOUR COWS MADE PROMPT. REGULAR BREEDERS BY

## STERILOID



### STOP LOSING CALVES

**TREATMENT:** If STERILOID is used at the first sign of abortion, the cow will go her full time and have a healthy calf. If your cows or heifers do not come in season, or fail to get with calf, use STERILOID. Cows get with calf after only one treatment. Write today for FREE BOOK. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with STERILOID. Also contains letters from breeders who have used STERILOID successfully.

**GUARANTEE:** We will refund money in every case when STERILOID FAILS to make good. Price \$1.00. Mail postpaid. In plain wrapper.

**MARTIN REMEDY CO.** Dept. L 398-408 Columbus Ave., New York City, Reference: Colonial Bank

She's a Beauty, Too

**Chiefs Bell 467188**

**DUROC JERSEYS**

Bred to Model's Crimson Wonder 181217 who is out of Model's Wonder; Golden Model IV; Golden Model II; Golden Model on side's side. Out of Crimson Lady; Uneeda Crimson Wonder; Crimson Wonder Again; Crimson Wonder I Am, on dam's side. She herself is the best individual you ever saw.

GET ONE OF HER PIGS

**H. P. Slocum and Sons**  
Willows, California

Innisfail Farm, Suisun, Cal.

## Dairy Shorthorns

Will Consign to Shorthorn Sale, San Francisco, Cal.

"Shasta," Bull, white, calved April 12, 1915. A splendid individual. Weight 1875 pounds. Best milk breeding. Winner at State and County Fairs.

## Paicines Ranch

Will Consign 4 Head Bulls to  
Shorthorn Sale

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

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San Francisco

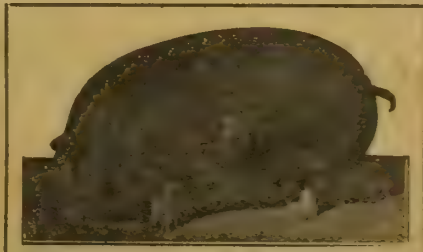
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Mayfield, Cal.

## Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar, Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

**M. Bassett**

Hanford, Kings County, Cal.



### FOR SALE

**Registered Milkstrain Shorthorn Durhams**  
Heifers and Bull Calves of Extra Breeding

Heifers Calved:

Hazel Clae 5th, April 19, 1917.

Idle Lass 10th,

September 28, 1917.

Marjorie Richardson,

November 11, 1917.

Bulls calved:

Reginal Prince, October 14, 1917.

Roland Duke, November 3, 1917.

Prince Aaron, January 16, 1918.

Lord Vivian, January 16, 1918.

Leopold Lad, February 12, 1918.

**The JOHN LYNCH RANCH**

P.O. Box 321

Petaluma, California



# HEREFORDS

## Herefords

**H. H. Gable**  
Esparto - California  
Breeding Stock for Sale

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Anxiety and Beau Brummel Breeding  
**E. A. Noyes & Son**  
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## Anxiety-Herefords

Stock for Sale in Season  
**Chas. Rule, Duncans Mills, Cal.**  
Choice Breeding. Bred and Raised on Range

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Mayfield - - - California

## Registered Herefords

Office: 216 Hobard Bldg.  
San Francisco - - - California

## Herefords

Over 100 choicely bred females in herd. Have been selling to cattlemen for years.

**W. J. Bemmerly, Woodland, Cal.**

Attend the  
Hereford Cattle Sale  
University Farm, Davis,  
Hereford Cattle Sale,  
Wednesday, April 10, 1918.

## ALAMO HERD

(Founded by the Late Gov. Sparks)

## Registered Herefords

Herd and range bulls reasonable.  
Largest Hereford herd in California.

**W. D. DUKE, Likely, Modoc Co., Cal.**

## Hereford Farms

**Geo. Watterson, Owner**  
Bishop, Inyo County, Cal.

Anxiety, Repeater, and Bonnie  
Brae breeding. Bred and raised  
on mountain range.

## North San Joaquin Breeders First Consignment Sale

## 50 ← Registered Holsteins → 50

A splendid offering including 20 A. R. O. cows and heifers with official records up to over 24 pounds butter in seven days; 16 cows and heifers bred to 30 pound sires; cows and heifers bred in the lines that have produced big records both short and long time; splendid cows that have won in the prize ring and in butterfat competitions, and daughters of such cows; and a limited number of choice young bulls.

Contributors to the sale—J. W. Benoit, Modesto; H. E. Cornwell, Modesto; Gotshall & Magruder, Ripon; R. L. Holmes, Modesto; E. F. Young, Modesto.

Sale conducted under the regular rules of this company, every animal guaranteed to be a breeder, tuberculin tested, and sold subject to tuberculin retest by the buyer. Sale will be held at

**Modesto, California**

**Thursday, May 9, 1918**

CATALOG FREE ON REQUEST.

## California Breeders Sales and Pedigree Company

J. M. Henderson Jr., Pres.

C. L. Hughes, Sales Mgr.

**Sacramento, California**

Auctioneers—Col. Ben. A. Rhoades; Col. Cy N. Clark.

## W. BERNSTEIN'S Reduction Sale

OF

## Registered Poland Chinas

**Wednesday, April 17, 1918**

**Kings County Fair Grounds, Hanford, California**

**60—Head will be sold—60**

CONSISTING OF

**18 Bred Sows and Gilts**

**6 Fall Boars**

**32 Fall Gilts**

**AND FOUR GREAT HERD BREEDERS**

Some of the animals offered are closely related to famous Eastern hogs bringing top prices. Every animal in the sale carries the best of blood lines.

LUNCH AT 11:30 A. M. Sale starts promptly 12:30

**W. BERNSTEIN, Owner**

**COL. BEN A. RHOADES, Auctioneer**

Write for catalogue to F. E. NEWTON, Hanford, Cal.

scription. Part three takes the remainder of the book and has to do with management, and discusses the breeding season, farrowing, weaning, shelter, tuberculosis, and other diseases. It ends with a good strong chapter on marketing.

## THE SAN FRANCISCO SWINE BREEDERS' MEETING

Written for California Cultivator  
By R. P. Royce



BECAUSE of the growing dissatisfaction among pork producers in this state over the present outlook for the business, committees from the different swine associations met at the Palace Hotel, San Francisco, March 6, for the purpose of discussing plans making for more satisfactory conditions.

The meeting was enthusiastic throughout, and from the discussions it appeared that if the business of pork production is to be increased several factors now affecting the industry must be corrected. The more important of these factors are:

(a) Cheaper feed, (b) better markets, (c) more efficient methods of marketing, (d) better methods of feeding, (e) better hogs.

It is obvious that some of the above factors depend on conditions that are beyond control. For instance, the question of cheaper feed is dependent on many conditions that cannot be accurately forecasted. In this connection, however, it appears that already the meeting has accomplished some changes that will result in cheaper feed. It will be recalled that some time ago prices for wheat by-products were fixed on the basis of 38 per cent of the cost of the wheat. The by-products affected were bran, shorts, middlings, etc. It later developed that when inquiry was made in reference to the purchase of any of the above by-products, that the millers would state that none of these feeds were available, but offered various mixed proprietary feeds at prices considerably above the price of "straight" mill feeds. When these facts were brought before the meeting, a resolution was passed and forwarded to the food commissioner for California calling his attention to the facts and urging that an investigation be made as to why millers had plenty of proprietary feeds but no straight mill feeds. Announcement has just been made that millers will not be allowed to manufacture and sell in any one month an amount of proprietary wheat by-product feeds in excess of the average amount manufactured and sold in any three months of 1917. No greater profits will be allowed in the sale of the proprietary feeds than that taken on the sale of straight mill feeds.

It is becoming more and more apparent that greater quantities of the coarser grains will be used as wheat substitutes for human consumption, and it is possible that this wide use will operate to further restrict their use in pork production.

It appears that pork producers must depend, to a greater extent than ever, on dairy by-products, stubble, city, household, and orchard waste. There is a vast quantity of such waste that is not now being utilized, and the problem is to work out some satisfactory system for efficient utilization of such waste. In this connection it may be suggested that it will be largely an individual problem and that the nation's needs will prove a sufficient stimulant for every man to make use of what waste he can.

As regards better markets, it can hardly be expected that Pacific Coast prices will be permitted to reach a much higher level than Chicago or Missouri River markets. It is possible, however, that a level may be reached equal to Chicago prices plus the freight and efforts will be made to secure such a basis.

The question of more efficient methods of marketing is one that permits of considerable improvement, and efforts may be directed along several different lines. It is generally conceded that the local buyer presents the biggest problem to solve. The average local buyer who depends on handling the fat stuff from small producers has for years been exacting a piratical margin between terminal quotations and the price he pays, and the heavy tribute he has exacted has

## THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

## Caustic Balsam

IT HAS NO EQUAL

For the Human Body

Perfectly Safe and Reliable Remedy for

Sore Throat  
Chest Cold  
Backache  
Neuralgia  
Sprains  
Strains  
Lumbago  
Sore Lungs  
Rheumatism  
and  
all Stiff Joints

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$100.00 paid in Doctor's bills."

Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

## DOES BETTER WORK COSTS YOU LESS

THE Viking Cream Separator is made of the finest grades of iron and tool steel in the largest separator factory in the world. It costs you less but there is no finer machine made than the

## VIKING CREAM SEPARATOR

Easy running, has greater capacity, close skimming, easy to clean, strong and durable. Write us now for the Free Viking Separator Book and learn why the Viking is used all over the world.



E. J. Chubbuck Co.,  
731 Market St.,  
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## BAG BALM

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## Healthy Udder —Good Milker

The milk flow will be easier and more generous if the udder is free from sores, cuts, chaps, bruises, cracks, bunches or inflammation. Bag Balm, the great healing ointment, is used in thousands of the best dairies for all udder troubles, cow pox, and any exterior wound or hurt. Caked Bag is quickly removed by Bag Balm; its great penetrating qualities soothe and soften the tissues and hasten normal healing. Keep Bag Balm on hand always.

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Eight months to two years old.  
One or a Carload

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Epochal

A sire of three pigs which have sold for \$10,000 each. California boasts some of Epochal blood.

been such that many small producers have become discouraged. Some means must be worked out that will eliminate these profiteers. They serve little or no useful function, and because the average country buyer has not played fair, a community should not hesitate to eliminate him.

One of the most practical plans for handling the problem of the small producer is a plan for cooperative marketing. Such a plan was first inaugurated in this state by the farm adviser of Kern County, and it was so successful that other counties have taken up the idea. Briefly, the plan amounts to this: cooperative shipping organizations are organized by the farm adviser through the farm bureau organization. At stated times the members assemble their hogs or cattle at a central point. The stock is then graded by a committee. Buyers representing a number of packers are advised beforehand as to the date, number and kind of stock to be sold and are invited to be present to bid on the offering. This plan has invariably resulted in the members securing a wide margin over the price offered by local buyers. The small expense is prorated among the consignors. So enthusiastic were those attending the meeting who were familiar with the plan that it was decided that every encouragement be given the organization of similar associations throughout the state. It is proposed to start an active campaign along this line, and every member present pledged his wholehearted support. Plans as to the most effective way of interesting farmers throughout the state were discussed, and it was decided that another meeting be held in San Francisco at the Palace Hotel April 12, at which time every effort be made to have representatives of every swine association and every farm bureau present, for the purpose of working out a satisfactory plan. An invitation is also extended every hog raiser in the state to be present at the annual meeting of California Swine Breeders' Association to be held at the University Farm early in May.

This plan of cooperative marketing has such splendid possibilities that it should go a long way towards correcting many of our market evils.

The question of stockyards for California markets was also discussed and the meeting went on record as favoring the establishment of yards. The feeling was freely expressed that it was only a question of time until the live stock producers of California have the advantage of stockyard selling, and that efforts should be directed toward the shortening of the time.

A phase of the marketing situation that has hitherto received little attention is the practice of weighing hogs, cattle and sheep "empty." On the Middle West and Eastern markets live stock are given a "fill" before weighing to the packer. This fill of water and feed very largely makes up for the shrinkage occasioned by shipping. So far, only a few California shippers have been given the advantage of a fill. It is stated that shippers in the Imperial Valley are paid on the basis of home weights, and a number of the smaller concerns are buying "full" hogs. While it is true that buyers on Eastern markets do not overlook the question of fill in making their bids, and buying accordingly, there is nothing to indicate that the majority of California packers recognize the lack of fill. Consequently when this method of

buying is considered, it is evident that California packers are really getting.

Continued on Page 451

## TAGUS Duroc Jerseys

Home of California  
Defender, World's  
Champion Boar.

**Special offer:**  
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**TULARE, CAL.**

H. C. MERRITT, Jr., Manager

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Registered young bulls from best families.

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Anyone who has seen the corn "shooting" into a silo-filler or heard the crash on the gears as the loaded carrier is started, stopped or reversed at full speed, knows what this *Cushion of coil springs* will do! It absorbs the shocks of operation, prevents breakage of parts, and cushions the machine against undue wear and tear. This is one of the exclusive features of

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### Safe Silage Cutters

Another great Money-Maker idea is the patented Safety Yoke. This makes it impossible for the operator to get his hands in the feeding rolls without reversing the machine and throwing himself out.

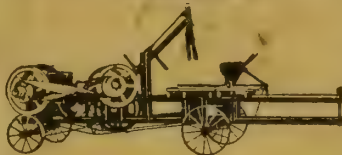


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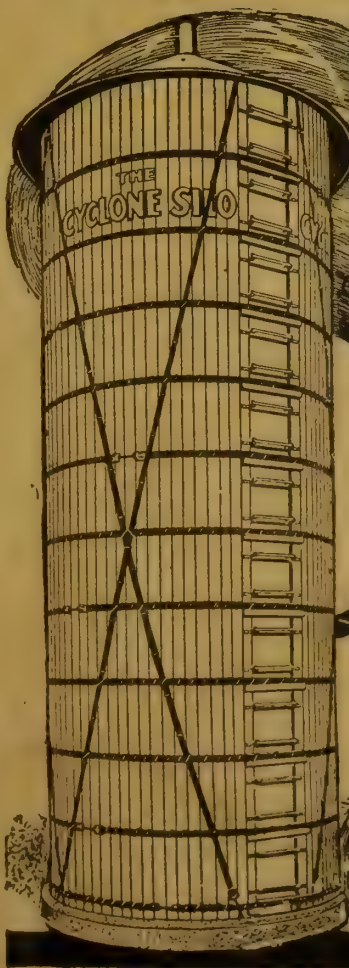
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**COUPON**



## BEAN CULTURE

Continued from Page 428

plant in different sections consult the chart published on March 16, always remembering that commercial Limas require coastal fogs to properly develop.

## Bean Growing Points

Pungent and Direct Answers to Bean Growing Questions by H. L. Musser



IT IS always easy to ask questions, and comparatively easy for a man posted on his subject to answer, provided the questions are asked with intelligence. One of the commonest questions which comes to the office of a farm paper is: "How can I raise beans or alfalfa or some other crop calling for wide knowledge." Such questions cannot be answered in any paper with limitations of space with any degree of helpfulness. We recently put a series of such questions as to beans up to H. L. Musser, one who has wide general knowledge of the production of all small farm and truck crops. Mr. Musser called attention to these limitations, but so far as he could in short space he has answered the following questions:

Should the ground be plowed in the fall? Yes. How deep? From six to eight inches and rolled with a disk harrow for sub-surface packing.

What condition should the field be left in for the winter; that is, smoothed down or rough? Smooth.

Manner of winter handling of soil: Clean culture. Go over with a spike-

The amount of seed required varies according to the different sized beans. Teparies and Small Whites take about 20 pounds; Blackeyes, Pinks, Large Whites, 30 pounds; large Limas and Horse beans, 40 to 50 pounds.

tooth harrow after each rain. A complete covering of rye, or any cover crop, would be beneficial, but to allow a plowed and harrowed field to lie uncultivated long enough after a rain to permit weeds to irregularly cover, the ground would cause it to become dry and crusted before that time; therefore, harrow after each rain.

Soils: Cultivation may be the same depth for all varieties; six inches the first time, but not more than two or three after that.

What soils are best adapted to Limas, Blackeyes, Pinks, Whites and Teparies? If soil has humus or is otherwise rich the nature of the soil makes little difference with beans. Beans and onions are not particular about the nature of the soil, as is cabbage and melons.

How far may Limas be grown in-

land? Is 20 miles from the coast the limit? With irrigation may the line be extended farther in? Is irrigation profitable? Irrigation is profitable. Limas may be grown farther inland on black soil. The heat of the sun refracted from light sandy soils is detrimental.

There are so many so-called varieties or strains of Limas; which is best? Some varieties snap or pop open in the field; the waste is great; is there any help for this? That is, in the matter of handling or in the matter of choosing varieties? Beans which snap readily should be handled early in the day while yet moist from the dew.

Can weevil be avoided by planting earlier or later? What is the best season? In treating seed is anything better than bisulphide of carbon? How much of this do you use per hundred cubic feet? Have you ever noticed injurious effects on the germination? It is claimed that the weevil attack only the early planting; June planting seems to escape. This is not absolute, as we have known weevil to appear in late plantings. Weevil does not attack the Lima bean. Carbon bisulphide is the only thing we know of which will effectually kill the larva of the weevil without injury to the seed germ. Apply one ounce to one cubic yard in air-tight containers and leave over night. Keep away from fire; it is more explosive than gasoline.

## Soy Beans on Farms in the Southwest



SOY beans are quite similar to cowpeas, though they differ in several distinctive features. The soy bean plant is upright, the stems hairy, the

leaves dense but different from the leaves of cowpeas. The pods of the soy bean are short, thick and hairy and the beans quite hard but rich in oil and protein.

Soy beans stand more cold weather than cowpeas, but should not be planted till frost danger is over. The area for growing soy beans in the North coincides with the corn belt. In the South both the cowpea and the soy bean may be grown on most of the thin sandy loam soils, but it is a fact well known that soy beans require richer land than peas.

According to reports Japan, China and Manchuria produce more soy beans than other countries of the world. In these oriental countries the beans are eaten and the oil is a very important article of commerce. Many varieties are grown in the far East, among them some especially desirable for oil.

Although this crop has not been very extensively grown in this country we have a number of varieties, most of them recently introduced. There are but a few very reliable varieties as most of the later introductions have been so far rather disappointing. The Mammoth Yellow is one of the best varieties; it grows tall, yields both hay and beans heavily under reasonable conditions, and it has been popular among farmers in this country.

Soy beans are not regarded as highly to plant as a companion crop with corn nor for a catch crop after oats or wheat as cowpeas. But as a hay crop or for seed when planted alone at the proper time heavier yields have been obtained on soy beans than cowpeas.

The crop is planted in drills or rows much like planting peas. Broadcast sowing has not generally given satisfaction in the South. In the corn belt broadcast sowing has been practiced with good results. The rows for this crop are usually three of 3½ feet apart and plants left from six to eight inches apart or ten to 12 inches, depending upon the variety and the soil. The seed may be planted with planters, as most of them have plates for soy beans.

Cultivation is done as early as possible to keep down weeds and give the plants a favorable start. The first cultivation may be given with a harrow or weeder or with the cultivator using sweeps. The plants are quite tender and should be cultivated carefully.

The worst enemies to soy beans are rabbits. They seem to have a special fondness for the young plants and where the animals are very numerous may play havoc with the plants.

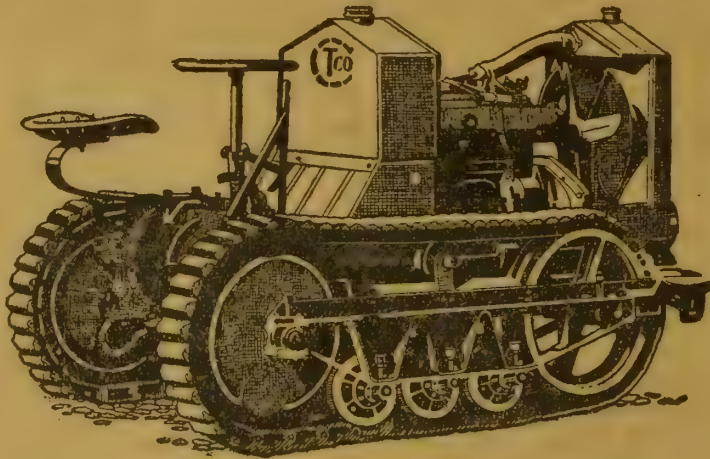
In giving his experience in growing soy beans for Harry D. Wilson, commissioner of agriculture, S. E. Hostetter of Louisiana says:

"When ground is cleared of the vegetable crop we immediately flat-break, and thoroughly harrow and drag the fresh plowed ground in order to obtain a good mechanical condition of the soil, and then wait, if necessary, for the proper amount of moisture. Land that was cropped during the winter and spring months, and then broken in May, dries out very quickly. In our latitude we can plant the Mammoth Yellow soy bean any time from the first of June to the 15th of July (or earlier if you wish) and mature a good crop of seed before frost. We drill in rows three feet wide, one-half to three-quarters bushel per acre, covered not more than one inch deep, on a slightly raised bed. (This to afford drainage, in case of excessive rains before the beans are well up.) As soon as the plants appear we start cultivation with a 14-tooth harrow, and, if it is desirable to cultivate flat, no other implement is necessary. We lay by with a wide sweep run very shallow, this to afford drainage and give better support to the plant, on account of its heavy load of fruit and foliage.

"Soy beans grow in a bunch, or bush, 2½ to four feet high. To harvest for hay they may be cut with a mowing machine, when the beans have formed in the pod, and are about half grown. Then handle same as cowpeas for hay. To harvest for seed they should stand until the pods on

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## Cleveland Tractor

see it operate under farm conditions, compare its price, weight, height, turning radius, ease of steering, packing of soil, how it works in mud, sand, hard or soft ground, in level fields or on hillsides. Compare the material, workmanship, dust-proofing devices, engine, governor, gears, clutch, roller bearings, clarifier, magneto and tracks. Compare every part of the CLEVELAND TRACTOR with all other tractors, then judge for yourself what is the best suited for your particular needs, and what is the greatest tractor value on the market.

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the upper half of the plant turn yellow, the lower half still being green, and may be cut to advantage with a self-rake reaper, if you wish to save the beans from shattering.

"We cut with a mowing machine and bunch with a rake, same as we do with cowpeas for hay. However, this wastes about five per cent of the seed, unless you follow with hogs. Rains do not injure the quality of soy beans while curing in the cock as much as cowpeas. The hay crop, as frequently advised by agricultural writers, can be used to advantage with this crop.

"When the beans are sufficiently cured we immediately draw them to the thrashing machine. We use a regular grain thresher, but reduce the speed of the cylinder to just one-half the speed used to thrash oats. The speed of the separator should not be changed.

"The yield of soy beans compares very favorably with corn. Where corn makes from 25 to 50 bushels per acre soy beans should make from 20 to 40 bushels of seed, and one to two tons of hay. However, 25 bushels of seed per acre is a very good crop.

"At the Tennessee experiment station an acre of corn fed two steers 54 days and made 203 pounds of beef.

"An acre of cowpeas fed two steers 54 days and made 327 pounds of beef.

"An acre of soy beans fed two steers 80 days and made 540 pounds of beef.

"Corn and soy beans fed in the right proportion will make a balanced ration for practically all farm stock. Every experiment station in the Southern states has spoken highly in favor of the soy bean."

#### DRY LAND PINTOS

By Robert H. Moulton in Farm and Ranch

**I**N view of the present world crisis in food supplies, the growing of beans as a field crop affords one important means of helping to meet the situation. They are one of the best substitutes for meat on account of their high protein content. Strangely enough, too, the exigencies of the war have brought into prominence a comparatively obscure type of bean—pintos, dry land grown. According to reliable figures, Colorado had 35,000 acres of pintos in 1916. In 1917 she harvested 175,000 acres, an increase of 500 per cent. New Mexico, long the home of the pinto bean, had 300,000 acres in 1917, an increase of about 600 per cent over the preceding year, while Western Kansas, Nebraska and Wyoming together cultivated some 25,000 acres of what was practically a new crop for these states.

Early threshing returns in the Southwest this season indicated a yield in the neighborhood of 40 pounds per acre, on dry land, or a total of approximately 200,000,000 pounds in the six states referred to. A careful survey of production along the Burlington line in this section shows that fully 3000 carloads will be shipped to market. That this enormous production will be utilized is certain, since the pinto has been officially recognized by the war and navy departments. In fact, it has been placed on an equal basis with the Navy and California Pink beans for army use. Only a few weeks ago the food commission placed an order for 720,000 pounds of Colorado pintos at 7½ cents per pound. This is a good start, but compared with other food products they are cheap at this figure.

In the past the pinto has been unjustly discriminated against. Its origin is obscure, and its name has been against it, the word pinto meaning "spotted." Because of its color and markings it has always sold on the market at a less price than white beans. Yet its type is as well fixed as the navy bean, and it breeds true to type. When baked the spots vanish

and the bean turns a beautiful brown, while in nutriment, flavor and palatableness it is without a superior. The trouble would seem to be that all kinds of nondescript beans—yellow, red, brown, black, pink—have been sold as pintos, and the majority of people do not know that this bean is an established variety of great merit. The true pinto is slightly larger than the navy bean, being about the same size and shape as the kidney bean, with a buff colored body splashed with dark brown flecks.

While a staple product of the Southwest, the pinto bean is practically unknown in the North and East, where the navy bean has been the popular favorite. Yet, according to the Colorado experiment station, in food value it is practically identical with the Navy, but being more tender in flesh it cooks more easily. Chemical analysis shows that in the total

calories or fuel value per pound the pinto exceeds other beans, having 1695 units, compared to 1625 for the Lima and 1605 for the Navy.

The pinto being rich in protein is an excellent substitute for meat. A comparison of nutritive values of common foods shows one pound of pintos at 12 cents to be equal to the following:

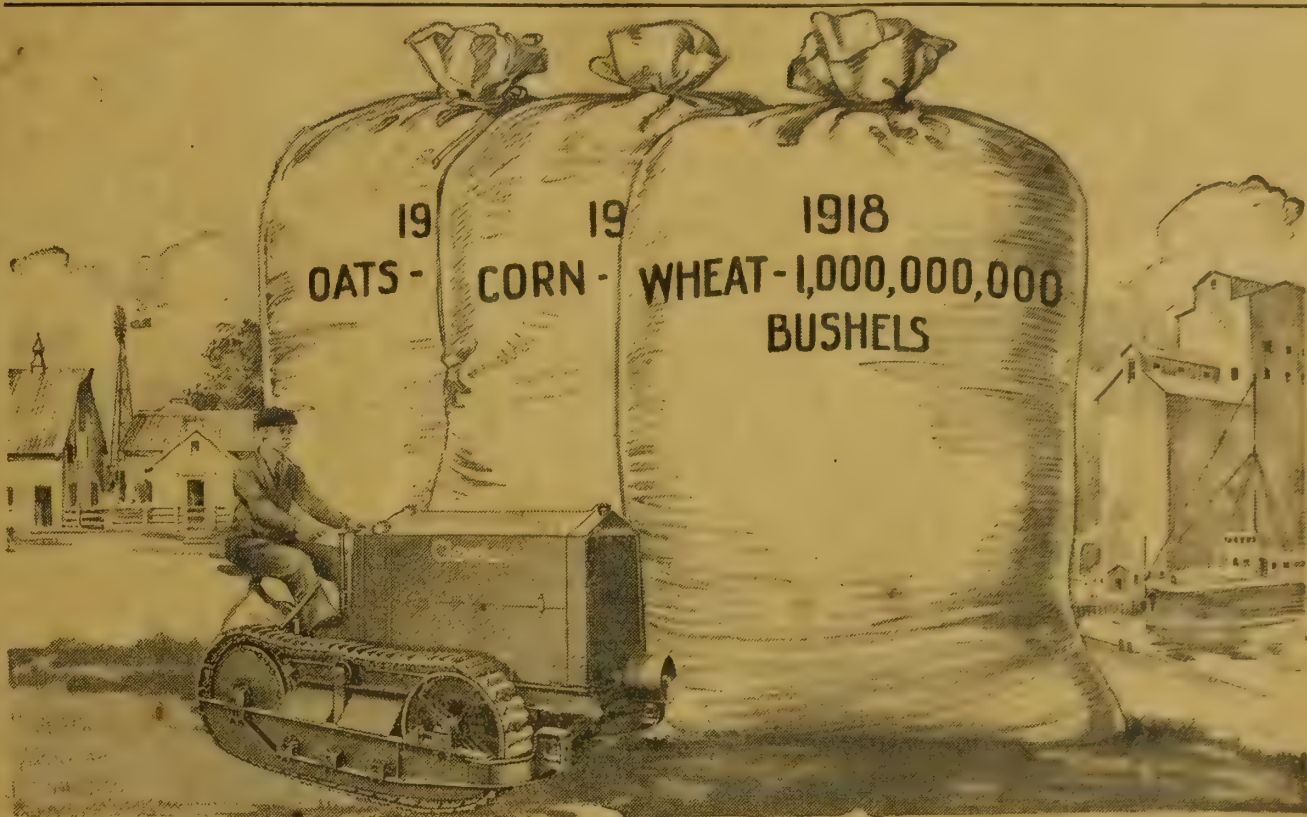
4.4 pounds raw potatoes at 3½	cents per pound.....	15.44c
1.63 pounds sirloin steak at 30	cents per pound.....	45.64c
2.01 pounds round steak at 23	cents per pound.....	46.23c
18.6 pounds eggs at 35 cents per	dozen.....	54.25c
5.2 pounds (5 pintos) milk at 5	cents per pint.....	26.00c

From a growing standpoint the pinto possesses many advantages. In the first place, it is an excellent sod crop, doing well on new land. It is a safe dry land crop, being a great drouth resister; experienced growers

say that if the pinto produces three leaves it will make beans. It is a splendid preliminary crop, the records showing that every acre planted to pintos last season was sown to winter wheat in the fall. Being staple the pinto is an excellent cash crop, and finally, bean straw makes an excellent protein feed for livestock.

At Akron, Colorado, the public schools were closed for two weeks during the harvesting season to allow the school children to help gather the bean crop. A price of 65 cents for pulling a row one-quarter of a mile long was determined upon, this price being based on the work done by men. When the school boys were turned into the fields they proved better help than the men, one 14 year old boy, Fred Schinkel, making \$72 in six days at the work.

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## The Task Before the Nation's Farmers

One billion bushels of wheat must be produced in this country this year.

An enormous increase in the yield of corn and oats is necessary.

Thousands of extra acres must be cultivated. Each individual farmer must produce about one-third more grain than last year.

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In the face of this emergency the Cleveland Tractor becomes an absolute necessity. Its tremendous value to the farmer is emphasized more than ever.

The Cleveland Tractor not only conserves time and labor—it does far *cheaper* and *better* work. And by doing better work it makes possible the production of larger and better crops—enabling you to do your part for the government—and *make more money for yourself*.

The Cleveland Tractor shows the way. It plows 3½ miles an hour—8 to 10 acres a day. It travels on its own tracks like the great "tanks" of Europe. It will go practically anywhere—through ditches, gumbo, sand and gravel. It is steered by the power of its own engine—simply and easily, and will turn completely around in a twelve-foot circle.

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flounder. It has 600 square inches of traction surface. The track is designed for long service. The sections are constructed to prevent filling or packing with mud, and protection is provided to prevent dirt and mud from falling into the track. The sections are joined with hardened steel pins which have their bearings in hardened steel bushings. The Cleveland weighs less than 3200 pounds. It can be housed in less space than is required for one horse.

The Cleveland develops 12 h. p. at the drawbar for hauling and gives 20 h. p. at the pulley belt—plenty for stationary work of all kinds.

But in spite of its unusual power, the Cleveland is small and can readily be used in orchards and under and among small fruit trees.

Rollin H. White, the famous motor truck engineer, designed the Cleveland Tractor. He has used only the best materials. Gears are protected by dust-proof, dirt-proof cases and are of the same high quality as those of the finest trucks.

Prepare *now* to produce the enormous crops which we must have—and incidentally make more money for yourself. Get ready *now* for the great tasks before you. Order your Cleveland Tractor *now*.

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**Citrus**—7000 Navel, Valencia, Eureka Lemons, two and three years. Located Whittier and Glendora. 10,000 one year Villa Franca, Lisbon, Eureka and Seedless Lemons. Located near San Diego. Clean thrifty stock. Our own budding, buds cut from record trees. You will not make a mistake in ordering this stock. Cyrus W. Wilhite, Citrus Nurseries, Glendora, Cal. Home 303.

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons, Eureka and Villa Franca, also Washington navel; also several hundred Valencias on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, Cal.

**Let Us Show You Our Ideal** twelve hundred acre orchard from which these perfect yearling citrus trees were propagated. Healthy straight stock, budded one foot high on sour root growing in our own nursery. References, R. R. Morris, East Whittier, Cal.

**Closing Out**—15,000 choice Orange and Lemon trees for sale. Marsh Seedless Grapefruit, Eureka Lemons, Washington Navel and Valencia. Two year old buds, 30 cents each or in hundred lots 25 cents. F. A. Anderson, Elsinore, California.

**For Sale**—Valencia Orange and Marsh grapefruit trees. Stock propagated only from Performance Record Trees of best type. Trees that will bear and insure profits. Write today. L. V. W. Brown, Riverside, Cal.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator.** The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**Valencia, Orange and Eureka Lemon trees** one year past, ½ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**For Sale**—About 20,000 uncultured Navel, Valencia, and lemons at surprisingly low prices. All are highest character of pedigreed stock. Address W. C. Goodno, 397 So. El Molino Ave., Pasadena, California.

**For Sale**—We still have a good selection of grafted Eureka Walnut trees for sale. Extra select lot of scions was used on northern black roots. Address C. W. Story, Rivera, Cal. Whittier Phone 4721.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574. Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**Valencia, Washington Navel, Eureka Lemons and seedless Grapefruit, 2 years old.** Healthy stocks. K. Niwa, P. O. Box 306, Glendora, California.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. T. Schwabacher, Hemet, Cal.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**Florida Sour Orange Seedbed Stock**—Clean, straight and very vigorous. Performance Record Citrus Trees. F. H. Nushickel, Glendora, Cal. Phone 388.

**Apricots, Olives, English Morello Cherries and Arizona Ash.** First-class trees. C. E. MOYER, Hemet, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, Cal.

**For Sale**—1000 first-class Eureka lemon trees, ½ to 1½ inches. Free from scale. 25c apiece. Peter Arth, Redlands, California.

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**For Sale**—Orange seed and seedlings, budded citrus and avocado trees. Paul B. Magee, Colorado and Huntington Drive, Pasadena, Cal.

**Eureka Lemons** cheap to clean up. They show their fruit buds, no better trees grown. H. Clements, Glendora.

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**Budding**—Citrus, Avocado. Paul B. Magee, Colorado and Huntington Drive, Pasadena.

**For Sale**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, Cal.

### TREES

**Citrus Nurseries, Murphy Oil Company, East Whittier, California.** Selected stock for sale. Inspection invited.

**Orange Seeded Stock** shipped to please YOU. Percy Zug, Glendora, California.

**For Sale**—Citrus trees and seed stock. B. C. Dodson, Glendora, Cal.

### SEEDS AND PLANTS

**Alfalfa Seed**—Others come and go. We have been in the alfalfa seed business, growing and selling, for forty years. We handle vast quantities of it. We make it a specialty. Our customers dot the entire globe, practically. If you want reliable stock, seed that can be depended upon, either alfalfa or other seeds, write or wire us for quotations, samples and advice. V. A. Peterson Alfalfa Seed Co., Arbuckle, Cal.

**Your Alfalfa Fields** will produce heavier crops of clean hay for a greater number of years if you plant the seed best suited to your conditions. We will gladly give you the benefit of our long years of experience as commercial growers if you will write us of your soil and climatic conditions and will also send us samples and prices of the seed we consider adapted to your requirements. Desk B, Bomberger Seed Co., Modesto, Cal.

**Smilo Grass**—An Evergreen, Perennial, drought-resistant bunch grass for forage and pasture. Thrives on dry hills. A limited supply of seed and plants will be sent postpaid on receipt of price. Seed 50 cents an ounce, \$5.00 per pound, roots 50 cents per dozen. One-fourth pound seed will plant one acre. For further information send stamped envelope. G. D. Stead, Oak Dale Ranch, Spring Valley, Cal.

### SEED POTATOES

**Fancy stock** White Rose, Early Rose, American Wonder, Oregon and California Burbank and British Queen Seed. Specially grown. Send for quotations. Wm. A. Curtis Co., 400 Front St., San Francisco, Cal.

**HEADQUARTERS for ALFALFA and SUDAN Grass Seed.** Our Field Seeds are cleaned to the highest standard of purity. When buying from us you are not paying for chaff or weed seed. Write for prices and samples.

### VALLEY SEED COMPANY

502-504 J St. Sacramento, Cal.

**For Sale**—White Egyptian corn, Feterita, Red Milo Maize, Dwarf White Milo Maize, Common California Alfalfa, Common Choice re-cleaned Arizona Alfalfa, S. Peruvian Alfalfa, Amber Cane, Sudan, Wholesale prices in large quantities. Hay in car loads. Box 501, Fowler, California.

**Plant a Few Acres of Dwarf Milo Maize** for seed. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb. in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Rhubarb Plants**—Crimson Winter Burbanks \$3.00 per hundred; Victoria \$3.00, Wagner's Giant Crimson Winter \$3.00, 50 cents per dozen. Currier Bulb Co., Seabright, Cal.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Sweet Potato Plants for Sale**, 500,000 Yellow Nansemon, April and May delivery, \$2.50 per 1000. F. O. Popenoe, Altadena, California.

**For Sale**—Pink beans, Choice seed. Hand cleaned. Ten cents per pound in lots of fifty pounds or over. A. Osburn, Redlands, Cal.

**Sudan Grass**—A few thousand pounds of Sudan grass seed for sale. Write for prices. L. A. Gunther, Los Molinos, Tehama Co.

**Strawberry Plants**—Everbearing, strong, northern grown. Americus, \$1.50 per 100; \$3.00 per 250. F. I. Moffet, Ellensburg, Washington.

**Sweet Potato Plants**—Yellow Jersey, 5000 or less \$3 per thousand, 25,000 or less \$2.50; over 25,000 \$2. Flake Smith, Santa Ana, California.

**For Sale**—75,000 A1 Sweet Potato plants ready for delivery. Yellow varieties. S. O. Smith, Route 1, Box 94, Santa Ana. Phone Tustin 19R3.

**Sweet Potato, Chili pepper and other vegetable plants** in any quantities. Geo. M. Ketscher, Santa Ana, Cal.

**For Sale**—Fine White Rose Potatoes. August Peukart, R. F. D. 12, Box 436, Los Angeles.

**R.O.S.E.'S** 50 cents per dozen. Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

**For Sale**—Conennial Blue Potatoes for seed at W. W. Hoyt Ranch, Motor Route A, Phone 865, Placerville.

### AGRICULTURAL IMPLEMENTS

**IMPLEMENTS AND RANCH SUPPLIES**—Building materials of all kinds. New and second hand. \*A.R.W. shingles 55 cents per bundle. Liberal credit. Save 50 per cent on some. No branches.

ARNOTT & COMPANY, INC., The Yellow Front. Established 1892 112-118 S. Los Angeles St. Los Angeles.

### LUMBER

**Lumber—Sash—Doors—Plumbing—Supplies**—Building materials of all kinds. New and second hand. \*A.R.W. shingles 55 cents per bundle. Liberal credit. Save 50 per cent on some. No branches. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco, Cal.

### LIVE STOCK

**For Sale Cheap**—Stallions, Jacks and Jennies. 1 registered Belgian Stallion; 1 registered Percheron, both weighing over a ton; 3 young Jacks; 6 young Jennies. Among them several exceptionally fine animals weighing over 1150 pounds. Address Newport Estate, Perris, California.

**Sheep for Sale**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

**For Sale or Exchange** for land near coast, large black registered Jacks and Jennies, good as can be found in California. Address A. L. Allen, Perris, California.

**Stallion for Sale**—Imported French stallion Lapon, 7 years old. Chas. E. Bonoli, Petrolia, California.

**Registered Shires**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward Burlingame Cal.

**For Sale**—225 sheep with lambs. Nice bunch for a small place. Come and see them. John M. Cox, R. D. No. 1, Brawley.

**For Sale**—Imported Hurto No. 61953, thoroughbred Percheron Stallion. M. D. Clay, Placentia, California.

### RABBITS

**Go Into Business For Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

### MISCELLANEOUS

**For Sale**—A live, clean, paying business. Bonafide profits, \$250 to \$400 per month. Price \$4000; with handsome large bungalow residence included, \$9000. Might consider exchange for good paying ranch, clear. Address J. S. Osborne, Stockton, California, General Delivery.

**For Sale**—Tractor plows. One 4-disc, one 5-disc, and one 6-disc; all practically new. They are good ones. Room 1120 Merchants National Bank Building, San Francisco.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Quality Trees, Seed Potatoes, berry plants, seeds, milk goats.** Cash Nurseries, Sebastopol, Cal.

### AUTOMOBILE TRAILERS

**All Sizes.** See our stock. Immediate deliveries. Lowest prices. Arnott & Company, Inc., 112-118 So. Los Angeles St., Los Angeles.

### POULTRY

**For Sale**—300,000 Single Comb White Leghorn chicks during April, May and June. Heaviest laying, Hoganized stock only. Broilers in ten weeks; pullets lay at five months. We guarantee safe arrival of all chicks to destination, you pay only for chicks received in good condition. Shipped safely anywhere West of the Rockies. Price \$10.00 per 100; \$95.00 per 1000. No money in advance; pay on delivery. Finest hatchery in the world. Established over twenty years. Must Hatch Incubator Co., 418 Seventh St., Petaluma, California.

**For Sale**—Lo-Glo, Electric Incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Ancona Chicks** from my vigorous heavy-laying strain of First Prize winning Anconas, \$15 per 100, \$70 per 500. Hatching eggs \$1.50 a setting, \$6.00 per hundred. Kaj. Paulsen, Route F, Fresno, California.

**For Sale**—Anconas the most popular breed today. "There's a reason." Small eaters and heavy layers of large eggs. Five breeding pens. Eggs of guaranteed fertility \$1 per 15; \$6 per 100. A. E. Nelson, El Monte, Cal.

**Huddleston Blue Andalusians**, great winning and laying strain, Blue Orpingtons and Sheppard Anconas, eggs \$2.00 and \$3.00 setting. Write for circular. J. R. Huddleston, 342 Edgeware Road, Los Angeles, Cal.

**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders** for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery, Watsonville, Cal.

**For Sale**—Barred Rock, R. I. Red and White Leghorn chicks. Reduced prices. Fine stock. Madera Hatchery, Madera, Cal.

**Chix**—Buff, Brown, and White Leghorns (Barron strain), Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**For Sale**—1917 model 200-egg Radio-Round Incubator, also 50-egg Cycle Hatcher; cheap. R. L. Bernard, Mountain View.

**Baby Chicks** (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery Schellville, Cal.

**White Wyandotte eggs** for hatching from fine breeding pens. Can't be excelled for winter layers. J. W. Nicholson, Wasco.

**"Barclays Barred Beauties"**—Grand exhibition cockerels, cocks and eggs. G. S. Barclay R. A. Lindsay.

**Buff Leghorn Eggs**—\$1.50 per 15, \$5.00 per 100. Mrs. H. W. McClure, Glendale, Arizona.

**White Wyandottes**—Eggs \$2.00 setting. Pure White Cockerels \$5.00. S. Reynolds, Lathrop.

**Famous Tom Barron White Leghorn eggs** \$2.00. E. F. Barclay, Lindsay, Cal.

### POULTRY

**White Leghorn Baby Chicks**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. \$11.00 per 100. Lyon Hatchery, Gardena.

**Your Opportunity**—Half price eggs sale. Big profit now raising our 200-290 egg Leghorns, Wyandottes, Anconas, Red Rocks, Minorcas, Orpingtons, Brannas, ducks, geese, turkeys. Thousands chicks, eggs weekly, reasonable. Laying pullets hens. Males half price. Many repeat orders. Hundreds customers making money. One cleared \$617 on 110 hens last year. James Beeson, Pasadena, Cal.

**Baby Chicks & Eggs**—For Hatching, from pure bred McFarland strain White Leghorns, carefully culled and Hoganized for heavy egg production, shipped on approval, \$10.00 per 100, special price in lots of 500 or more. Sonoma Valley Hatchery & Poultry Yards, R. 2, Box 48, Sonoma, Cal. Write for booklet.

**Thorough Barred P. Rocks** exclusively. Hen record 190 eggs in 10 months. Trap-nested, pedigreed matings for 1918. Pen 1, \$2.50; two \$1.50 per 15 eggs. Baby chicks, March and April 25 cents, limited number. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

**Baby Chicks and Eggs**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked now for spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Model Poultry Farm, White Leghorn Specialists**, established 1903. We are now booking orders for 1918 delivery of Baby Chix and Hatching Eggs from our Bred to Lay Stock. We also have some fine breeding cockerels for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

**Baby Chicks**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbs, Campbell Poultry Ranch, Campbell, Cal.

**Camp Chick**—We are booking orders now. S. C. White Leghorns only selected and fully matured stock that is bred to lay used in the breeding pens, which assures strong and vigorous chicks. \$12.50 per 100; \$110.00 per 1000. H. A. Schlotthauer, Exeter, Cal. Route A.

**Baby Chicks**, Ancona, Rhode Island Reds, \$16.00 per 100, Barred Rocks, \$17.50, MacFarlane Quality White Leghorn, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. D. E. Doke, 743 So. Los Angeles St., Los Angeles.

**White Leghorns—White Rocks**—Highest class of thoroughbred stock. Chicks, Leghorns, \$15.00 per 100. Rocks \$20.00 per 100. Eggs \$2.50 per 15, \$10.00 per 100. Eggs from special pens of high class exhibition type \$5.00 per 15. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

**Baby Chicks**—Leading varieties. We guarantee safe arrival and full count; strong vigorous chicks from the finest flocks of free range stock in this country. 1918 price list and instructions on care of baby chicks, if you mention this paper. Lasher's Hatchery, Petaluma, Cal.

**For Sale**—Baby chicks from fine thoroughbred heavy laying stock. White Leghorns, 100, \$12.50. Rocks and Reds 100, \$15.00. Hatching eggs 15, \$1.25, 100, \$6.00. McConnells Black Minorca eggs, 15, \$1.50, 30, \$2.50. Bronze Turkey eggs, 12, \$4.00. W. H. Ralls, Orange, Cal.

**Baby Chicks**—We guarantee full count of live chicks that will please you. Our Thoroughbred White Leghorns are selected by the Hogan system. Send for price list today. White Leghorn Hatchery Ranch, Pomona Cal.

**Headquarters for Baby Chicks** of standard breeds. Shipped to all points within 40 hours' travel from Fresno and on Freemarket. Phone 2544W. Hall & Rohrs, cor. Clark and Belmont, Fresno, California.

**White Leghorn Baby Chix** from heavy-laying (Hoganized) stock; \$10 per 100. We guarantee safe arrival. The PIONEER HATCHERY, 409 Sixth St., Petaluma, California.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns, "Quack-less" White Muscovy dux.** White Embden goslings, eggs and babies. White Star Hatchery, Kerman, Cal.

**"Eastman's Bred-to-Lay"** Hoganized, trap-nested Barred Plymouth Rocks; April chicks, March eggs. Fairmead Poultry Farm, Fairmead, California.

**Black Orpingtons** Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**White Leghorn chicks and eggs**, best strains, low prices, large plant. Free catalogue and price list. Newton Poultry Farm, Los Gatos, Cal.

**Buff Orpingtons, Buff Ducks, Bourbon Red Turkeys.** Hatching eggs; baby stock; mating list. The Ferris Ranch, S. Reservoir, Pomona, Cal.

**Trap-nested White Leghorns**—Official 200 egg records, also eggs from above \$2 per 15, \$8 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

**Pit Games, Reds, Blues, Gray-Cocks,** stags, hens, eggs. R. H. Crane, Route 3, Santa Rosa.



HOGS

**Make Big Money**—You can, even at present price of grain, if you have our famous Whitten Ranch Poland-Chinas—the mammoth, prolific, fast-growing, easy-feeding kind. Special sale of weaned pigs, many sired by our great \$1000 Jumbo Model. Prices reasonable; satisfaction guaranteed; everything immune. Send for free illustrated booklet, "Hogs for Profit." Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 519B Marsh-Strong Bldg., Los Angeles.

**BERKSHIRES** — **GUERNSEYS**

—**GRAPE WILD FARMS**—

At present the oldest boars we have to offer are of September and October farrow. They are by Royal Superbus and Fashion Longfellow 27th. We also have a limited number of gilts to offer, bred for May farrow.

**A. E. HUMPHREY,**  
Escalon, San Joaquin County, California.

**Poland-Chinas**—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

**The Billiken Brand of Chesters**—The easy feeders and the money makers. The future outlook for hogs was never so good before. Am offering a few fall sows, bred to farrow their second litters in May. Some extra nice spring gilts bred to farrow in June. Fall pigs, both sexes. Write now for prices; immediate delivery. **C. B. Cunningham, Mills, Sacramento County, Cal.**

**Poland-Chinas**—A few very fine young boars, October litters, out of Darkness c. by I. B. A. Wonder. Take 'em within 30 days at \$30 each. Now booking orders for spring farrow from Big Bone Bob, Golden Gate King, and Big Kover, from our own prize winners and the fine sows we have recently purchased in the East. **W. A. Young and J. A. Clark, Lodi, California.**

**Improved Jerusalem Artichokes** produce twenty tons to the acre. The great hog feed for the winter months—the hog does the harvesting. 18 pounds for \$1.50 postpaid to and including third zone. 98 pounds for \$5.00 f. o. b. Niles. 1000 pounds and over at 4 cents per pound. **California Nursery Co., Niles, Cal.**

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. **Roughie Greenfields, Arlington Sta., Riverside, Cal.**

**Berkshires**—First prize junior boar; first and second senior boar pigs including junior champion; fifteen spring and fall open gilts sired by Ames Rival 115, champion boar; and two junior yearling bred sows priced cheap for immediate sale. **F. D. Hall, Perris, Cal.**

**We Pay Cash for Hogs of All Sizes,** weigh's and breeds. Any number from one to several thousand considered. What have you? **Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.**

**Copro (Made from cocoanuts)**—Best hog feed. Your dealer, or **Lee Chamberlain & Co., Los Angeles, Cal.**

**Bernstein's Reduction Sale of Registered Poland-Chinas,** Hanford, April 17. 60 head will be sold consisting of four herd boars, 18 bred sows and gilts, six fall boars and 32 fall gilts.

**Duroc-Jerseys**—Sold out. Pigs by the Junior Champion and out of winning sows in May. **Frederick M. Johnson, Napa, Cal.**

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. **A. L. Tubbs Co., Calistoga, Cal.**

**Recorded Poland-China** boar, 18 months old, sired by Superba, Bargain at \$50.00. Immuned, and tried breeder. **C. R. Hanna, Riverside.**

**PLW Durocs**—Golden Models and Great Wonders are the most consistent winners at every show. **Peters, Lamson & Walker, Devore, San Bernardino County, Cal.**

**Tamworth Gilts,** bred to Tamworth boar. Weight 150 to 200 pounds at 20c pound. Crated, f. o. b. Monte Vista Ranch, Spring Valley, San Diego Co., California.

**Large Type Poland-Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. **J. A. Crawshaw, Hanford, Cal.**

**Rancho Rubio Durocs** all sold out except some choice fall boar pigs. Write for prices. **Elmer Lamb, Ceres, Cal.**

**Greenwood Farm Durocs**—"Size with Quality." **H. C. Witherow, Palo Cedro, Cal.**

**Registered Poland-China** sows for sale; 8 months old. Write **A. J. Stohman, Live Oak, California.**

**Durocs**—P. & L's Defender by Defender heads herd. **Joseph Prendergast, Route 2 Box 57A, San Bernardino, Cal.**

**HEWITT'S BIG TYPE POLAND-CHINA** gilts and boar pigs. **Hewitt & Hewitt, Dixon, Cal.**

**Registered Durocs of the big type**—Cholera immune. **Derryfield Farm, Odd Fellows Building, Sacramento, Cal.**

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. **S. F. Williams, Orland, Cal.**

GEESE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. **PEA FOWLS**—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. **Chas. McNeely, Alpaugh, Cal.**

MACHINERY

**FOR SALE—WHY BUY NEW?**

**SAVATY YOU HALF MATERIAL GUARANTEED USED PLOWS, CULTIVATORS, DRILLS**—Extension disc cultivator, \$29.50; single disc riding plow, \$47.50; 14-in. Gilpin Deere riding plow, \$37.50; 2 iron wheel orchard truck, \$25; 4-gang Stockton, fine shape, \$35; spike harrows, \$16; sundries; cheapest in town.

**BET DRILLS**—Ready to ship, \$39 up. **WINDMILLS, POWER MILLS, MORE FOR LESS**—12-ft. Aeromotor power mill, develops 2 hp. in 20-mile wind, costs nothing to run, \$68; cost new \$140; 16-ft. mills for irrigating, \$95; 8, 10-ft. mills. Now is time to get what you want, when we have complete stock ranch tools.

**HOW'S THIS?** 30,000 gal. Redwood tank, lug hoops, \$135; 1100 gal. redwood, \$19; 1500 gal. \$22; heavy steel galv. barrels, \$6.75; galv. drums, \$4; 30 gal. hot water boilers, \$3.50; 500 gal. corrugated tank, \$19.50; 8000 gal. heavy corrugated galv. tank, \$135; 10,000 gal. heavy corrugated galv. tank, \$175; 900 gal. heavy riveted steel tank, \$68; 5 wagon tanks, \$28 to \$48; new, used redwood and galv. tanks all sizes.

**COMPLETE PUMP OUTFIT: PUMPS** 50 in. at 50 ft.; 3-in. Krogh vertical pump, shaft, 8 hp. engine belt, on cars, \$350.

**ODDS, ENDS**—Slip scraper, \$6; \$35 Freeman feed cutter, hand and power, \$17.50; Geneva feed cutter, special gears for changing speed, \$17.50; Ross Wonder feed cutter, \$8.50; small 2-knife feed cutter, \$4; hand and power feed cutter, tight, loose pulley, \$12; bone grinders, \$4 to \$12; 30 galv. automatic chicken feeders, cost \$3.50, for \$1.50 ea.; wheel scraper, \$25; power blower, \$8; hot water boilers, \$3.50; riding weeder, \$14; cheese cutter, \$5; 4-in. riveted pipe, 16c; sundries.

**COMPLETE PUMPING PLANT, \$450.** Fine job only used two years. 8 hp. engine, 20-stroke Buckeye pump. Jack, hardwood rods, 7-in. brass cylinder, 100-ft. 8-in. casing, \$450. Get busy. It's a bargain. **Office DEMMITT CO., 120 N. Main, upstairs, Yards, 816 Yale, Los Angeles.**

**For Sale**—One 18 h. p. "Olds" distillate engine, mounted on wagon. One 50 h. p. "Olds" distillate engine; one 20 h. p. "Muncie" oil engine; one water well drilling rig; one wooden wagon running gear. The above used machinery may be priced at our shop. Will be sold at a very low figure. **Dunn Manufacturing Co., Oxnard, Cal.**

**REMANUFACTURED PIPE** All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. **WEISSBAUM PIPE WORKS, 169 Eleventh St., San Francisco.**

**Gasoline Engines**—the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale**—One 1918 model Bean Track Pull Tractor, 1-2 gang, 12 inch new John Deere plow. Will sell cheap. **J. A. Hall, Del Sur, California.**

**Pumping Outfit, pipe, etc., very cheap.** Automobile. **Bush, Lemon Grove, San Diego County, California.**

CATTLE

**SHORTHORN CATTLE, SHROP-SHIRE SHEEP, Berkshire Hogs** and Shetland Ponies. Get our prices and descriptions before buying. **Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.**

**Pedigreed Bull Calves,** Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit. tuberculin tested. Write or come and select. **Horses. N. H. Locke Co., Lockeford, Cal.**

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. **Revada Guernsey Farm, Yountville, Napa Co., Cal.**

**Twenty-five head good, range Durham cows,** some fresh, others to be fresh this spring and summer; in good condition. For sale at a bargain. Address **Box 135, Morgan Hill, California.**

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. **McAllister Sons, Chino, Cal.**

**Venadera Jerseys,** the herd with official yearly records. Calves of both sexes for sale. **Guy H. Miller, Route 1, Modesto, Cal.**

**Ayrshires (registered)**—A few young bulls, heifers and cows in milk at a bargain for quick sale. **A. MacMinn, Phoenix, Ariz.**

**Young Holstein Bulls,** bred right, grown right, priced right. **Creamcup Herd, M. Holdridge, Modesto, Cal.**

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. **T. E. Greenough, Merced.**

**Registered Holstein Bulls** of various ages for sale. **Milbrae Dairy, Milbrae, Cal.**

**Registered Jerseys**—1 yearling bull for sale. **J. R. Carhart, Fullerton, Cal.**

PIGEON

**Only \$1.50 Pair**—Carneau and big crosses—fine breeders—squabs ¾ to pound each. Good healthy birds; only limited number to sell. Write now. **Westgate Pigeon Lofts, Westgate, California.**

AUTOMOBILE ACCESSORIES

**Fords can burn half coal oil,** all distillate, or cheapest gasoline, using our 1918 Carburetor; 34 miles per gallon guaranteed. Easy starting. Great power increase. Attach it yourself. Big profit selling for us. 30 days' trial. Money back guarantee. Styles to fit any automobile. **Air-Friction Carburetor Company, 313 Madison St., Dayton, Ohio.**

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**GREAT OPPORTUNITY TEN YEARS TO PAY**

For San Fernando Valley land

No principal payments for six years

Sandy loam. Raise almost anything

Under Los Angeles Owens Riv. Aqueduct

One hour from down town Los Angeles

Ten, 20 and 30 acre pieces

\$450 an acre. Increasing value

Call 621 Hollingsworth Bldg., Sixth and

Hill, Los Angeles. **M. H. Pehr, Owner.**

**Buy Land Where They Raise the Prize Crops,** in Snohomish County. 40 acre farms, \$25 per acre. Ten yearly payments, 6 per cent interest. Visit our offices and see the great exhibit of PRIZE WINNING Vegetables, Fruits, Grains, Alfalfa and other Grasses raised on adjoining farms. They prove our claims that this is the best land in Western Washington. Paved roads. Four passenger trains a day. Graded School, Cannery, Creamery, Cheese Factory. Plenty of work for the laboring man in the mills and camps, where 75 settlers are all boosters. **DON'T LOSE A DAY** in asking for our illustrated literature. **BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.**

**For Sale**—Ten acre olive orchard, 4 years old; plenty water, choice land, location. Price \$6000. **G. W. West, Exeter, California.**

**For Sale or Exchange**—4 acres in city of Santa Cruz, for Los Angeles or Orange County acreage. **William Richard, Santa Cruz, Cal.**

**40 acres choice level land,** improved, at sacrifice. No trades. **J. L. Buck, Chowchilla, California.**

GOVERNMENT LAND

**New Openings**—April 29—300,000 acres moist agricultural Oregon railroad land adjoining California. Get county maps, Jackson, Josephine, Douglas and Curry, \$2.50 each, and get land held fifty years by railroad, adjoining improved land. Worth \$16,000 per 160. California County sectional maps showing Government land \$2.50 any county. **Joseph Clark, Sacramento.**

TURKEYS

**Several Varieties**—Bourbon Red, White Holland turkey eggs, 50c each, 12 for \$5.00. Bronze, very choice, 30c. Houdan, Rhode Island Red, White Guinea eggs, 13—\$2.00. White Muscovy (quackless) duck eggs, 12—\$1.75. Eggs prepaid if by parcel post. Turkeys in separate wire covered yards. Range alternately. **Mrs. B. Hocking, Guasti, California. Winner of Champions, Specials and many First Prizes.**

**Mammoth Bronze turkey leaders of Imperial Valley** toms, 8 months weight 26 to 30 lbs., price \$15.00 to \$25.00 each. **E. V. Blaschko, Silsbee, Cal.**

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**Wanted**—Place as foreman. Advertiser is thorough in all lines farming, fruit growing and care of livestock. Experienced in working all kinds of labor, both tenant and wage system. Address **D., care Cultivator.**

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GOATS

**Toggenburg Milch Goats**—**Rae F. Williams, Federal Realty Building, Oakland, Cal.**

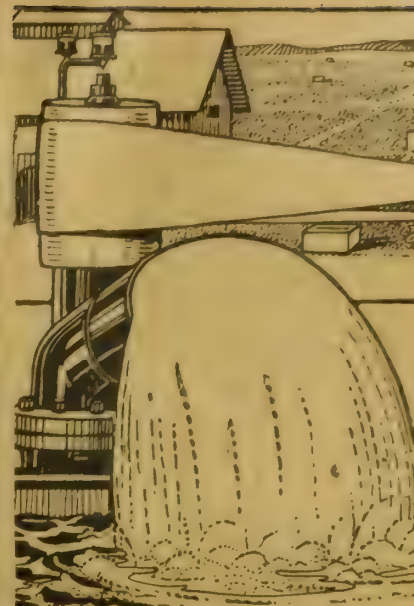
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## Keep a Chicken

Written for California Cultivator by Jean A. Koethen

**I**F EVERY hen laid an egg every day, one chicken in the back yard might help out the family living considerably, but unfortunately hens, like goats, are not constant producers. Allowance must be made for resting and molting and broodiness and contrariness, and bad weather. One authority says two hens for each member of the family is about right. This would be eight hens for a family of four, and this is plenty. Indeed, six good layers will furnish all the eggs a family of four needs. If one enjoys the care of hens, and doesn't mind hurrying home in the late afternoon to feed them, twelve hens will be better than eight or six. They will lay eggs for a large family and require but little more room than the smaller flock.

The mistake many backlotterers make is in thinking that if 12 hens are profitable 20 will be more profitable. As soon as you go above a dozen the feed bills begin to mount up, while the price received for market eggs does not keep pace. It is not easy on a single town lot to raise green feed for more than a dozen hens, and green feed is a tremendously important item. Then the house must be larger, the run bigger, or there will be crowding, and a whole train of disastrous results.

But number is not the chief item in the backlot flock. We want not merely hens, but good hens. At least we ought to want them. I am not at all sure that the average backlotter, in spite of all the educational work done by poultry shows, really wants good hens. Most backlotterers care vastly more about the cost of a hen than they do about her looks or breeding. Eggs at a dollar a setting and laying hens at a dollar apiece are their ideal, and it is very hard to make them understand that it isn't possible to raise a hen to laying age for a dollar or to produce good hatching eggs for that price. It is something, however, that the general public has reached the point where it is willing and even anxious to keep hens. A love for good poultry will surely develop in time. When one has once kept standard bred hens he will never keep anything else.

The best place for the backlot chicken house is in the highest corner of the backyard. Moisture should drain away from it instead of into it. Let it front south or east, according to convenience, so that it may catch at least the morning sun. Don't put the house against a high fence if you can help it. In the exceptional hot spell of summer it is the free current of air that saves the hens. If you cannot get away from the fence have a gate that can be opened when necessary. For 12 hens a house six feet square gives ample room if the whole floor is allowed for scratching. A portable coop 6x4 will answer in most seasons. This may be built of 1x2 and covered with tarred paper or with a shingle roof and burlap sides. The objection to such a coop is that it does not give the protection hens need in rainy weather. They must either sit on the roosts or wander about in the rain. It would be a good plan to have a coop of this sort for summer use so that the hens may be moved while their house is cleaned and disinfected and their yard purified by a crop of greens.

For the backyard poultry house two yards are almost a necessity. One may be built behind the house, the other in front, or they may be at each side.

The size of the yard does not so much matter as the possibility of removing the hens from it and utilizing the rich soil for vegetables or greens. Such a plan does away with the necessity for constantly spading and digging and carrying out manure and makes a good garden possible with the smallest outlay of time and strength. A good way of arranging a double yard of this sort would be to fence off the rear 40 feet of the lot, dividing it lengthwise into two yards each 20x50 feet. Place the house at the upper end of the partition fence with a door into each yard. While the hens run in one yard a splendid garden may be grown in the other. Plant fruit trees from 15 to 20 feet apart in the yards, and you have a combination of chickens, garden and fruit which is hard to beat. If you wish to raise chicks, an additional yard will be needed. This may be taken off the end of one of the larger yards or put in a corner by itself. If you have a garage or feed house or shop, try to arrange the yard for the young chicks against the east side of this building. They will then be readily protected from the wind and can be moved into the house in extremely wet weather.

Which breed is best for the backlot hennery is still a matter of argument. The truth is that all breeds are good. Leghorns are not as popular for the backlot as the heavier breeds because they are less easily controlled and not as good for the table, but this is a matter of taste. I find the Rhode Island Red is a more general favorite in my neighborhood than any other breed, but this I am satisfied is because few persons realize the great value of the Orpington as a dual purpose fowl. The Barred Rock is not as popular West or East, and the same may be said of the Wyandotte. The point is to find a breed you like; don't be satisfied with what your neighbors think. Then get the best stock you can find of that breed, remembering always that eggs are the real test of a hen's worth. Get fine feathers if you can, but be sure of eggs first.

Many authorities are predicting a boom for the poultry industry, with higher prices than ever before, etc. Let us not be misled by these glowing predictions. Undoubtedly prices will be higher. They are higher now and will remain so. But there seems no reasonable prospect of any great drop in the price of feed. The backlotter will do well if he keeps his mind off the idea of his hens as a commercial asset and thinks of them rather as a great help in the economical running of his household. Not only will they provide the best of food at a reasonable price, but they utilize the waste from kitchen and garden and furnish manure for the growing of more garden. When all these items are considered there is no question that backlot hens pay and pay well. More important still is the fact that every person who produces a dozen eggs or a "springer" is doing just that much toward feeding the world. Whether or not the eggs and the "springer" cost him all they are worth is beside the question. The great thing today is not money but food, food at any cost.

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# Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

## Loss in Raising Chicks

What would be the normal per cent of loss on 1000 baby chicks, purchased in February, until they were four months old? How many chicks do the large poultry plants figure on raising out of that number? — Subscriber, Vista.

This question was submitted to J. M. Davison, president of the Poultry Producers' Association. Mr. Davison replied that the large poultryman who raises thousands of chicks every year expects a loss of about 20 per cent. The number of chicks raised to four months of age varies from year to year, some years being as high as 95 per cent, and others falling considerably below 80 per cent, but the poultryman figures that he is doing about as well as can be expected if he raises 800 chicks out of 1000.—J. A. K.

## Eucalyptus from Cuttings

Is there any record of eucalyptus having been propagated by cuttings? If so, when, by whom, and what varieties?—Subscriber, Lakeside.

The propagation of eucalyptus is so very easy with seed that we do not think its propagation by use of cuttings has ever been followed other than for occasional trees. We have seen Eucalyptus globulus growing from cutting accidentally made and plowed under. Have our subscribers information along that line?

## Protecting Trees from Sun

I had some almond trees set out last spring and the cutworms and ants ate the buds. I put tanglefoot around the trees, but I thought it might girdle them so this spring I cut through it several times with a knife as they spread. Will they need protection from the sun?—Subscriber, Chico.

That would depend upon the condition of the tree somewhat. If strong and lusty growing presumably no harm would come, especially if trees have been headed low and are thereby more or less protected by leaf growth. However, it is a very simple matter to protect either with burlap or even old newspapers.

## Rust on Snapdragons

Am sending small branch of snapdragon covered with some kind of fungus growth. I never had anything like it before, but a neighbor had it on her plants last year and it killed them, so I would like to know what to do for it. So far it is only on the old plants and I want to kill it out before it gets on the young ones.—Subscriber, San Rafael.

Prof. J. T. Barrett of the state university answers: "The fungus submitted is a rust, one of the Puccinias, which is very common upon snapdragon, sometimes entirely destroying the plants. Like most rusts, it is not easy to control. However, it may be reduced if the plants are sprayed when the first indication of the rust appears, with a weak Bordeaux mixture. Some growers object to the use of the Bordeaux because it discolors the foliage of the plants. I am inclined to believe that if the plants were sprayed even before blooming began that this would materially check the development of the fungus."

## Applying Lime

I have ordered two cars of ground limestone and wish to ask you what is the best way to apply it. I have a heavy cover crop on ground now which I am to plow under and wish to

know whether it would be best to put it on top of cover crop and plow under or wait until I get plowed and then apply and work in or wait until fall.—Subscriber, Puente.

Apply before plowing. Perhaps the most economical method and also the most satisfactory is to use ordinary manure spreader to make this application. Usually one to two tons per acre is applied according to conditions of soil.

## Watering Hogs

How can a sanitary drinking trough for hogs be made?—Subscriber, Norwalk.

Here is a suggestion from the book called "Swine in America," by Coburn, and published by Orange Judd Co.

"I have a galvanized sheet iron pan two feet square and six inches deep, flaring a little at the top. Take a tight oil barrel and with a 5-8 inch bit bore two holes in the side so that when

the barrel is placed in the pan the holes will be one inch below the pan's top. Bore a two inch hole in the top of the barrel. Place the barrel in the pan, cork tightly the two holes at the

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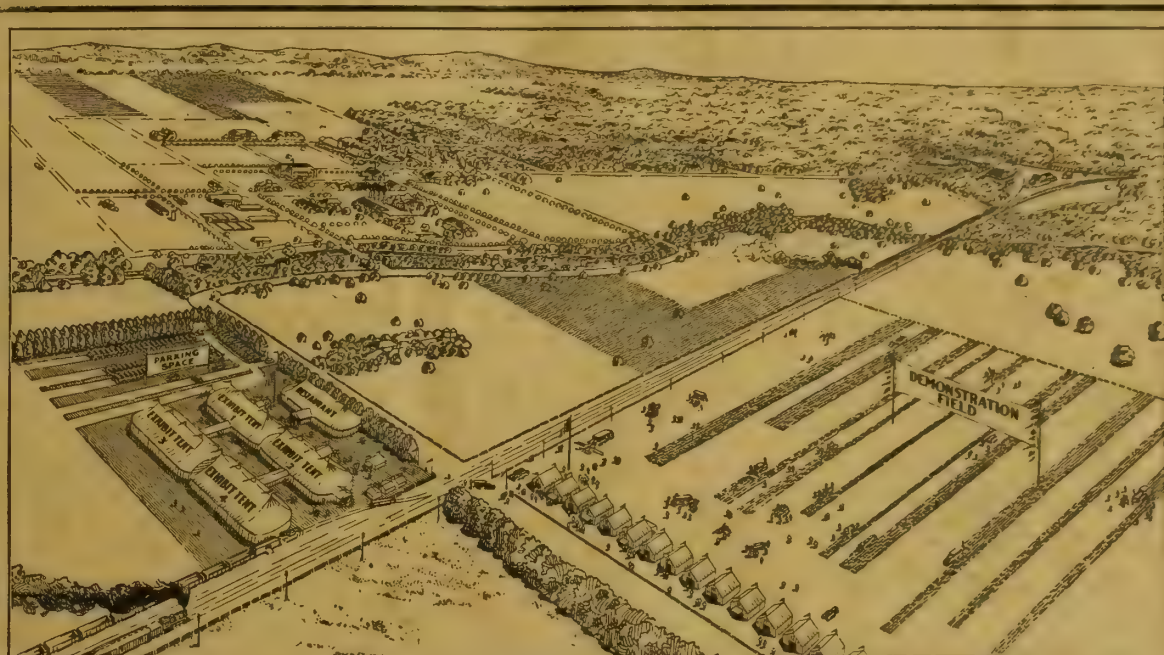
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### THE TIME

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### THE COST

The demonstration and all exhibits are absolutely free of charge,—your only expense is for meals and transportation.

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By S. P. train from San Francisco or Sacramento direct to the grounds. By auto to Davis—from there follow the signs—good roads all the way.

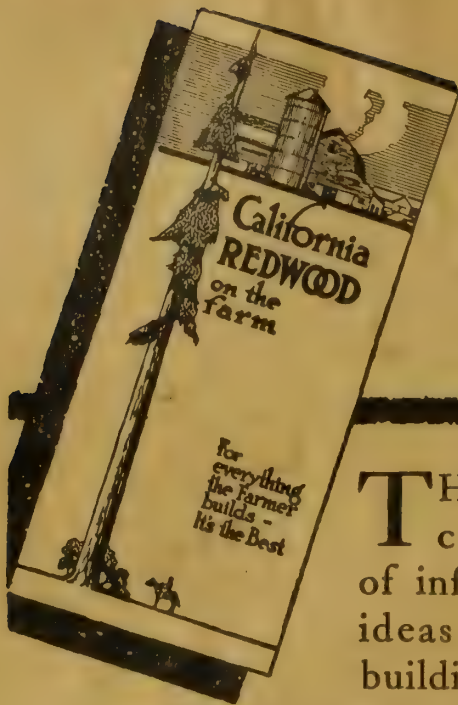
This mammoth show will be conducted three days only—April 17th, 18th and 19th—by the manufacturers and sellers of tractors and tractor-implements, on the University Farm at Davis, California. Practically every tractor sold on the Pacific Coast will be in actual operation there in one big field, with the leading makes of plows and other tractor implements. There will be big enclosed exhibits of tractor accessories, gas engines, motor trucks, etc. There will be important scientific tests conducted by the University. There will be much to see, much to learn and the demonstration and exhibits cost you nothing, except your expenses in coming to Davis. Don't fail to take advantage of this opportunity.

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bottom, and fill the barrel with water. Then cork the hole at the top and pull out the corks below. The water will run into the pan, cover the holes at the bottom, and will then stop until lowered by drinking again. The pan should sit level on a platform five or six feet apart. The hogs will drink at the corners. I have used three different kinds of patent hog waterers, but this is better than all, and cheaper."

### Lime or Lime Rock

Which is the best, the sugar factory lime or the ground lime stone for the average conditions of our Southern California soils? — Subscriber, Anaheim.

In this case we would use which-ever could be secured at the most satisfactory price. Bear in mind also that the sugar factory lime carries a very small portion of phosphoric acid and a small quantity of humus forming material. We do not think there would be any chemical difference.

### What to Plant

We own a small valley which contains about 30 acres from hillside to hillside on the north, and south and a cliff on the east, thus leaving the only opening toward the west and the ocean which is about half a mile distant. The soil is deep and of a sandy nature and is rich in vegetable mold since it is overgrown with sumac and other bushes of like nature and has never been under cultivation. What kind of producing tree would be most profitable to plant in such soil? Its elevation is about 50 feet above sea level and there is never any frost. Would walnuts do well there, and what would be the greatest drawback we would have to contend with? What is the average yield of one walnut tree when full grown? How soon after planting do they begin to bear fruit? We would also be grateful if some grower of walnut trees would write us his experience.—Subscriber, Del Mar.

Nothing is said about the water supply, which is essential in growing any kind of fruit tree. If there is a good supply of water lemons can be grown, and possibly apricots and walnuts will do well. Apricots ripen their fruit early and so will not require as much water as lemons and not require the late irrigation walnuts should have to make them fill well. The average crop of fruit of any kind is not what one should endeavor to produce as there is very little profit in the average crop, hence if the conditions are not such that special endeavor will produce more than the average the land should be used for other purposes. We think the land in question will produce better returns planted to beans than it will in fruit trees.—J. B. N.

### Angora Goats

Can you give me any information as to Angora goats? Where can one get pureblooded stock and at what price? Will the government furnish money to help one get started in this enterprise?—Subscriber, Holtville.

There are many Angora goat breeders in this state and other Coast states and pure blooded stock may be secured from them at prices ranging from \$10 to \$1000. This industry is proving profitable and we doubt not will extend in many sections where cheap pasturage is available. As to government aid that depends entirely upon the land, title, and value. The federal farm loan bank will advance money only on agricultural lands of known value. There is no department of the government which will advance money other than on such credit. For information regarding this write Federal Farm Loan Bank, Berkeley, California.

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## VEGETABLES IN NORTHERN CALIFORNIA

Continued from Page 433

the dried state to use in the kitchen. A few hours' soaking will bring them to almost the stage of fresh peas. It is a real war crop.

### Turnips

Make successional sowing. Early Snowball, a quick maturing and superior turnip, should be grown for this purpose. Those sown last month will need careful thinning some time this month, and an application of soot well dusted along the rows will help. This is a very valuable but little known fertilizer. It also acts against insect pests.

### Carrots

Thin this crop during the month as advised in our last notes; also continue to sow French Forcing.

### Beets

Make a sowing of Crosby's Egyptian and Morse's Improved Blood Turnip. Sow in rows 18 inches apart and thin as advised in our February notes.

### Lettuce

Make successional sowings of Los Angeles and May King and thin those sown last month. Use the strongest plants for transplanting six to eight inches apart.

### Onions

If thinning this crop has not yet been completed it should be attended to at once, and as this is a most valuable crop no thinnings should be wasted; if you are unable to plant these young seedlings out yourself give them to a friend who can use them. This is a war time crop also.

### Parsley

A sowing of Moss Curled or Double Curled should be made for late summer use. Later it may be thinned and transplanted.

### Tomatoes

Planting will be safe after about the first week in the month. The method usually adopted when planting a large acreage is to twist a small piece of newspaper around the plant and set in the ground this way to afford protection until the young plants become established. They should be planted four to six feet apart each way and will need careful watering for a time until they start to stand upright which will show they are getting established. They will mature in about 150 days.

The usual method in California is to allow the vines to ramble along the ground, but they are also grown tied to stakes carrying up one, two or three main stems, and picking out the young lateral shoots which develop in the axils of the branches. Oftentimes only about three bunches of fruit are allowed to develop on the main stem, which of course tends to produce superior fruit, but we have also seen splendid fruit grown on those plants which have been allowed to ramble undisturbed. The tomato is a rank grower, hence will require a fairly rich retentive soil. It is subject to several fungoid diseases, and as the spores from these winter in the soil it is not advisable to plant two years running on the same site.

### Corn

We think that every one with the available land should plant this important crop; it is the premier substitute for wheat and is likely to become a war winning factor. It is fairly easy to grow and gives good returns. There are numerous varieties for table and stock feed. For garden sow the popular varieties, Country

Gentleman, Golden Bantam and Golden Cream. Plant three feet apart each way, sowing three to five seeds in a group in rich soil, and after the crop is established keep the cultivator busy. Never let the cobs get over-ripe if you would have sweet tender table corn.

For field cultivation sow three to four feet apart each way. The varieties Morse's Hybrid Yellow Flint and Stanford Yellow Dent are excellent producers.

### Squash, Muskmelon and Watermelon

Make up small mounds with some richly manured soil, taking care to keep the manure at least 12 inches or more below the surface, and have these four feet apart each way. Sow two to five seeds to each mound and water well after sowing. The following squash and pumpkins are recommended: Early White Bush Scallop, Boston Marrow and Hubbard; pumpkins, California Field and Morse's Marrow. The Vegetable Marrow is a European type, classed here with the squash. The best muskmelons are Goldlined Rocky Ford, Bay View, Persian, Honey Dew and Golden Beauty Casaba; watermelons, Georgia Rattlesnake, Angeleno and Kleckley's Sweets.

### Cucumber

The same cultural methods as advised for squash and melons will apply to this crop. They are like the above mentioned, likely to succeed best in richly manured mounds and should be well irrigated throughout the summer. Sow late in the month Arlington White Spire, Long Green, Boston Pickling and the Lemon, a small lemon type cucumber, excellent for table.

### Peppers

These may be sown in pots or boxes at once, placed in a warm situation and later transplanted to the open ground, or plants may be secured from your local nurseryman. The most popular are Chinese Giant, very largely used for stuffing, Pimiento pepper, very mild flavor, Red Cherry and Red Chili used in sauce making. Plant six inches apart.

### Okra

This little known vegetable is used largely in soups and also boiled when young, the seed pods being used. Seeds should be sown as advised for peppers, and the following are good varieties: Mammoth Long Pod and White Velvet.

### Egg Plant

Sow seed as advised for peppers and follow same cultural directions. Black Beauty is the best variety.

### Leeks

These, if sown in February as advised, should now be making fine seedlings and may be transplanted to boxes or a small seed bed about four inches apart. Prepare trenches 18 inches deep richly manured for this crop.

### Celery

Make up a box of fairly rich soil and place in a warm situation. Sow Golden Self Blanching, Columbia and White Plume. Trenches should be prepared as advised for the culture of leeks.

### Beans, Runner and Dwarf

For the garden the varieties generally grown are Pole or Runners, Kentucky Wonder, Scarlet Runner, and Burger's Green Pod. Among the dwarf beans are Golden Wax, Davis White Wax, Refugee and Stringless Green Pod. For dry districts a very profitable shell bean is the White Tepary. The Canadian Wonder is a very hardy variety and the pods are used while young.

Sow the seeds in rows 18 to 20 inches apart and keep the ground well cultivated between the rows. They enjoy a light soil and should not be sown much before the middle of the month.

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He bringeth me to the clear fountains of instruction,  
Little by little he showeth me the beauty of truth.

The world is a great book that He hath written,  
He turneth the leaves for me slowly;  
They are all inscribed with images and letters,  
He poureth light on the pictures and the words.

He taketh me by the hand to the hill-top of vision  
And my soul is glad when I perceive his meaning;  
In the valley also he walketh beside me,  
In the dark places he whispereth to my heart.

Even though my lesson be hard, it is not hopeless,  
For the Lord is patient with his slow scholar;  
He will wait a while for my weakness,  
And help me to read the truth through tears.

—Henry Van Dyke.

### SUSIE BONNEY'S DOG

**T**HE old yellow dog, rousing all too leisurely from his nap in the roadway, was hurled in a tumbled heap into the weed-grown gutter in front of Lem Staniford's grocery, as the rushing automobile sped by in a cloud of dust. A moment later, in response to his piercing howls of protest, Lemuel, Lucius, his clerk, a customer or so, and the entire informal social club that held perpetual session on Lem's upended barrels and boxes had boiled over into the street and gathered round the victim. Uncle Si Bonney, with a half-sobbing exclamation, dropped to his rheumatic old knees and began feeling for injuries.

"Feller in the devil-wagon never so much as looked back," said Uncle Eli Emmons indignantly. "He ain't killed the poor critter, has he, Si? He'd oughter be arrested—runnin' down a

peaceable dog that might's well ha' been a person as not, and streakin' ahead like blazes, never carin' what he left behind him. He'd oughter be shot! Ye can't do nothin' with Jugo-Nuts like that 'cept pot 'em as they pass. It's Susie's dog, ain't it? I wisht I'd hed my old pistol; bet he wouldn't ha' got round the turn then!"

"You'd ha' given some of us a turn, though, Uncle Eli," remarked Lem good naturedly. "That pistol of yours is about as likely to go off one end as t'other. Say, Uncle Si, is he hurt bad? Susie'll feel awful!"

"I dunno whether he's hurt bad or not," quavered Uncle Si, continuing to explore tenderly, while the dog winced occasionally from his hand with a warning snap that was a warning only, followed immediately by an apologetic lap of the moist tongue. "There, there, Zip! Poor old Zip! Poor old boy! My land, I dunno what Susie'd do if he should hev to be killed. I gave him to her myself, her fifth birthday, when he was a pup, and she named him Zip, straight off, and they've grown up together. Zow-ee! Lie still, I tell ye, Zip! That you, Dr. Pedbury? My, my, I'm glad you was passin'! Say, I don't s'pose you calc'late to tend out on animals, but the poor critter's Susie's dog—"

"Compound fracture of the wagging apparatus, doctor?" inquired Lem jovially, as Dr. Pedbury jumped down and began to investigate. "I thought so! Somethin' mighty wrong with old Zip's tail when it ain't waggin'!"

"Couldn't ye splice him up in splints someways, doctor?" begged Uncle Si. "He's pretty old and I dare say 'twould be sense to chloroform him, but I jest darsn't face Susie and tell her!"

Dr. Pedbury shook his head. "Bone too badly crushed. I could amputate, though. A docked tail isn't so bad; maybe Susie'd think it was stylish. My own little girl's got a pup; she'd love him just the same if he limped on three legs and hadn't an ear to cock or a tail to wag. How about amputation, Uncle Si?"

Promptly the suggestion was accepted. Lem's shed became an improvised hospital, and Dr. Pedbury operated before an interested audience. Zip stood it well, but he emerged from the anaesthetic with such an absurdly surprised air, turning his head this way and that to gaze upon a disordered universe, wabbling tipsily upon his hitherto reputable and discreet legs, lolling a reprehensible tongue at his betters and displaying altogether such a pervading air of disolute helplessness, that the onlookers burst into laughter. Nothing further was needed to bring the old dog completely to. Zip hated ridicule. Profoundly mortified, he endeavored to tuck between his legs the tail that was not there to tuck, and crouched tremblingly between Uncle Si's knees.

"It's all right, Zip; it's all right!" Uncle Si consoled him. "Here, you pack of grinning zanies, don't ye know a dog has feelin's? You're a sure-enough bobtail, Zip, old boy, but Susie'll be comin' home from gran'ma's soon, and she won't laugh at ye. Love ye most to death, she will—Dr. Pedbury knows! That's the woman of it, ain't it, doctor? More a feller's bunged up and no account and mis'erable, more they'll fuss over him, like they couldn't do enough. Feel like ye could toddle along home, Zippy? Time we was movin' on."

"No, ye don't, Si!" offered Solomon Fearing, whose hack was standing outside. "I ain't got a passenger; you and Zip hop in and I'll give ye a lift. I had to laugh at the critter, comin' out of his jag, he was so comical; but ye needn't fly off the handle about it."

"I don't know if dog biscuit's the proper sort of invalid diet," suggested Lem, making honorable amends in his turn, "but seein' that guava jelly and blomonge wouldn't exactly meet the case—"

Sam Fynes chuckled, and went one better. "Say, Si!" he contributed. "If ye'll stop to the store, I got a roll of blue ribbon, jest a mite imperfect but awful pretty. Ye might tie a blue bow on the critter, so's he'd look kind of gay and cheerful when Susie sees him fust."

"You're reel kind, all of ye," said Uncle Si, entirely mollified. "Come along, Zippy boy; everyone's your

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friend, and you're friends with every one, ef ye can't wag good-by to 'em."

There was the slam of a carriage door and the lessening sound of wheels.

"I wonder," piped up Uncle Eli Emmons reflectively, "ef Zip'll keep right on chasin' Almeria's Manx cat like he's al'ays used to, or ef he'll hev too much feller feelin's?"—Youth's Companion.

#### SUGARLESS SWEETS

By Home Economics Department,  
New York College of Agriculture

**B**EFORE the war practically the entire supply of beet sugar for the world, with the exception of 733,000 tons produced in the United States, was grown in Central Europe in the countries now engaged in the struggle. Germany, Austria-Hungary and Russia alone produced 67.4 per cent of the total beet sugar supply and about one-third of the entire sugar supply of the world. England, before the war the largest importer of sugar in the world except the United States, got nearly a third of her sugar supply from Germany and Austria. With the withdrawal of the sugar exports of these two heavily producing countries, likewise of Russia, and the sugar beet fields of Belgium and part of France in the hands of Germany, it is easy to see why the Allies' supply of sugar has shrunk. To make up this deficiency the United States has exported more than 18 times as much in 1917 and 19 times as much in 1916 as in the three years' average before the war.

These simple outstanding facts make it easy to understand why there is less sugar to be had, with no likelihood of the available amount of sugar being increased until war is ended. Changing our habits in the use of sugar is, therefore, a necessity as long as the war lasts. England has cut down her sugar consumption from 93 1-3 pounds a person a year to 26 pounds, or an ounce a day a person. France is living on a per capita war ration of 18 pounds a person a year and Italy on 12 pounds. What Americans are asked to do is to save seven ounces a week for each person, a reduction from 90 pounds a year a person to 67 pounds. That does not mean even deprivation; it means only substitution of the many sweets available in this country which are not being shipped abroad—for example, maple sugar and syrup, corn syrup, honey and molasses.

In practically all sweetened dishes,

an ingenious cook can substitute other sweetening for the customary white sugar. Some experimenting is necessary in most cases, since the other sugars and syrups vary greatly in sweetening power; and when used in large amounts the effect of the liquid of the syrups must be taken into account. There is so wide a variation in syrups and molasses that it is difficult to give even general proportions. Honey has about the same sweetening value as sugar, maple syrup is sweeter, and corn syrup is less sweet. It has been stated that when a cup of honey is used to replace a cup of sugar, the liquid in the recipe should be decreased one-fourth.

Aside from using sugar substitutes in cookies, desserts and other made dishes that require sweetening, a considerable quantity of sugar may be saved in every household by the conscientious use of some sugar substitute with breakfast cereals, in beverages, and in countless other ways in which sugar has been freely and often unnecessarily used. Raisins, dried strawberries, dried pears, and other dried fruits and fruit pastes may be used on breakfast cereals, or as confections. Fruit marmalades, butters and jellies should be used at this time to take the place of the ordinary sweetening, not as accessories to a meal.

#### Cookies

With a little experimenting other cereals that may be plentiful in certain localities may be used in place of those given in these recipes, but the difficulty lies in the difference in thickening power of the various cereals.

#### Chocolate Buckwheat Cookies

One-third cup fat, one cup corn syrup, one-fourth cup sour milk, one-half teaspoon soda, one-fourth teaspoon salt, three cups buckwheat flour or enough flour to make a stiff dough, two tablespoons melted chocolate, one-half teaspoon vanilla.

Cream the fat and mix it with the syrup. Add the sifted dry ingredients, the chocolate and the vanilla. Roll the dough thin, cut it and bake the cookies in a moderate oven.

#### Peanut Butter Cookies

Six tablespoons fat, one-fourth cup peanut butter, one cup molasses, one-fourth cup sour milk, one-half teaspoon soda, one teaspoon baking powder, three and one-fourth cups buckwheat flour, or sufficient to make dough stiff enough to roll.

Mix the ingredients in the order in which they are given, adding the sifted dry ingredients last. Roll the dough, shape the cookies with a small cutter, and bake them in a moderate oven.

#### Cornmeal and Rolled Oats Cookies

One cup cornmeal, one cup rolled oats, one cup molasses, one teaspoon salt, one cup sour milk, one-half cup fat, one teaspoon soda, one cup buckwheat flour, one-half teaspoon nutmeg, one-fourth teaspoon ginger.

Heat the cornmeal, the rolled oats, the molasses, the salt and the milk together, stirring the mixture constantly until it becomes a thick paste. Remove it from the fire, and add fat and the sifted soda, flour and spices. Allow the mixture to stand until it is cold. Roll it thin, cut it with a small cutter and bake the cookies in a moderately hot oven.

#### WOMEN FOOD AGENTS MEET

Conferences of women directors of food conservation and county food administrators from practically every county in the state were held in San Francisco last Tuesday and Wednesday. Important problems of food conservation and production and the elimination of waste were discussed.

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From now until next harvest watch your grocery list or there will be no groceries to list.

In 1913, Europe produced 43 per cent of the world's sugar; since then she has had other engagements.



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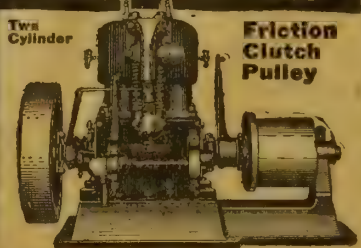
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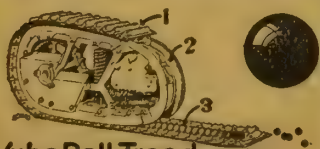
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## Los Angeles Market

Los Angeles, April 3, 1918.

### BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....42  
Dairy Exchange price past week on extras.  
Mar. 27 28 29 30 Apr.1 2  
'18 42 42 42 42 42  
Rcts. wk. ending April 2, 269,000 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....28½  
Domestic Swiss .....37

### EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh Extras .....37  
Pullet .....36  
Case Count .....36  
Dairy Exchange prices past week on fresh extras.  
Mar. 27 28 29 30 Apr.1 2  
'18 39 39 38 38 37  
Rcts. wk. ending April 2, 6489 cases.

### POULTRY

We quote to producers:  
Food administration orders hens sold for producing purposes only till April 30.  
Broilers .....34@38  
Fryers .....36  
Roasters, 3 lbs. and up .....34  
Ducks, lb. ....25@28  
Roasters, old .....14  
Turkeys .....29@33  
Geese, lb. ....23

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, March 27, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. ....10.50@11.00  
Hefers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....4.00@5.00

Hogs—  
Av. 125 lbs. ....14.75  
Av. 150 lbs. ....15.75  
Av. 175-225 lbs. ....16.75  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers .....12.00  
Ewes .....10.00  
Lams .....13.50@14.00  
Yearlings .....10.50@11.00

### POTATOES

Wholesale selling price:  
Oregon Early Rose .....2.25  
Northern Burbank, cwt. ....1.30@1.35  
Idaho Russets .....1.15@1.20  
Locals .....1.20@1.25

### ONIONS

Wholesale selling price, cwt.:  
Brown .....1.10  
White .....3.00  
Garlic .....6

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....75@1.00  
Jerusalem, lb. ....7½  
Asparagus, green, 11@12; white .....12  
Beets, sk. ....2.00  
Brussels Sprouts, lb. ....14@15  
Cabbage, lb. 2½; sk. ....1.65  
Red, lb. ....5  
Carrots, doz. ....30  
Cauliflower, doz. ....1.25  
Celery, doz. ....70  
Cucumbers—Hothouse, doz. ....75@2.50  
Egg Plant, lb. ....25  
Horseradish, lb. ....15  
Lettuce, doz. ....25  
Leeks .....20  
Mint, doz. ....40  
Onions, green, doz. ....25  
Peas, Tel., lb. ....8½@9  
Peppers, Chili, lb. ....30  
Parsnips, doz. ....30  
Parsley, doz. ....35  
Radish, doz. ....20  
Rhubarb .....1.25@2.25  
Strawberry .....2.50  
Romaine, doz. ....40  
Spinach, lb. ....30  
Squash—Crookneck .....70@75  
Hubbard, lb. ....3½  
Summer, cr. ....2.50  
Tomatoes, lug .....2.25  
Turnips, doz. ....30  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.75  
King David .....2.00@2.25  
W. W. Pearmain .....1.65@2.25  
Spitzenberg .....2.50@3.00  
Y. Newton .....1.65@2.25  
Bananas, lb. ....5½@6  
Loquats, lb. ....11  
Pears, Winter Nellis, lug .....2.25

### CITRUS

Lemons, packed, 5.50@5.75; loose .....4.50  
Juice .....3.50  
Orange—Navels, bx. ....4.25@8.00  
Grapefruit .....3.00  
Limes, basket .....75  
Tangerines, lug .....2.00

### DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, ½c less.  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 16½; extra ch., 17½; fy., 18½; pears, 12; peaches, ch., 11; ex. ch., 12; fy., 12½; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 15½; 40-50s, 14-18; 50-60s, 13½; 60-70s, 12-18; 70-80s, 11½.  
Figs—Calimyrnas, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
J. K. L. ....25  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:

No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....24  
Budded, Diamond Brand .....16  
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

### RICE

See San Francisco rice market.

### BEANS

These are prices made by wholesaler to retailer.

Lady Washington .....14.50  
Limas .....14.50  
Pinks .....9.25  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....14.50  
Blackeyes .....10.00  
Tepary .....10.00@11.00  
Lentils .....25.00

### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:

The continued rains have caused a drop in all grades of hay of from \$1.00 to \$2.00. The supply is said to be sufficient to carry till new crop comes in.  
Tame Oat .....28.00@30.00  
Volunteer Oat .....16.00@18.00  
Wheat .....25.00@28.00  
Barley .....26.00@29.00  
Alfalfa .....26.00@28.00

The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

### GRAIN AND FEEDSTUFFS

The grain and feed market is not yet stabilized, and no quotations can be secured, and under the government regulations it seems that it would be practically impossible to give any quotation which will be of any value whatever. On this point the Great Western Milling Company of Los Angeles writes:

"We are getting out a small price list at the present time on grain and feed but we hardly think it would be advisable to publish this inasmuch as prices are not stabilized to any extent at the present time. Each of the mills is selling grain at actual cost plus a profit, and naturally these costs vary considerably, as a mill which has barley on hand purchased two or three months ago at a cost of \$3.20 will be forced to sell cheaper than one that purchased barley recently at a cost of \$3.50 or \$3.60."

## San Francisco Markets

San Francisco, April 2, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras .....43  
Prime firsts .....42½  
Prices on butter are practically 15 cents above year ago this date.

Prices Extras past week and year ago:  
Mar. 26 27 28 29 30 Apr.1  
'18 46½ 46½ 45 43 43  
'17 35½ 36 36 37½  
Rcts. wk. ending April 1, 481,500 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 26; Y. Am. ....26½  
Jack cheese, full cream .....26@27  
Half skim .....14@17

### EGGS

Extras .....39  
Firsts .....37  
Selected Pullets .....38  
Firsts .....37  
Prices Extra past wk. and yr ago:  
Mar. 26 27 28 29 30 Apr.1  
'18 40 40 39½ 39 39  
'17 27 27½ 27½ 29  
Rcts. wk. ending April 1, 19,671 cases.

### POULTRY

We quote from producers, lb.:  
The food administration forbids sale of hens for meat until after April 30.

Roosters .....26@40  
Broilers—¾ to 1½ lbs., 35@40; 1½ to 2 lbs., 40@45; 2½ to 3 lbs., 40@46.  
Squabs, doz. ....3.50@5.00  
Ducks .....25@30  
Geese .....27@30  
Belgian Hares, live, lb. ....20@21  
Turkeys, dr., 35@37; live .....28@30

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 10½@12; thin, 7@10; cows and heifers, 8@10; thin, 6½@7½; calves, 8@11.

Sheep—Lb. gross weight: Fat, unshorn wethers, 14½@15; ewes, 12@12½; lambs, yearlings, 16@16½; shorn sheep, 1½@2 less.

Hogs—Hard grain-fed, weighing 100 to 140 lbs., 15½; 140 to 300 lbs., 15½; 300 to 400 lbs., 16½.

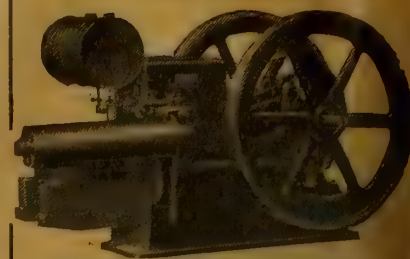
### POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks .....1.10@1.50  
River .....90@1.30  
Yakima Gems .....1.40@1.50  
Sweets .....5.00@7.00  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.50@1.75; high top, 1.50@1.75; Garnet Chile, 2.75@3.00; White Rose, 2.00@2.25; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

### ONIONS

Wholesale selling price on wharf, cwt.:

## WITTE IRRIGATING ENGINES



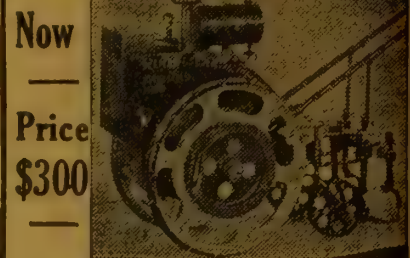
### Kerosene-Distillate 2 to 22 H. P.

Pump your water with a WITTE. All you need is a centrifugal and my Special Model Kerosene-Distillate Engine. I can lay your engine down at least cost. Save the middleman's profit—Get your engine NOW, while prices are still low. Have reliable power for all your work. Made in standard sizes—2, 3, 4, 5, 8, 12, 16 and 22 H. P. Battery or magneto equipment. I am in a position to offer you the best prices and make immediate shipment. 90-Day Trial—5-Year Signed Guarantee. Largest exclusive engine factory in the world selling direct to user. Cash, Payments, Bank Deposit or No Money Down. Suit yourself as to terms. Don't make a deal until you have investigated my offer.—Ed. H. Witte, President.

### WITTE ENGINE WORKS

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3101 Empire Bldg., Pittsburgh, Pa.

## Order Your BEEMAN Garden and Orchard Tractor



It will replace one horse  
It Plows, Discs, and Cultivates  
Immediate deliveries, 1918 deliveries limited  
Some Territory Still Open for Dealers

### Owen Magnetic Sales Corp.

701-703 West Seventh Street  
Corner of Hope St., Los Angeles, Cal.

## Fertilizer

Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

### Rogers Brown & Co.

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Los Angeles, Cal.

## PIPE-PIPE

100,000 feet New and Second-hand Pipe and Casing.  
Pipe—½, ¾, 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 15 inch.  
Casing—3, 3½, 3¾, 4, 4½, 4¾, 5, 5½, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6½-inch 20-lb. iron thread.  
Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 inch.  
All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

### ADAMS PIPE WORKS

Bay and Mateo Sts., Los Angeles, Cal.  
Phone: F1917; Bdry. 1284

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**F.E. MYERS & BRO.** 1362 ORANGE ST. ASHLAND, OHIO.



Australian Brown .....80@1.00  
Bermudas .....2.00@3.00  
Garlic, lb. ....3@3½

## VEGETABLES

## Wholesale selling price.

Artichokes, doz. ....20@40  
Asparagus, lb. ....4@6  
Beets, sk. ....1.25@1.35  
Brussel Sprouts, lb. ....5@7  
Carrots, sk. ....85@1.00  
Cauliflower, doz. ....30@40  
Celery, Delta, cr. ....1.00@1.75  
Cucumbers, bx. ....2.00@2.75  
Egg Plant, lb. ....15@17½  
Endive, lb. ....25@30  
Lettuce, cr., Southern, iced. ....1.15@1.35  
Uniced .....90@1.00  
Onions, green, bx. ....65@75  
Parsnips, sk. ....85@1.00  
Peas, lb. ....5@8  
Peppers, Bell, lb., 25@30; Chile .....12½@15  
Pumpkins, sk. ....85@1.00  
Rhubarb, bx. ....1.00@1.25  
Squash, Cream, lug .....75@1.00  
Tomatoes .....1.50@3.00  
Turnips, sk. ....75

## FRESH FRUITS

Apples — Spitzenburg, 2.00@2.50; Red 1.25@1.50; Newton Pippins, 1.35@1.75.  
Pears — Winter Nellis bx., 2.00@2.25; winter pears, lug, 1.50@1.75.  
Bananas, Hawaiian, bunch ....2.00@3.00  
Pineapple, doz. ....5.50@6.00  
Citrus Fruits—Lemons, bx., according to size, fy., 3.00@6.00; lemonettes, 2.00@3.50; grapefruit, fy., 2.50@3.25; ch., 2.00@2.50. Oranges—Bx., navel, fy., 4.50@7.50; ch., 4.00@6.00; mandarins and tangerines, per half orange box, 2.25@3.00; cr., 1.50@1.75.

## DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.

Peaches—Unpeeled, bulk basis, standard, 10; ch. 10½; extra ch., 11; fy., 11½.  
Apricots—Bulk basis: Standard, 13½; ch., 15; extra ch., 16½; fy., extra fy., 17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8; 40s, 8½; 30s, 9½.

Apples—In 50-lb. bxs., lb.: Fy., 10; extra ch., 15; ch., 15.  
Pears — Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.

Raisins—Cr.: Sun Maid, seeded, 10-oz. cartons, 4.20 for 48s and 6.15 for 36s; fy., 4.20 for 48s and 3.15 for 36s; do, 12-oz., 45 to cs., 5.25; ch., 10-oz. cartons, 3.00 for 36s; do, 12-oz. cartons, 45 to cs., 3.10. In bulk: Sundried, 1.75; fy., 1.90; ch., 1.75.

Sulphur-bleached Thompsons, ex. fy., 5.37½; fy., 5.12½; ch., 4.87½; soda-bleached, 4.75.

Loose: One-crown, 4.15; two-crown, 3.40; three-crown, nominal; four-crown, 3.20.

## NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. K. L., 19½; Ne Plus, 18½; Drakes, 16; hard shell, 11½.  
Chestnuts, Cal. lb. ....10@20  
Peanuts, Va. ....16  
Pecans, lb. ....19@20  
Pine Nuts .....22@25

## HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

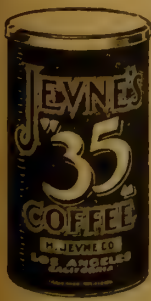
## BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....13.90@14.10  
Bayous .....9.25@9.50  
Small Whites .....Nominal  
Large Whites .....Nominal  
Mexican Reds .....9.40@9.60  
Blackeyes .....8.90@9.00  
Pinks .....8.20@8.35  
Red Kidney .....Nominal  
Cranberry .....Nominal  
Teparies .....10.50@11.00

## RICE

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

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"Send Me Jevne's '35,' Coffee"

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will appreciate Jevne's "35" Coffee.

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LOS ANGELES

## HAY

Under date of March 30, Scott, Magner & Miller says:

Receipts past week, 1536 tons. Several consignments to be sold for shippers' account arrived during the week. This is something that we have not seen before this year, as practically the entire crop has been purchased before shipment. This has been caused by dealers being shy about buying ahead, and therefore many of those anxious to sell have not found buyers and are not willing to hold it over at the present prices and wish to cash it before the new crop is available. We believe that the available hay will all be used before new crop. We consider the entire range at least \$2.00 per ton lower than last week.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the market. For prices to consumers charges of cartage, commission and handling must be added according to conditions.

Fancy Wheat Hay (light 5 wire bale) .....28.00@29.00  
No. 1 Wheat or Wheat and Oat Hay .....26.50@28.00  
No. 2 Wheat or Wheat and Oat Hay .....23.00@26.00  
Choice Tame Oat Hay .....26.00@28.00  
Other Tame Oat Hay .....23.00@25.00  
Wild Oat Hay .....22.00@24.00  
Barley Hay .....22.00@24.00  
Alfalfa .....20.00@22.00  
Stock Hay .....16.00@18.00  
No. 1 Barley Straw .....50@80  
Millet, recleaned .....5@5½  
Flax .....7@7½  
Hemp .....5@5½

## GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

## SEEDS

Prices in round lots, lb.:  
Millet, recleaned .....4½@5½  
Alfalfa, lb. ....20@21  
Flax .....6½@7  
Hemp .....4½@5½  
Rape .....2½@3

## Citrus Fruit Market

## Shipments

Shipment of citrus fruit from Southern California since November 1, 1917: Oranges, 6273 cars; lemons, 1650; total, 7923 cars. To same date last season: Oranges, 15,631; lemons, 2754; total, 18,385. From Central California to date this season: Oranges, 1998; lemons, 113; total, 2111. To same date last season: oranges, 4052; lemons, 164; total, 4216. From Northern California to date this season: Oranges, 203; to same date last season, 843.

## AT THE AUCTIONS

## March 27

New York: 12 oranges, 5 lem. Nav. 4.05-8.90, Seed. 5.80-6.40, Sweets, 6.65-7.00, lem. 4.85-6.65.

Boston: 8 cars, Nav. 4.50-7.50, Seed. 4.65-6.55, lem. 5.30-6.25.  
Cleveland: Nav. 3.50-6.85, Seed. 7.05, lem. 6.10-6.30.

## March 28

New York: Nav. 3.85-7.55, Sweets, 3.65-7.30, lem. 4.25-4.60.  
Boston: 7 cars. Nav. 3.90-6.50, Seed. 5.50-6.50, lem. 5.40-6.05.

## April 1

New York: 20 oranges, 8 lem. Nav. 3.15-8.40, Val. 5.05-5.95, Seed. 4.80-5.85, lem. 3.35-4.80, Tang. halves, 3.15-3.80.  
Cincinnati: 1 Nav. 1 lem. Nav. 6.45-6.90, lem. 6.40-6.80.

Boston: 12 cars. Nav. 4.10-7.10, Seed. 5.65-6.85, lem. 5.20-5.85.

## PARTIAL LIST OF FRUIT SHIPMENTS

From post card reports to the bureau of markets, United States department of agriculture, Miss Hoey makes report of the following shipments from California for the week of March 25 to April 1: Apples, 2; artichokes, 29; asparagus, 13; cabbage, 40; cauliflower, 105; celery, 47; fresh peas, 3; dried apples, 2; dried apricots, 2; dried beans, 33; dried peaches, 13; dried pears, 2; dried prunes, 19; lettuce, 89; mixed vegetables, 109; mixed fruit, 6; mixed fruit and vegetables, 2; mixed dried fruit, 3; onions, 7; potatoes, 45; raisins, 36; dried peas, 1; radishes, 1; rhubarb, 35; Mexican tomatoes into state, 25.

## MARKET NOTES

Celery growers of Florida have suffered greatly because of glutted transportation, and some producers have been ruined.

The first car of Valencia oranges shipped from Tulare County sold around \$7.25.

The potato market has been most disturbing, especially in California where \$1.00 and \$1.10 prices have prevailed. Eastern points report anywhere from \$1.00 to \$1.45.

Texas is reported as shipping immense quantities of onions. The output it is estimated will run close to 7000 cars. The car shortage is complicating the situation.

The Poultry Producers of Central California transacted practically double the business in February 1918 that it did in February 1917. Total cases handled, 6743.

## SWINE BREEDERS MEETING

Continued from Page 439

ting a wider margin than at first appears.

A fact that producers must not lose sight of is this, while the packers need to reform some of their practices, they are operating under conditions that do not obtain in the big primary markets of the corn belt. The average hog killed by California packers is a lower dresser than the Eastern hog. And further, the per-

centage of condemnations is alarmingly high in this state.

The next factors to consider are those relating to better methods of feeding and better hogs. Education is fast working improvement as regards feeding methods and better hogs. Both of these factors will eventually work themselves out satisfactorily and logically. The present high price of feed is causing the feeder to study the food problem more carefully than ever and is demonstrating that the efficient hog is the pure bred or high grade. As a matter of fact, a great many producers are selling their grade and scrub sows and are replacing them with fewer, but better bred animals.

From the above it must be evident that the business of pork production is facing several big problems, some of which are local so far as California is concerned. Some of the problems will be difficult to solve and their ultimate solution will depend on many unforeseen factors.

Some of the problems, especially those relating to marketing, are capable of solution providing the producer and the packer view the situation in a big constructive way. Each is dependent on the other and must be willing to do the fair thing. The proposition of cooperative marketing is one that is sound to the core and

can be made to save shippers the margins that have heretofore gone to the middleman. The question of feeds is the most difficult of solution. It is well to know that the various swine associations are alive to the situation and are not overlooking any opportunity to bring about more satisfactory conditions. Much has been accomplished, more remains to be accomplished, and the future demands that every man do his part.

## ON THE COAST

Secretary F. W. Harding of the American Shorthorn Breeders' Association is now on the Pacific Coast in order to get in closer personal touch with the Pacific slope Shorthorn activities.

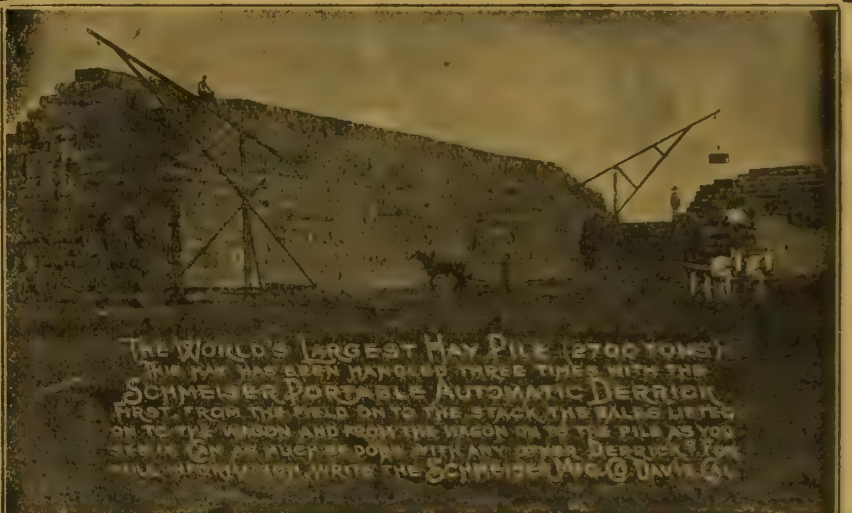
He will be in attendance at the California Shorthorn Breeders' annual meeting and sale and will visit various breeding establishments in the coast country in other states.

## WEATHER CONDITIONS

San Francisco, Cal., March 30, 1918.

Stations	Rainfall		Temp.	
	Wk.	Season	Norm.	Max. Min.
Eureka	1.28	22.75	38.34	62 42
Red Bluff	.73	11.23	21.30	84 42
Sacramento	1.24	8.34	16.87	78 44
San Francisco	.69	10.97	19.40	78 49
San Jose	.01	8.85	14.55	82 42
Fresno	.06	9.66	8.21	90 45
San Luis Obispo	.02	18.48	17.98	86 48
Los Angeles	.80	13.14	13.89	88 50
San Diego	.72	7.89	8.80	72 52

## "The Schmeiser Way Makes the Farm Pay"



If you are paying more than 35 cents per ton for stacking your hay, you are losing money. You can stack it for less than that if you use the

## Schmeiser Improved Portable Automatic Derrick

Will Do the Work of 12 Men

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Stacks hay baled or loose, Saves Labor, Saves Time, Saves Money. More Schmeiser Portable Automatic Derricks are sold on the Pacific Coast than all other hay stackers combined. The reason is:

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## Schmeiser Improved Portable Automatic Derrick

WE SELL MARTIN DITCHERS.

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SHAVINGS KEEP THE MOISTURE IN THE GROUND AND DO NOT DRAW THE HEAT.

## SHAVINGS

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## “ — and it builds them up”

From the time they are about five weeks old until they are eight weeks old, chicks require nourishing food, but not too violent or heating — in order to effect a good, healthy growth.

Remember — growing chicks are live, active little fellows and always hungry. They will eat anything and take on fat very fast. Therefore — you must be doubly careful about the food you give them. Otherwise they are apt to become too heavy for their legs and be troubled with indigestion. This retards their growth. Result? They become neither good layers nor good breeders.

If you want profitable chickens — give your growing chicks **SPERRY SUREGROW**. It contains the essential food units which growing chicks must have to build bone and muscle. It is economical, dependable, and it builds them up. It helps them “over the top” of their critical period.

The money you invest in **SUREGROW** will come back to you many times over in the increased health and vigor of your flock. You won't have to worry about digestive troubles, moulting and slow growth of chicks if you use this balanced ration.

The new edition of the Sperry booklet, “Makes Hens Happy” gives you the advice of practical poultry experts. It contains information that will help you to materially increase your poultry profits. A copy is yours for the asking — send for it today.

STOCK AND POULTRY FOOD DEPARTMENT

**SPERRY FLOUR CO.**

STOCKTON, CALIFORNIA



Stock and Poultry Food Department,  
SPERRY FLOUR CO.,  
152 Weber Ave., Stockton, Cal.

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Please send me, without charge, a copy of  
“Makes Hens Happy,” which contains directions  
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Address.....

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# CALIFORNIA CULTIVATOR

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An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

April 13, 1918

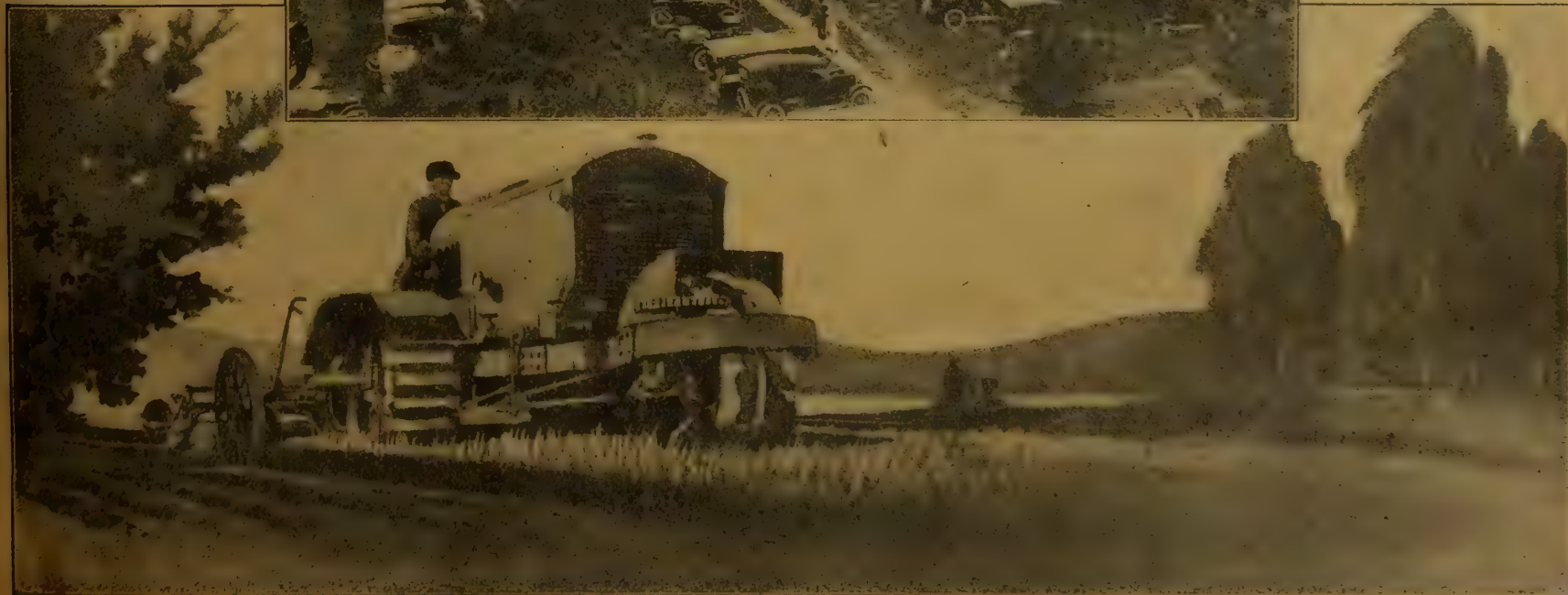
SAN FRANCISCO



Tractor  
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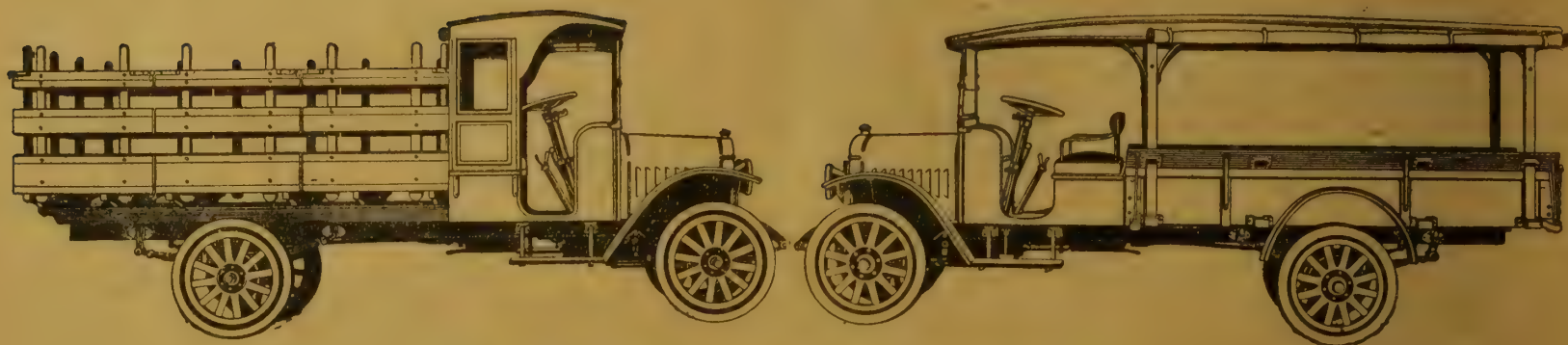




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## **MAXWELL TRUCK**

This truck costs little more than a first class team, wagon and harness. Costs less when you figure up-keep. Eats only when it works. Requires one-twenty-fifth the care and attention horses do. Travels the 7 or 12 or 16 miles to market, under load, in one-fourth the time.

The farm hand who formerly took all day to drive to mill with a load of grain can now go and return in two hours.

Here is a truck with all the features of \$5000 trucks, and sold under the same guarantee. Worm drive. Electric lights and generator. 10-foot loading space. Gas consumption, 16 miles to every gallon. A tire miser. Mechanical trouble practically unknown. Repair bills are too low to mention.

This Maxwell is built for the farm. Weighs 2500 pounds. Goes faster than heavier and more expensive trucks and goes where they daren't follow.

6600 Maxwell trucks are in service. 1100 on farms. Service records show a verdict of 99.6% perfect based on all the trucks now in use. You'll find no mechanical faults in the Maxwell. A safe investment and a paying one.

You save \$400 the day you buy this Maxwell truck, for its price is \$1085. And \$1085 is \$400 less than any other truck of similar capacity on the market.

\$1085 Chassis only, f. o. b. Detroit. Electric lights. Electric generator. Worm drive. 10-foot loading space. 2500 pounds. 16 miles on a gallon of gas.

MAXWELL MOTOR COMPANY,

DETROIT, MICH.

SAN FRANCISCO, CAL.

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# California Cultivator

Vol. L, No. 15

LOS ANGELES: APRIL 13, 1918

One Dollar Yearly

## More Land Without Buying It

Discontented Farmer Finds a "Farm Under His Farm" and Produces More Without Greater Investment. Written for California Cultivator



**T**HE farmer, who was made discontented with his lot in life by the story of a traveller who stopped at his house over night and told about an acre of diamonds somewhere in the world, sold his land and started out in quest of this great wealth.

After traveling for many weary years he returned, unsuccessful, to find that the purchaser of his farm had discovered coal under it and was wealthy.

Away off somewhere, at the foot of the rainbow, there may be a pot of gold, but it's a long and weary chase.

Dr. Van Hise in an address before the extension division at the University of California in February pointed out that there has been greater advance in science in the last 60 years than in the past 2000 years. Dr. Van Hise is the president of the University of Wisconsin, the agricultural college of which is one of the foremost farm schools in America.

He said that if the farmers in America would put into practice the proven scientific discoveries of the agricultural colleges that the crop yield would be doubled. There you have the reason for the heading of this article: More Land Without Buying It.

At the state fair at Sacramento last year a farmer told of experiences whereby crops had been doubled. He was careful to mention particulars and attributed the results to deep plowing. He said that with horses it was not practicable to attempt deep plowing in dry hard soil. With his tractor and plow, however, he had turned up ten to 14 inches of soil, the lower strata of which had never been called upon to add the strength of their fertility to the producing of a crop.

He plowed in the dry hot season between harvest and the fall rains, when the ground was baked, and the disk plow ripped it up in big clods, leaving the surface rough and uninviting to look at or walk over. The nitrogen in the air, however, permeated every crevice and awakened to productive life the latent power of fertility in each particle of this new, fresh soil. When the rains came the clods were already softened by the effect of the air, and welcomed the fructifying water. The clods disintegrated and melted into mulch, ready for the cultivator and the seed drill.

The result was a double sized crop. In other words, he had utilized double the number of acres without buying them. He had utilized the time between seasons with his tractor and made possible a crop production never before believed obtainable.

By rotating crops, by proper seed selection, by plowing under nitrogen-bearing growths and other methods, the farmers have improved production.

There are many advantages still to be obtained by using the proved scientific methods hinted at by Dr. Van Hise. But it can hardly be questioned that by deep plowing the result can be otherwise than favorable. By this method you call to your aid the stored-up forces of nature, release them to serve you, as the surface above plow-pan has done so long.

It is recognized, that, of course, to accomplish this result, you must have the equipment with the sufficient power to go down deep in the hard dry soil. That requires the force of a powerfully built tractor, one constructed to withstand the shock of contact with the resistance of 14 inches of hard-baked ground.

The farmer quoted above has a one-man outfit consisting of a sturdy tractor and field disk plow, and he makes them pay big dividends on the investment.

various types which have been brought into existence, the layman is in danger of confusion unless he studies a bit into the underlying principles of these different forms of power. Those who have attended tractor schools have had this fully explained by use of models before the classes, showing the various steps in the operations. At the Riverside school Prof. Davidson went fully into the construction and operation of the gas engine. An outline of his lectures has been given to us, and, while it is somewhat like a textbook, it has a



UNCLE SAM - "WELL HERE'S A SCRAP o' PAPER HE WON'T DESTROY IN A HURRY"

### THE TRACTOR ENGINE



**A**LL of us have a crude idea of the principles on which the original gas engine worked, but with the modern improvements and the

fund of information for the farmer who is contemplating purchasing a tractor, so we give that portion touching upon the engine almost entire:

...

PROF. J. B. DAVIDSON

The gas engine which furnishes power for the gas tractor is a heat engine. Its function is to convert the energy released by the combustion of fuel in the form of heat into mechanical energy, the energy of motion. The fuel is usually a petroleum product, such as gasoline, distillate, or kerosene. Natural and coal gas may be used in stationary engines where the fuel is available, and alcohol could be used if cheap enough. The liquids, however, must be converted into a gas or finely divided spray before combustion, so, in reality, all of such engines may be properly styled gas engines.

#### Internal Combustion

The gas engine is an internal combustion engine, the furnace is literally transferred to the inside of the engine. The process consists in mixing air and fuel in the form of gas or vapor in the proper proportions to support combustion and igniting them in a closed cylinder. The release of heat causes a sudden rise of temperature and a corresponding rise of pressure. This pressure is allowed to push on a moving piston doing work.

#### Combustion

The combustion of the fuel and the air mixture takes place so quickly that it partakes of the nature of an explosion, but it is not an instantaneous process. It takes a fraction of a second, say 1-200 to 1-50, for the flame to travel from one part of an engine cylinder to the other.

#### Advantages

The gas engine has many advantages over the external combustion engine usually represented by the steam boiler. The principal advantage is in the efficiency of the use of the fuel. Higher temperatures are realized and there is less heat carried away by the exhaust where a non-condensing engine is considered. The engine is of light weight and automatic in its action.

#### Disadvantages

The principal disadvantages of the gas engine are that there is no storage of heat and there are several distinct and necessary operations that must be performed at regular intervals.

#### Compression

The modern gas engine requires compression of the mixture of fuel and air or of air before combustion. The purpose of this is to secure higher temperatures, meaning greater efficiency and a smaller engine. This method is usually referred to as the Otto Cycle. Theoretically, the efficiency of a gas engine varies with the compression pressure but there is a practical limit to this compression. The compression pressure for gasoline is about 70

Continued on Page 458



Tractors Driven by Soldier Reserves in France



We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

# A Schmeiser Leveler of the "Giant" Type

## WILL WORK WONDERS ON YOUR FARM



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WE SEND THEM ON THREE DAYS' TRIAL

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

Send today for full information and our latest catalog of earth-moving machines.

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22 Mechanic St. Davis, Cal.

Manufacturers of

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## and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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From \$20 to \$30 per Thousand

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Selected buds, fine roots, guaranteed workmanship. Don't think of buying until you price our stock. Address Puente or Spadra, Cal.

100,000 big sour orange seedlings 10 inches and up.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

## Dairying in Relation to the Citrus Industry

By H. E. Van Norman, Dean University Farm School, Davis



WELL recognized students of the broad problems of agricultural development point out that no permanent system of agriculture has been built up that does not involve livestock as a part of its scheme. So well recognized is this in England, where long leases of agricultural lands are in vogue, that by legislative enactment there is provided a legal basis for allowing credit to the tenant for the manurial value of feeds bought and fed on the place. Also an allowance is made for the value of animal manures added to the land and which the renter may not have had the benefit of before giving up his lease.

Farm management investigations in the United States show that as a rule a single crop is less profitable in the long run and has rarely endured. It is a popular saying "that it is a wise man who does not put all his eggs into one basket." There seems to be an inter-dependence among agricultural crops that is essential to permanent agriculture. The great wheat areas of New York State, of the Red River Valley, and of the great Central California valleys have each in turn given, or are giving way to a diversified agriculture. A prominent apple grower in an Eastern state who has devoted a lifetime to the business and counts his primary business that of an orchardist, said that early in his experience he found it necessary to add a dairy herd for the purpose of fertility and also to insure the employment throughout the year of a group of men who became the leaders and pacemakers for the extra labor required during the seasons of peak load. An eminent grower of deciduous fruits in the Sacramento Valley finds that in order to market the crops that he finds it profitable to raise between his trees, he must have a dairy herd and pure bred at that. Also since his market for dairy products is cream, he raises pure bred hogs to market the skim milk. Prof. Shamel tells us every orange grower is also a dairy man.

And now comes the distinguished director of the citrus experiment station and tells us that the permanency of the citrus industry in California is going to depend upon its adoption of some form of animal husbandry as a contributing side line.

The industry must secure a dairyman for a partner or a neighbor, for, of course, the orange grower will not himself milk cows. Unfortunately, just when he has come to appreciate the value of stable manure from the city, the horseless wagon and carriage curtail the supply of manure, and a growing appreciation by the orchardist of the value of this material has brought about such competition for the decreasing amount that it has forced the price skyward. And yet we are told that the future of the citrus industry depends upon the development of a supply of animal manure to provide the nitrogen and organic matter for our orchard soils.

It would indeed be sad if a too long self sufficient California should find itself forced to follow the example of older states and appoint another commission some time in the future to study the problem of California's "abandoned farms" (i. e. abandoned

orange ranches), and provide shelter and maintenance for superannuated, jobless real estate merchants in this wonderful Southland; all because of the failure to heed the admonition "grow livestock and make manure to save the orange orchards."

Dr. Webber, in asking me as a dairyman to present some dairy facts for your thoughtful consideration, when the dedication of these buildings gives a new impetus to the development of the citrus industry, remarked in substance, "The more I study this problem the more I am impressed with the interlocking dependence that the many branches of agriculture have upon each other." As truly as that 'no man liveth to himself,' no branch of agriculture prospers alone indefinitely.

Assuming as a starting place in this discussion that each citrus tree requires 1½ pounds of nitrogen, an acre of 90 trees would require 135 pounds of nitrogen annually. Alfalfa is California's wonder crop in its ability to take the nitrogen from the air of the soil and lock it up in the plant. When fed to dairy cows 75 per cent of this nitrogen is voided in the manure, solid and liquid. Allowing the yields referred to in Circular 121, California experiment station, we have the following amount of nitrogen voided from the consumption of given yields of alfalfa hay by dairy cows:

### Amount of Nitrogen in Manure From Varying Yields of Alfalfa

Average state yield 3.5 tons of alfalfa per acre would furnish 210 pounds nitrogen in manure.

A safe estimate 5 tons alfalfa per acre would furnish 300 pounds nitrogen in manure.

A good yield 6 tons alfalfa per acre would furnish 360 pounds nitrogen in manure.

Extra good yield 8 tons alfalfa per acre would furnish 480 pounds nitrogen in manure.

### Amount of Alfalfa Hay Required by Cows of Various Capacity

To produce annually	Alfalfa required	Nitrogen voided in solid and liquid manure
160 lbs. butterfat	4.8 tons	288 lbs.
200 lbs. butterfat	5.0 tons	300 lbs.
250 lbs. butterfat	5.5 tons	330 lbs.
280 lbs. butterfat	5.7 tons	342 lbs.
300 lbs. butterfat	6.0 tons	360 lbs.
320 lbs. butterfat	6.1 tons	366 lbs.

A thousand pound cow producing annually 300 pounds of butterfat will require about six tons of alfalfa hay, which is the product of one acre of good alfalfa or its equivalent, to support her for one year.

If one acre of hay furnishes 360 pounds of nitrogen in the manure, allowing 1½ pounds per acre per tree, or 135 pounds per acre, there will be provided the necessary nitrogen for 2.6 acres of trees, providing all the nitrogen could be saved.

Since this is impossible, because of the difficulty of securing it all, preventing loss by decomposition, etc., we may figure that an acre of alfalfa would supply sufficient nitrogen for only 1½ to 2 acres of trees, depending upon the efficiency of the methods employed in saving it and on the amount required per tree. There are many questions that will arise, as for instance, the use of bedding to absorb the liquid manure, and the source of its supply, and the proper methods of



handling cow manure if bedding is not available. The discussion of these cannot be entered into at this time.

From the dairy standpoint, there must be provided a market for the milk; in the form of cream for butter making this can nearly always be secured. Prices for butterfat for the next few years are likely to run from 40 to 60 cents per pound, which with a yield of 250 to 300 pounds would suggest a gross income of from \$100 to \$135 per cow per year, leaving skim milk to be fed to calves or pigs, or both. Five to six hundred pounds of skimmilk can replace 100 pounds of corn, or similar grain, in the feeding of growing pigs. With an almost limitless market for good dairy cows, emphasis on the good, in the milk producing herds for our city milk supply, the raising of heifer calves on this skimmilk should offer a suitable market for it. If the whole milk can be sold for city consumption, present prices would indicate a market of from 70 cents to \$1.00 per pound for butterfat, less transportation.

With an era of high cereal prices and rising wages for farm labor because of war conditions; with the greater or less reduction in herds because of the discouragement over the failure of dairy products to rise in price as rapidly as other commodities, I anticipate increasingly attractive prices for dairy products for some years to come.

To insure the final success of the dairy branch of the industry, there should be included in its organization:

- (1) Facilities for the saving of the maximum amount of liquid and solid manure;
  - (2) The use of the best dairy types of cows irrespective of breeds or breeding;
  - (3) The feeding of every cow daily to her full working capacity;
  - (4) The keeping of systematic records of production as a guide and basis for the elimination of the unprofitable;
  - (5) The use of pure bred sires from cows of known producing ability;
  - (6) The replacing of the herd by high grade daughters from such a sire and the best producers of the herd.
- Cooperative effort in the marketing

of products; in the conduct of the testing and record keeping by means of cow testing associations; the co-operative purchase of pure bred sires; and the adoption of one definite breed in a community, all make for community prosperity.

So far, we have dealt with the dairy as an individual problem, leaving it to the individual to decide whether he can raise alfalfa between young or old trees and keep cows enough to consume it, or whether he must replace part of his present orchard with alfalfa, or whether he must buy or lease additional land on which to establish a dairy sufficient in size to supply his orchard's needs for nitrogen.

But the problem as I grasp it is larger than that of the individual. I am told we have planted orchards on all kinds of land, high and low, rich and poor; that the handwriting on the wall already suggests that there are lands planted to orchards on which the expense of heat for frost protection is a burden too great to permit of a permanent profitable industry; that it may be necessary ultimately for these lands to be converted into alfalfa fields and the product fed to cows, and the manure spread on the bordering higher lands which the frost slips past as it settles down onto the less fortunately located area.

It may be that this problem of the relation of the dairy to the citrus industry is a community problem in which leaders of thought in the industry must seek to see established in suitable locations that type of citizenship which makes dairying a success and that further type of co-operation which makes it a supplement to the citrus industry.

History seems to show that cotton, corn, wheat, fruits, in fact no single crop promises a permanent agricultural industry unaided or unsupplemented by other branches of agriculture; and as the grower of single cereal crops has had to change his practice or cooperate with the livestock man or give way to men who would do so, perhaps there is a handwriting on the wall for the citrus grower which as it becomes plainer will read, "Raise alfalfa to feed cows to make manure to save the citrus industry."

## Frost Dates

Dr. Ford A. Carpenter, meteorologist of the United States weather bureau at Los Angeles, gives the following dates as to spring frost occurrence, covering the period of years from 1912:

### Last Occurrence of Frost Temperatures by Years and Dates

Temperatures of 32 to 29 degrees inclusive, dates without marks; 28 to 25 degrees inclusive \*. Records for 1918, to March 23 inclusive.

	1912	1913	1914	1915	1916	1917	1918
Bonita .....				Jan. 17	Jan. 12		Jan. 29
Corona .....	Mar. 11				Mar. 24	Mar. 15	Feb. 19
Escondido .....			Feb. 9	Feb. 22	Mar. 24	Mar. 23	Feb. 19
Pasadena .....		Mar. 12	Jan. 20	Feb. 21*	Feb. 1	Apr. 18	Feb. 19
Pomona .....		Apr. 15	Feb. 9	Feb. 22	Mar. 24	Apr. 18	Mar. 9
Redlands .....	Feb. 26			Feb. 21	Feb. 1*	Mar. 16	Feb. 19
Riverside .....	Feb. 27	Apr. 15	Jan. 13	Jan. 18	Mar. 25	Mar. 16	Feb. 19
Santa Barbara .....					Jan. 30	Mar. 15	
S. Bernardino .....	Mar. 14	Apr. 15	Feb. 8	Feb. 23	Mar. 24	Apr. 18	Feb. 16
S. Fernando .....				Feb. 22	Mar. 2	Mar. 22	Feb. 19
Tustin .....				Jan. 18	Jan. 30	Mar. 24	Feb. 17
Los Angeles .....	Jan. 7*						
San Diego .....	Jan. 7*						

### Dates of Last Occurrence of Following Temperatures

Temperatures of 32, 32 to 29 inclusive; 28, 28 to 25 inclusive; 24, 24 to 21 inclusive; 20, below 20.

	32 degrees	28 degrees	24 degrees	20 degrees
Bonita .....	Jan. 17, 1915			
Corona .....	Mar. 24, 1916			
Escondido .....	Mar. 24, 1916	Mar. 16, 1917		
Pasadena .....	Apr. 18, 1917	Feb. 21, 1915		
Pomona .....	Apr. 18, 1917	Mar. 25, 1913	Jan. 8, 1913	
Redlands .....	Mar. 25, 1913	Feb. 1, 1916	Jan. 7, 1913	Jan. 7, 1913
Riverside .....	Apr. 15, 1913	Feb. 20, 1913	Jan. 8, 1913	
Santa Barbara .....	Mar. 15, 1917	Jan. 17, 1917		
San Bernardino .....	Apr. 18, 1917	Mar. 13, 1917	Jan. 21, 1913	Jan. 8, 1913
San Fernando .....	Mar. 22, 1917	Mar. 13, 1917		
Tustin .....	Mar. 24, 1917			
Los Angeles .....	Mar. 9, 1893	Feb. 6, 1883		
San Diego .....	Jan. 7, 1913	Jan. 7, 1913		

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This is an important question because

few factors contribute more to farm life, in the way of economy, time saving, comfort, and lasting satisfaction, than the right size and type of Mogul engine.

You don't mind the lack of hired help nearly so much when you have a Mogul engine to do the chores. Morning and night it takes care of the jobs that used to be so tedious and tiresome. It does not get tired or quit just when you need it most. When you find how useful it is and how cheaply it works, you buy more labor-saving machines for it to run until it is doing all the power jobs on the place.

Mogul engines are the standard steady reliable power. They are designed, made, backed and guaranteed by a manufacturing experience that grew out of three-quarters of a century of good farm machine building. They work economically on the cheapest engine fuel you can buy—kerosene or distillate. They start easily. They run steadily. They serve you well for years.

Buy Mogul power and run your farm more profitably and with less labor. See the dealer and write us for catalogues describing Moguls ranging in size from 1 to 50-h. p., in all styles, for all purposes, all using kerosene for fuel.

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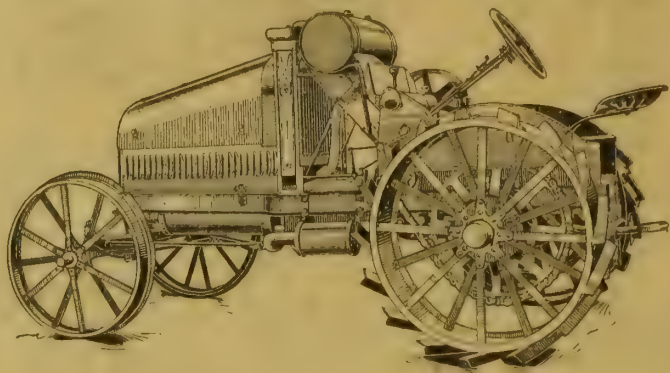


## See These International Tractors

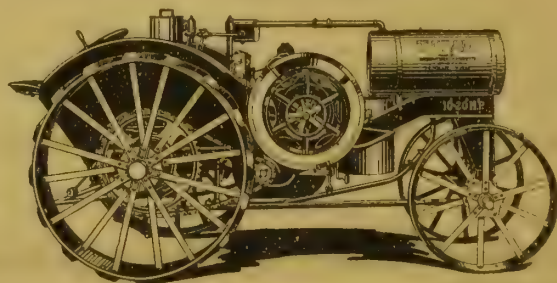
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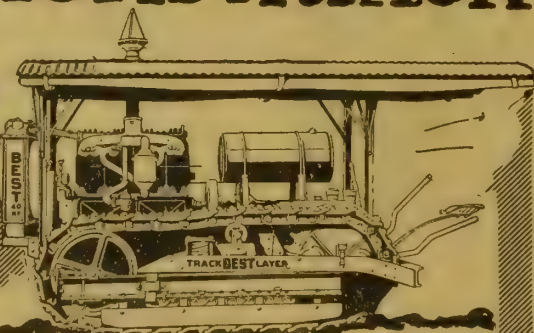
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"Acreage" May be Increased if the Area is Not  
"The Farm Under the Farm" may be developed and wonderfully increased. If such power farming is practiced California's tonnage will be immensely increased.

### THE TRACTOR ENGINE

Continued from Page 455

pounds per square inch in the different designs. For kerosene the pressure is less, ranging down to 40 pounds. Where engines are especially designed for alcohol the compression pressure is 125 pounds per square inch or more.

#### Temperature Rise

When the mixture is compressed the temperature is raised and if the pressure be too great it is premature-

ly ignited without the aid of the igniter. Thus with an initial temperature of 60 degrees Fahrenheit the following table indicates the rise of temperature due to compression without additional heat.

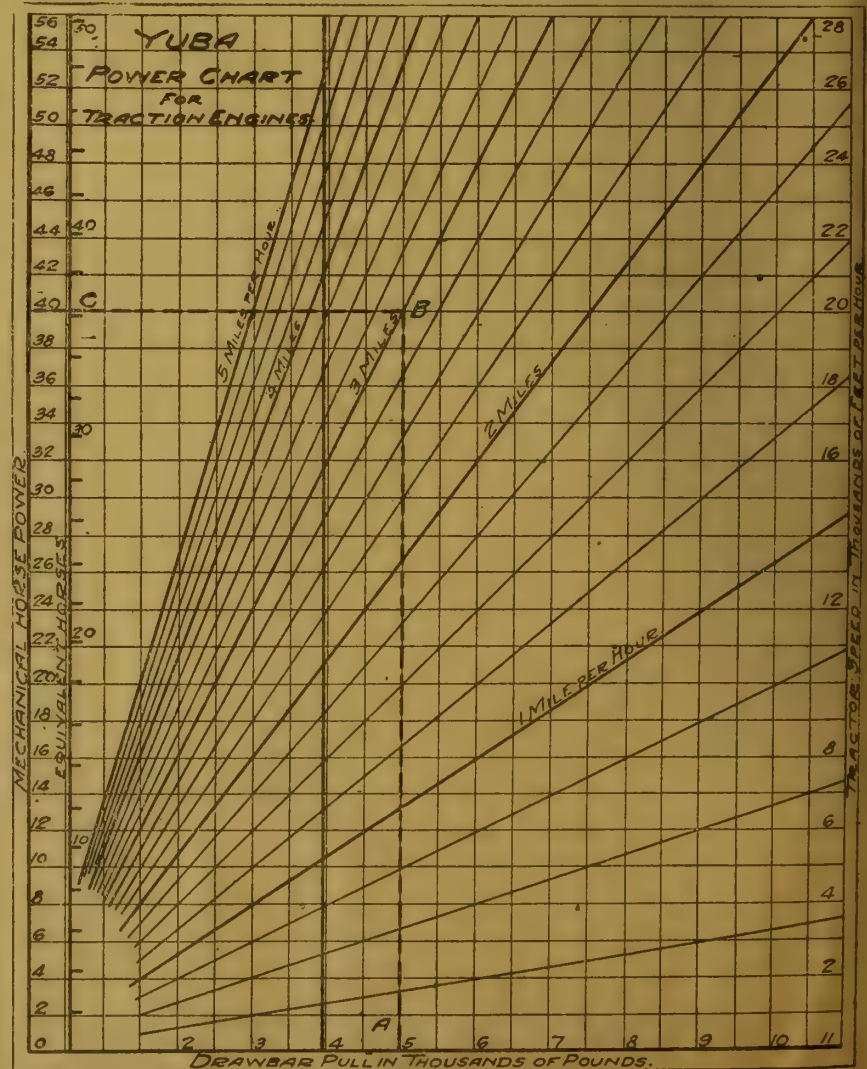
Compression pressure	Rise in temperature from 60 degrees Fahrenheit
40	301
50	339
60	373
70	404
80	433
90	459
100	484

Continued on Page 462

## How Much is a Horse Power?

Copyright 1918 by the Yuba Mfg. Co.

**T**HE necessity for an accurate and simple rating for traction engines is a subject that is attracting considerable attention at present. When the term "20 H. P." is used, it may mean almost anything. One manufacturer takes it to mean the actual horse power at the drawbar, another to mean the number of horses the tractor will actually displace, another the brake horse power





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Whether or not he has made good crops with Nitrate. Why speculate with Non-Nitrated forms of Nitrogen when, by using Nitrate, you can insure crops against adverse conditions? With the rational use of Acid Phosphate, always recommended by us, there will be no interference with normal soil conditions, either in one year or in one hundred.

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Manufacturers of

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a Specialty**

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of the motor, while another may even take the A. L. A. M. rating. Some-time, and the time is very likely near, when the farmer purchases his tractor, it will be definitely known by him just exactly what is meant by a "20 H. P. machine." Just what this will be cannot be told, but it will in all probability boil down to either the mechanical horse power of 550 foot pounds per second, or a carefully defined horse.

In the computation of power the two quantities that must be measured each time are the pull at the drawbar and the speed of the tractor, not of the motor. These two quantities can be easily obtained, the first by some kind of spring scales and the latter by laying off distance stakes.

Knowing then that the mechanical horse power is the result of dividing the product of pull in pounds and the distance traveled in feet per second by 550 it is very easy to obtain.

"H. P. equal 2.666 times pull in thousand pounds times miles per hour." And as an approximate rule it might be taken that the "H. P. equals five times the pull in tons times the speed in miles per hour."

In the accompanying diagram the drawbar pull in thousands of pounds is laid off horizontally and the mechanical horse power is laid off vertically; radial lines are speed lines. To obtain the horse power follow the line vertically that corresponds to the drawbar pull until it intersects the proper speed line. Then the horse power is on the horizontal line passing through that point, and can be read off on the scale at the extreme left margin.

For example: What is the horse power of a tractor pulling 5000 pounds and traveling at a rate of three miles per hour? Answer: 40. Follow the lines A.B.C.

Just inside the H. P. scale the equivalent horse pull is laid off. This horse pull is based on an animal that will exert a pull of 185 pounds while traveling at the rate of two and one-quarter miles per hour, and is equal to 1.08 mechanical horse power. For example: The equivalent horse pull in the above case is a little over 36 horses.

By knowing the speed at which any tractor is traveling, and the actual pull on a dynamometer, its real horse power can be calculated.

For instance: The model 20-35 with a 5000 pound drawbar pull at 2.06 miles per hour is equivalent to 27 mechanical horse power, or a little over 24 equivalent horses. The model 12-20 with a 3400 pound drawbar pull at two miles per hour does the work of 18 mechanical horsepower, or 16 equivalent horses.

### THRIFTY ADVANCE

The gospel of war stamps and thrift stamps is being advanced in almost every conceivable way all over the United States. One of the best schemes we have yet learned of is that being worked out by the employees of the Killefer Manufacturing Company of Los Angeles. They were recently granted a ten per cent increase of wages, and they unanimously elected to accept this ten per cent increase in thrift and war stamps, this to cover the entire year of 1918. Last Saturday night's thrift stamp collections by these employees aggregated \$111.25. Besides this, one day's liberty loan drive resulted in \$1500 worth of bonds being sold to the same wage earners. Incidentally we may say this is the third advance in wages of the employees of the big concern which makes so many dependable soil working tools.

## Killefer Deep Tillage Tools

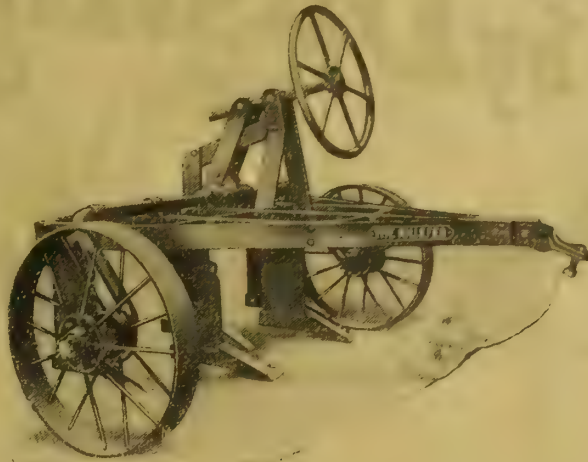


**KILLEFER  
QUALITY**

Will be at  
**DAVIS**



**KILLEFER  
EFFICIENCY**



We will show a full line of Subsoilers in action at the Demonstration.

See this tool at work. Subsoiling will renew your worn out land, and help you to raise bigger crops.

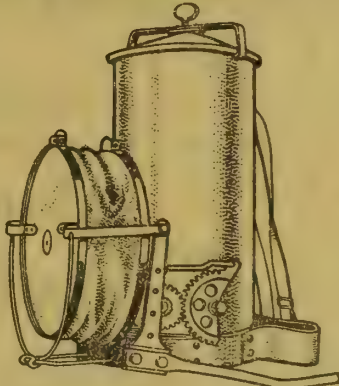
**Killefer Mfg. Co.**

2209-21 Santa Fe Ave. Los Angeles, Cal.

## Red Spider and Mildew

Are Quickly and Cheaply Destroyed  
with Sulphur if Applied with the

### AMERICAN BEAUTY DUST SPRAYERS



Los Angeles, Cal., Feb. 5, 1918.  
California Sprayer Co.,  
6029 Pasadena Avenue, (Copy)  
Los Angeles, California.

Dear Sir:  
In reply to yours of the 31st of January, I would say that I used your "American Beauty" last season on my 10 acres of Valencia oranges according to the instructions you personally gave on my visit to your factory with extremely satisfactory results.

I dusted 840 trees, working from about 7 o'clock in the morning until about 10 o'clock during the foggy period. My man was able to do approximately 50 trees an hour, and I used about 100 pounds of sulphur.

I figured the whole expense at about \$12 for 10 acres, labor and material, and certainly the results were extremely satisfactory.

The reason I purchased your rig was that I saw it used with entire satisfaction on a 100-acre ranch, and my results were equally good with the ones that I saw.

Yours very sincerely,  
H. E. COLLINS.

Vice-President  
Agricultural Chemical Works.

Get them at your dealers, or send us

\$16.00 for the Standard size, or \$13.50 for the Junior size.

We will send the machine on one week's free trial. If it is not satisfactory return it, and we will refund your money.

Send for Our Free Book

**THE CALIFORNIA SPRAYER CO.**

6001-6029 Pasadena Ave., Los Angeles, Cal.  
Reedley, Cal.

**P I P E**  
For Every Purpose  
NEW  
Threads and Couplings  
Hot  
Asphaltum  
Dipped  
2nd  
Hand  
and  
NEW  
Screw  
Casing  
Fittings  
and  
Valves  
Guaranteed  
for  
Pressure

TESTED and GUARANTEED

**Pacific Pipe Co.** Main and Howard Sts.  
San Francisco



# Save the Walnut and Orange Crop by Dusting

with a  
**Niagara Dusting Machine**

This machine saved many groves last season by destroying aphids with Niagara Tobacco Dust mixed with lime. The "Niagara way" is the most successful method of destroying Red Spider. The Niagara is the greatest time and labor saving machine for destroying pests on the market. There is a Niagara Duster for every purpose. Write for descriptive folder and ask about Niagara Dusting Sulphur. The Niagara is endorsed universally. Save your crops easily and at a little expense. *Western Distributing Agents:*

**F. A. FRAZIER**  
325 13th Street  
Oakland, Cal.

OR

**Germain**  
Established 1871  
**Seed & Plant Co.**  
325-328-330  
SOUTH MAIN STREET  
LOS ANGELES - CAL.

## Big Yields—Less Labor

To reap the greatest return at harvest time, cultivate thoroughly before planting. This is the vital time for all crops. With small grains it is the only cultivation. To do it with less labor requires the

### Cutaway Double Action Disk Harrow

It is saving a team and a man for thousands of farmers right now—and once over does the work! Its light draft is noted. Equally good on stubble. The rigid main frame forces every disk to its work; double cuts, pulverizes and levels the ground. Disks are forged sharp; dust-proof oil-soaked bearings—perfect service and long wear.

Write for our helpful freebook "The Soil and Its Tillage," and new catalog; also for name of nearest dealer selling CUTAWAY (CLARK) Implements.

The  
**Cutaway Harrow Co.**  
701 Main Street  
Higganum, Connecticut

Maker of the original CLARK  
Disk Harrows and Plows.

**E. P. BOSBYSELL CO.** General Agents  
Clark's Harrows  
Dealer in Farm Implements, Vehicles and Road Grading Machinery  
125-127 N. Los Angeles St. Los Angeles, Cal.

Corys

## THORNLESS Blackberry

Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

**Ekstein Nurseries**

Modesto

California

## Irrigation and Crop Control

From Address by Pres. J. A. Widdsoe of Utah Agricultural College at Dedication of Citrus Experiment Station at Riverside.



WHEN the quantity of water offered a crop is varied, there is a corresponding variation in the yield obtained. In general, the old idea holds, that the more water is applied the larger the yield of the crop, but only within narrow limits. The outstanding fact is, that the more water is applied, the less the crop return for the additional water used. For example, one investigator found on a deep fertile soil, in a district where the annual precipitation is about 13 inches, that five inches of irrigation water yielded 38 bushels of wheat to the acre, and that 25 inches, or five times as much water, gave a yield of 47 bushels, or only nine bushels more. In other words, if the 25 inches of water had been spread over five acres of land, 190 bushels of wheat might have been harvested as against 47 bushels, when the same quantity of water was applied to one acre.

In another experiment, one acre of potatoes, receiving five acre inches of water, gave 154 bushels of potatoes. On another acre 30 inches of water were applied with a yield of 244 bushels. If these 30 inches of water had been spread over six acres of land, the yield from the water so used would have been 924 bushels, as against 244 bushels from the one acre, but with the same quantity of water.

As stated, the more water is used the smaller becomes the relative crop return. At least there comes a point at which there is an actual diminution of the yield. A vigorous stand of corn yielded 91 bushels of grain with five inches of water. The yield increased slowly until 25 inches had been applied, when it began to diminish, and with 40 inches of water only 90 bushels of grain were obtained—a little less than with five inches of water. This also is a law generally found to be true. The curse of the early days of irrigation in the West was overirrigation. None has dared to compute the loss in crop, alone, due to the application of water sufficient to hinder the growth of plants. The water logging of irrigated lands might measurably be overcome if every irrigation farmer were content to use reasonable quantities of water. In this matter again the irrigation farmer has a definite control over his crop. However, this is not the end of the story. As the application of water is varied, every part of the plant is affected. When little water is used, the proportion of roots is large. As more water is applied, the stems and leaves develop more rapidly. Increasing the water within definite limits lengthens out the plant; and in the case of the grains increases the number of seed bearing stalks from the seed. Even the shape of the leaves is determined by the quantity of water used. Corn leaves are narrow and pointed when produced with little water; wide and rounded when more water is added. Potato leaves are thick and long celled with little water; thin and short celled with much water. The color, stiffness and very shape of the plant may be changed by changing the quantity of irrigation water used throughout the season.

Of more direct interest is the fact that the relative proportion of leaves, stalks and other plant parts may be

controlled by irrigation, since seeds and fruit are usually more valuable than leaves, and leaves more valuable than stalks. Forage plants grown with little water are usually leafy, but the judicious application of water may increase the proportion of leaves. It seems possible by varying irrigation to produce, for instance, leafy or stalky alfalfa.

In cereal crops the seeds are of chief importance. It has been repeatedly demonstrated that the proportion of grain in the whole plant becomes smaller as more water is applied. In one set of experiments, wheat grown with five inches of water yielded 46 per cent of grain; when 25 inches of water were used the grain fell to 33 per cent. That is, water may be made to produce wheat or straw at the will of the farmer. The fruits are likewise affected by irrigation. By proper use of water the edible portion of cherries was increased five per cent; of plums ten per cent; of prunes and apples about two per cent, and the proportion of small potatoes was in one case reduced from one-fourth to one-tenth of the whole crop. Such results are far reaching once they become part of our agricultural practice.

The quality, that is the composition of irrigated crops, is remarkably sensitive to the quantity of water used. The proportion of the nitrogenous, that is, fleshforming, substances in any crop diminishes invariably as more water is used. By growing wheat with small quantities of water the seed produced has contained as high as 27 per cent of nitrogenous substances, or nearly twice as much as was obtained under irrigation. The grains, roots, tubers and fruit all obey this law. As the matter is more fully studied we may have here a powerful means of competition with the products of humid farms.

The other chief plant constituents also seem to be powerfully affected by irrigation. Crops containing much or little fat or sugar may be produced at the will of the irrigator. In the case of sugar beets, the water supply that will produce the sweetest beets is being well established. Cherries, peaches and prunes contain most sugar and least acids when receiving small irrigations. On the other hand, many other fruits appear to become sweeter under the influence of rather large irrigations. The color and flavor of fruit, the starchiness of potatoes, the woodiness of forage crops, the gluten in flour, and the cooking flavor of fruits, vegetables and other crops are affected strongly and definitely by variations in the quantity of the irrigation water used.

This is a most important matter which calls for careful and elaborate study from our agricultural investigators. If the irrigated regions can place crops of definite quality upon the markets of the world, we shall be able to command the best prices in competition with the products of the humid farms, and what is of more concern, we shall help make irrigation agriculture safer and more profitable.

Interesting experiments have recently been conducted that show quite clearly that varying the quantity of irrigation water renders the crop more or less susceptible to disease. For example, the percentage of bitter pit on Gano apples was seven with heavy irrigations and only about two with



light irrigations. If medium applications of water were made to August 1, and light ones thereafter, the crop was wholly free from bitter pit. This is quoted merely to show how intricate and complete is the response of the crop to the quantity of water used.

It is really remarkable also that the response does not merely depend on the total quantity of water used. The method of irrigation employed and the time of application change greatly the growth, development and quality of the crop.

#### MONTHLY WEATHER AND CROP REPORTS

By E. A. Beals, United States Department of Agriculture, Weather Bureau

**D**URING March abundant rain fell in all parts of the state. In Southern California the seasonal amount is nearly normal, and as much as that of a year ago, while in the San Joaquin Valley it is slightly over an inch above the normal and nearly three inches greater than that received up to the end of March last year. In the Sacramento Valley there is a decided shortage as compared with the normal and with last year. However, in this section the rains fell opportunely and gently which permitted them to soak well into the soil, therefore if the normal amount falls in April and May crops will not suffer seriously from lack of moisture. The snowfall in the mountains is considerably less than usual, and fears are entertained that there will be a shortage of water for late irrigation and power purposes.

Farmers were very busy during the entire month in plowing and seeding their land. A large acreage of barley and oats was sown in March, as well as some wheat. The early seeded grain has come up to a good stand, and the late sown is sprouting nicely. Some barley in the San Joaquin Valley is now in the boot and about ready to head, but in general wheat, barley and oats are not so far advanced in growth as is usual at this season of the year. In the interior valleys a few correspondents complain of the great amount of wild oats in the wheat sown last December; but it is not believed the damage from this cause will be of serious consequence.

In the north, pastures, ranges, meadows and alfalfa are in excellent condition, and stock in consequence is looking remarkably well. In the southern half of the state forage crops are rapidly improving and stock, although still thin, is taking on flesh and soon will be in good condition. The losses so far during the lambing season have been small, and the increase in the flock is normal, if not better than normal. The first cutting of alfalfa will begin next week and become general in about two weeks. Considerable land has been prepared for corn and beans, but very little of it has yet been planted. Extensive planting of truck crops and home gardens was done during the last half of the month and some sugar beets have been seeded. South of the Tehachapi the early planted sugar beets are ready to be thinned.

Almonds are past the blooming stage. This crop in a number of localities was severely injured by frosts on the 5th, 6th and 13th, while in other places it escaped serious harm. Apricots, cherries, peaches, pears, plums and prunes are in full bloom. Considerable damage has been done to deciduous fruit by thrips and horticulturists are now busy plowing vineyards, cultivating orchard and spray-

ing trees. Strawberries were badly injured by rain in the southern counties. Lemons are recovering from the setback they received from the hot weather last June. Oranges are making good advancement and Valencias of fine quality are being marketed.

#### GLENN COUNTY FARM BUREAU SCHEDULE FOR APRIL

April 15-16, Orland, night meeting, Tuesday, April 16.

April 18-19, Jacinto, night meeting, Friday, April 19.

April 22-23, Willows, night meeting, Tuesday, April 23.

April 25, Elk Creek, day meeting, Thursday, 2 P. M.

April 26, Plaza, night meeting, Friday, April 26.

All night meetings for the month will begin at 8 P. M., new daylight saving time. Programs for the month will refer to war production projects.



**Olive Trees**  
such as these are grown only on our foot-hill locations. — Note the good roots — for hardiness they have no equal.

We have a fine lot of Mission and Manzanillo trees, both on Picholine roots and grown from cuttings. We have had splendid success on all Olive plantings—a most important assurance to you.

Submit a list of your tree wants for special quotation. Do it right now.

We have also a complete assortment of Shipping Plums, Cherries, Prunes, Bartlett Pears, Fall Pears, Peaches, Almonds, Apricots, Walnuts, etc.

Our foot-hill grown trees are free from root diseases common to other localities. Our trees insure your future profits in fruit growing.

And remember—we will accept Liberty Bonds as full or part payment for trees. Write us today.

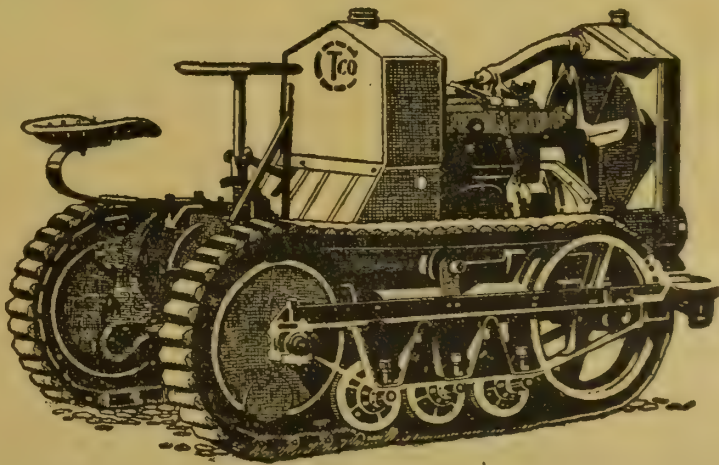
Address Dept. J

*J. E. Bergtholdt*  
Secy. and Mgr.

**SILVA-BERGTHOLDT CO.**  
Newcastle-Cal.  
“LIBERTY BOND” Trees

## See the CLEVELAND TRACTOR at the 1918 Tractor Demonstration

University  
Farm,  
Davis,  
California



April  
17-18-19,  
1918

Make your plans to attend this demonstration. The knowledge gained will be worth many times the expense. We invite you to study the

## Cleveland Tractor

see it operate under farm conditions, compare its price, weight, height, turning radius, ease of steering, packing of soil, how it works in mud, sand, hard or soft ground, in level fields or on hillsides. Compare the material, workmanship, dust-proofing devices, engine, governor, gears, clutch, roller bearings, clarifier, magneto and tracks. Compare every part of the CLEVELAND TRACTOR with all other tractors, then judge for yourself what is the best suited for your particular needs, and what is the greatest tractor value on the market.

**F. H. Stow, Cleveland Tractor Distributor**  
for Northern California and Western Nevada. Berkeley, California



## THE TRACTOR ENGINE

Continued from Page 458

## Ignition

The igniting point of different fuels varies, and accounts for the fact that gasoline may be compressed to higher pressure than distillate or kerosene, and alcohol higher than all three. In the Diesel type of engine pure air is compressed to 500 pounds pressure into which the fuel is sprayed. An igniter is not required.

## Temperature of Combustion

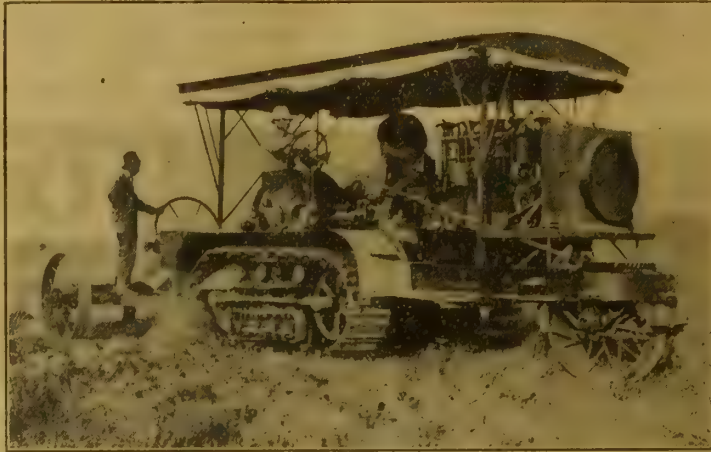
The temperature of combustion is very high in a gas engine. Twenty-nine hundred degrees Fahrenheit is not an unusual temperature. The significance of this is understood when it is suggested that the melting point of cast iron is about 2160 degrees Fahrenheit. If it were not for the fact that the gases of combustion are poor conductors, the gas engine would

be impractical due to lubrication difficulties in particular.

The term "cycle" when used in connection with a gas engine is a

complete set of operations or events which must take place in each cylinder of the engine.

Four stroke cycle: The four stroke



Oats and Barley Saved for Human Food

These mammoth tractors are saving thousands of tons of barley and oats and are enabling the farmer to produce more and cheaper.

cycle engine (or four cycle engine) is one which requires four strokes of the piston in the cylinder or two complete revolutions of the crank to complete the cycle. These four strokes effect the following events in the cycle:

1. Suction or admission of a mixture of fuel and air.
2. Compression of the mixture charge.
3. Combustion and expansion of the charge.
4. Exhaust or expulsion of the burned gases.

**Two Stroke Cycle:** In the two stroke engine a charge of air or mixture is given an initial compression sufficient to displace the burned gases in the combustion chamber near the end of the expansion stroke. The displacing charge of mixture is compressed in the following stroke of the piston and expanded after igniting on the next. Thus only two strokes of the piston are required to complete the cycle. The gases usually pass through openings known as "ports" in the side of cylinder opened and closed by the piston.

## Positions of the Piston

The extreme positions of the piston in the cylinder are usually referred to as the "head end" and "crank end" and dead centers.

## Combustion Chamber

The combustion chamber in a gas engine is the space within the cylinder, when the piston is in the position of crank end dead center, or in the position of greatest volume. For the sake of economy, it is desirable that the amount of surface in the combustion chamber to absorb heat should be as small as possible.

## Piston Displacement

Piston displacement is the volume of gases displaced during a full stroke of the piston. It is usually expressed in cubic inches and is used to calculate the capacity of the engine.

## Clearance

Clearance is the volume of the space remaining in the cylinder when the piston is in the position of head end dead center. Tractor engines usually have clearance amounting to one-quarter to one-third the volume of the combustion chamber.

## Principal Parts

Fuel tank; carburetor, to convert the liquid fuel into a spray and mix it with air; valve system to control the movement of the gases; ignition system to start combustion; cylinder and a piston to enclose the gases; crank and a connecting rod to utilize the force of the gases; flywheel mounted on crank shaft to give the engine a steady motion; governor to control the speed; pulley, gear, or clutch to transmit the power; oiling system to lubricate sliding parts; cooling system to keep the cylinder cool.

## Fundamental Definitions

A force is that which produces or tends to produce or retard motion. Usually measured in pounds.

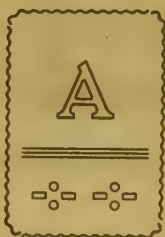
Work is the product of force times distance. Usually measured in foot pounds.

Power is the rate of work usually measured in horse power. One horse power is equal to 33,000 foot pounds of work per minute.

The British Thermal Unit, B. T. U., is a unit of heat and is equal to 770 foot pounds of work. It is heat required to raise the temperature of one pound of water one degree by the Fahrenheit scale.

Buy another Liberty Bond.

## AT THE DAVIS DEMONSTRATION April 17-20 Inclusive



**A**T this mammoth and elaborate Educational Exhibition the ranchers of California will have the opportunity to witness the greatest tractor and agricultural implement demonstration ever held on the Pacific Coast.

EVERY TRACTORS in the following sizes will demonstrate their superiority in all classes of farm work: 5-10 H. P., 8-16 H. P., 12-25 H. P., 18-36 H. P., 25-50 H. P. and 40-80 H. P., plowing, disking, harrowing, subsoiling, checking, ditching, etc., also, the AVERY MOTOR PLANTER CULTIVATOR will be shown for the first time in public exhibition in the West. This motor implement plants and cultivates beans, beets, cotton, corn and all row crops.

AVERY BEAN AND RICE THRESHER will be in operation tent.

**F. H. POSS CO., Distributors**  
Avery Tractors and Threshers  
17-19 Main Street  
San Francisco



# Agricultural News Notes of the Pacific Coast

## Northern California

Pear growers of Napa County are now spraying for thrips.

Durham, Butte County, estimates a 60 per cent almond crop.

The valley will generally observe squirrel week April 29-May 4.

Sheepmen have contracted for all the range in Siskiyou reservation.

An \$8000 grain elevator will be erected at Williams, Colusa County.

Eldorado County fruit growers are using pine needles in orchard mulching.

Sutter County reports that her supply of raisins will be exhausted before the new crop comes in.

Lake County anticipates a fine pear crop. The growers have done more general spraying than for years.

Butte County is contemplating liberal response to request of the government to plant castor oil beans.

Yolo County wool producers are making the wool clip; but very few sales as buyers are slow in making offers.

The Eldorado County farm bureau is working for the keeping of pure bred swine on every ranch in the county.

The farm labor committee of the state council of defense is recommending severe measures with I. W. W. traitors.

"Every day squirrel day" in Yolo County. However, the week of April 29-May 4 will be a week when every squirrel will be invited to look for a health resort.

The Red Cross at Nicolaus managed a rabbit drive in which hundreds of rabbits were saved from destroying crops and \$200 was netted to the Red Cross organization.

Farm bureau meetings of Eldorado County: April 9, Eldorado; 10, Fairplay; 12, Penobscot; 15, Coloma; 17, Camino; 19, Gold Hill; 23, Kelsey; 25, Placerville; 26, Union.

The remount station at Camp Fremont, Menlo Park, is sending notices to farm advisers in near-by counties that it has thousands of tons of stable manure for disposal to farmers.

The Oroville mosquito abatement district is planning for a very thorough campaign during the summer of 1918. Much of the work will consist in permanent drainage systems.

Harry Stabler, former horticultural commissioner of Sutter County, has been made special labor commissioner and will endeavor to secure sufficient labor supply for farmers in that county.

Paul I. Dougherty, formerly assistant farm adviser of Napa County, and later of Imperial County, is now with the sharpshooter division of the intelligence department and has been transferred from Camp Lewis to a North Carolina camp.

The long standing dispute between water users and an irrigation company in Butte County has been settled by the state railway commission, which directs the company to file and put into effect the new rates within 20 days from March 25.

State Food Commissioner Merritt is taking a hand in settling the rice controversy which was brought about by Louisiana millers coming in and buying practically all the output—which the railroads were prevented from carrying to the Louisiana purchasers.

## Central California

Stanislaus County is shipping beans to Havana, Cuba.

Escalon, San Joaquin County, is appealing for a tomato cannery.

Tulare County farm bureau holds its fat hog auction this Friday.

Madera County farmers are endorsing the Madera County irrigation bureau.

A German has been arrested because of alleged cattle poisoning near Fresno.

The Grange Company proposes to build new bean cleaning and sacking plant at Ceres.

The San Jose Grange Patrons of Husbandry recently met and conferred degrees on a large class of candidates.

San Benito County reports its seasonal rainfall as nearly nine inches and so distributed as to assure a big grain crop.

The Tulare cannery had expected to make a strong run on artichokes,

## Southern California

Long Beach, Los Angeles County, is to install a mussel canning plant.

A big oil mill and gin at Blythe will be financed by a \$100,000 corporation.

The fat hog sale at Brawley, Imperial County, will occur on April 18.

Imperial Valley boy scouts are aiding in the castor bean planting campaign.

The annual meeting of the Hemet Walnut Growers' Association was held March 30.

Much land formerly covered by the Salton Sea is being reclaimed and occupied by settlers.

The building of a cannery at Elsinore is now assured. It will be in operation by June 15.

The Pomona Valley Poultry Association members are discussing Methods of Feeding.

The Imperial Valley farm bureau has changed "A pig on every farm" to "Two pigs on every farm."

Pupils of schools at Hemet, River-

## The Coast and General

Sanford, Florida, recently shipped a solid trainload of celery.

Texas producers of spinach are making appeal for more cars.

Idaho will materially increase its sugar beet acreage this year.

Idaho producers are confronted with a shortage of 5000 freight cars.

Forest rangers in all the national forests are planting young trees.

The first cars of Bermuda onions out of Texas go forward this week.

Eastern Oregon reports live stock having wintered exceptionally well.

A potato marketing association has been organized at Satsop, Washington.

Dairymen at St. Helens, Oregon, are appealing for help from serious labor shortage.

Thousands of acres of alfalfa are being planted in Umatilla County, Oregon, this year.

Vegetable and truck farmers on the Eastern coast are suffering from severe basket and box shortage.

One Clarke County, Washington, lumber kiln-drying plant handles 10,000,000 feet of spruce monthly.

Eastern Washington farmers are making their spring drive on "log dragging" and grading of roads.

The superior court of Klamath Falls has issued an order establishing the Willow Valley Irrigation District.

The Conservator of Forests of the Imperial forest service of India is investigating American forestry conditions.

The Boise Valley Sheep Breeders' Association has been formed in Idaho. The president is S. E. Sebrén of Meridian.

The potato producing sections near Seattle, Washington, report light demand for seed and less planting than anticipated.

Western Washington farmers have purchased more tractors for this season's work than were owned in that section before.

The Utah-Idaho Sugar Company will plant 500 acres in sugar beets as an experimental plot in Walla Walla Valley, Washington.

The flour mill at Ashland, Oregon, has made changes in its machinery which enable a great increase in its production of flour substitutes.

The contention between sheepmen and cattlemen of Arizona regarding pasturage in the Indian reservations has been settled by compromise.

The Cache Valley beet growers competed for a series of prizes offered by the Amalgamated Sugar Company for Utah grown beets. There were five \$100 prizes and many others ranging from \$25 to \$75.

Arizona water users are protesting against the decision of Secretary of the Interior Lane in the matter of water division between the Imperial Valley and Arizona points. The arrangement will limit Yuma needs to 120,000 inches, or one-fourth the water available at Laguna dam.

Utah beet sugar manufacturers, at the personal request of Food Administrator Hoover, have agreed to pay beet growers \$10 per ton. This is a flat rate, or growers are given option of \$9.00 price on a profit sharing basis. The growers are cooperating and have promised to go the limit.

## Have You Bought Your Third Liberty Bond?

Agricultural News Notes gives its usual page over to Liberty Loan Bonds this issue. It is good reading. See page 467.

but finds it has not sufficient stock to make a successful season's run.

The Oakdale irrigation district has "taken stock" and finds its properties valued at \$2,607,\$10. The cost of operation exceeds \$60,000 annually.

Members of Lincoln Grange were recently hosts to the Pomona Grange of Stanislaus County. Prof. Horne made address regarding brown rot of fruit.

Merced County's rabbit drive netted 18,000, which it has figured will make a saving of over \$36,000 worth of food. At \$2.00 destruction each, rabbits are high priced.

Tulare County is giving very thorough investigation to the labor situation, and its farmers are answering questionnaire sent out by the Valley Fruit Growers' Association.

Secretary Miot of the Tulare County board of trade is negotiating for farm help and thinks he can land from 500 to 1500 desirable working people in the county if the farmers wish them.

The Pajaro Valley, Santa Cruz County, anticipates the early construction of a potato drying plant which will enable that county to send thousands of tons of dried potatoes to our armies in France.

There is contention between the national park control and the forest reserve people regarding the uniting of Sequoia Park with General Grant Park. Many people of the San Joaquin Valley are combating the change.

A fruit dryer of the Pajaro Valley at Watsonville is contemplating changes in his dryer which will enable him to dehydrate potatoes. Effort is now being made to secure government contract which will insure the project.

side County, spent the Easter vacation in their large war garden.

The draft quota for Imperial County has been greatly reduced because of the great percentage of Mexicans, Japanese and Hindus, not citizens.

The latest union is the American Fruit Workers' Association. It is negotiating with the Imperial Valley cantaloupe growers to supply labor.

It is reported that the beet sugar factory at Chino, San Bernardino County will not run this season, presumably because of beet production shortage.

A branch of the Indio state farm, or experiment station, is to be established at Palm Springs, Riverside County. It will be in charge of Prof. S. C. Mason.

The San Diego County farm bureau is protesting against the law which provides a closed season for all kinds of rabbits and the exaction of a license fee for shooting them.

Imperial Valley grain growers are holding mass meetings and discussing methods of handling grain in the face of the fact that they are unable to secure grain sacks in sufficient quantity.

The Pacific branch of the National Association of Economic Entomologists was held in Southern California at two points, one day session at Riverside and another at the state insectary, Alhambra.

Beet growers at Oxnard, Ventura County, are dissatisfied with the \$8.25 base price on beets, this because it is conditional on the price of sugar, some maintaining they prefer the \$7.50 price without strings.



# 150,000 Farmers Quit "Guessing" When They Paid Our Dealers \$10,000,000 for "Z" FARM ENGINES

## 150,000 Farmers Chose These "Z" Engine FEATURES:

1. Fairbanks-Morse QUALITY.
2. Economical in first and fuel cost, and low up-keep.
3. Simplicity and staunch durability.
4. Light weight, substantial, fool proof.
5. Gun Barrel Cylinder Bore.
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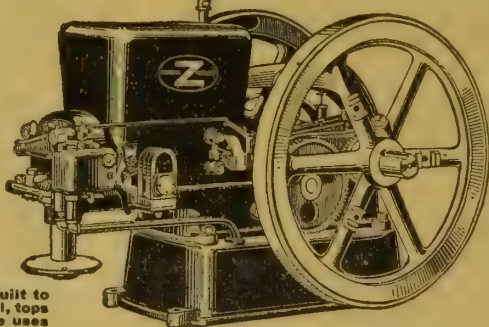
Kerosene, easy to get, at half gasoline costs, does the work in a "Z" with more than rated power. FAIRBANKS-MORSE engine designers saw this war-demand coming and built "Z" Engines to fit the farmers' needs. The farmers know it now—over 150,000 strong. Will you too investigate? Compare. Figure out the FACTS—before you buy ANY Engine. *Alright—we know the result, because—*

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Go to the Fairbanks-Morse Dealer. He is in position to render you prompt and personal service. He has exactly the "Z" for your NEEDS in stock and can make quick delivery. See it in operation on his floor.

**3 H.P.**  
**\$89.00**  
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Both With Throttling Governor  
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on skids  
All F.O.B. Factory. With  
**BUILT-IN MAGNETO**

The 3 and 6 H. P. sizes are built to use kerosene, distillate, stove oil, tops or gasoline. The 1½ H. P. size uses gasoline only.



**FAIRBANKS, MORSE & CO.**  
**Chicago — Manufacturers**

## DEEP WELL TURBINES

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



"Write for Catalog No. 48"

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SAN FRANCISCO

LOS ANGELES

VISALIA

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

## Insect Enemies of the Home Vegetable Garden

By F. H. Chittenden, Truck Crop Investigations, U. S. D. A.



CERTAIN species of ants may be found afield from March to October and often occur in greenhouses and coldframes, attacking cabbage and related plants, egg plant, lettuce, beans, parsley, radishes, tomatoes and peppers. They attack the roots, crown and lower portions of the stem, and completely destroy young plants.

Control. The best remedy is fumigating the nests with carbon disulphid by means of a machine oil can made of metal. Locate the nest and, if possible, the female, or queen. Inject about two or three teaspoons of the liquid into the entrance to the nest, and if not effective soon repeat the dose a little stronger. Hot water will answer the purpose if the insects are not too abundant. Poisoned baits as for cutworms have been used with good effect. Careful watch should be kept for the appearance of these insects in lawns and elsewhere about the grounds and the nests destroyed. Consult Farmers' Bulletin 740 on "House Ants."

### Onion Thrips

The onion thrips, incorrectly called "thrip," is microscopic in size and is often called the onion louse. It causes an injury somewhat generally known as white blast, white blight, and silver top. It also causes scullions, or thick necks—poorly developed and unmarketable bulbs. This species frequently ruins entire fields of onions. Besides the truck crops mentioned this thrips attacks cauliflower, cabbages, cucumbers, melons, pumpkins, squashes, parsley, tomatoes, kale, turnips and seed beets. It is what is known as a general feeder, and it would be easier to mention plants which it does not attack than to list those which it uses as food.

Control. Nicotine sulphate, 1-1000 and soap is used with success.

### Tarnished Plant-Bug

Nearly all vegetables are attacked by the tarnished plant-bug, a small leaf-bug measuring about one-fifth of an inch in length when mature. There are five distinct stages, called "nymphs," from the time the egg is laid until the adult or winged form appears. This species is injurious to cabbages, turnips, potatoes and cucumbers, and injury generally is done by the adults piercing and sucking the juices from the plants and later attacking fruits and shoots. It is the cause of "buttoning," and is credited with carrying some forms of blight on plants. Were it not that this insect feeds on so great a variety of plants, thus distributing its attacks, it would be a serious pest indeed.

Control. This plant-bug, when it occurs in great numbers, can not be kept within bounds by any single remedy. The great activity of the pest makes it particularly difficult to control. The best remedies are nicotine sulphate, kerosene-soap emulsion and fish-oil soap. As in the case of plant-lice, insecticides must be applied in the morning before the insects have become thoroughly active and while dew is on the plants. In the small garden, sweeping all the plants, grasses and weeds with an insect-collecting net will accomplish much toward keeping the pest in subjection.

### Red Spider

Practically all vegetables are sub-

ject to attack by the red spider. It is not a true spider but a mite, the latter name being indicative of its minute size. It is well distributed throughout the country. Among vegetables and truck crops most attacked are beans of all kinds, cowpeas, egg plant, cucumbers, tomatoes, melons, squashes, strawberries, raspberries, beets and celery. It is also a greenhouse pest and does great damage to cucumbers and tomatoes, as well as to ornamental plants grown under glass. It is a general feeder in the broadest sense, infesting the foliage of shade and fruit trees and some field crops. It is often present on the under surface of leaves like beans without being suspected. This mite injures plants by sucking the juices, and when plants are neglected their vitality is slowly reduced by loss of sap, and in time all of the plant's functions are deranged. In case of severe attack, millions of red spiders can be found on the foliage, and the webs which the insect spins from plant to plant can be easily seen, with the mites themselves passing rapidly over them and congregating in swarms. Sometimes the plants look as though stricken by fire.

Control. The remedies are spraying with soap solutions, kerosene-soap emulsion, and sulphur preparations. Flowers of sulphur mixed with water at the rate of one ounce to one gallon sprayed over infested plants is of great benefit. Unless remedial measures are adopted early and applied as often as necessity demands, red spiders are almost certain to do great harm to delicate plants, since if the plants become thoroughly infested they seldom survive. Frequent spraying with soap and water will often keep the pests in check, especially in greenhouses.

### Slugs and Snails

Much harm is done by slugs, little animals sometimes classified as insects, but really mollusks. They are not provided with shells, while snails are shell bearers. The latter are also sometimes troublesome, but their injury is limited. Attack is most severe on delicate seedlings grown in hotbeds and in coldframes. Delicate garden vegetables of nearly all kinds also are injured by them in the open, attack beginning when the plants are near the ground and even after the crop is ripening. Potatoes are bored into and celery is often badly injured during the bleaching process.

Control. The best remedy is a preventive and consists of lime in any form, quicklime being the most useful, sprinkled over the plants and scattered about the haunts of the slugs, which means all about the garden, buildings, outhouses and fences. When the lime comes into contact with the slug, the latter secretes slime copiously and in time this completely exhausts the animal and it dies.

Other remedies are soot, dust, sifted wood ashes and kainit. By scattering a line of any of these substances around a garden, coldframe or other inclosure, it will serve to keep the slugs away. To avoid slugs it is desirable to remove all rotten wood and old structures and to keep the entire garden and yard free from rubbish of all kinds.

### Springtails

Springtails are minute, dark-colored, soft-bodied insects which hop like fleas. They have the same habit as flea-beetles of pitting the first-appearing leaves of all kinds of seedlings, which causes much disfigurement and reduces the yield of the crop.

Control. The control is the same as for flea-beetles: Bordeaux mixture combined with lead arsenate or Paris green.



## Eastern Vegetable Shipments



HERE are few producers of farm products who have not been confronted by almost insurmountable obstacles in the matter of shipments, especially of perishable products. California vegetable producers have felt that they had rather more than their share. The situation became so strenuous that some step was necessary, and a few weeks ago the California Vegetable Growers' Committee was formed and issued a statement to Director General McAdoo, from which we quote:

"We, and those we represent, are growers of fresh vegetables, farming throughout the state of California about 75,000 acres. The crops raised by us are artichokes, asparagus, cucumbers, celery, cauliflower, cabbage, cantaloupes, lettuce, peas, rhubarb and tomatoes; and the total Eastern shipments of these products approximate 25,000 cars annually, about 75 per cent of which is distributed east of the Mississippi River, although all sections of the United States draw their supplies of fresh vegetables during some period of the year from California as it is the chief, and, in many instances, the only source of supply available.

"Prior to this season the service rendered by carriers has, as a rule, made it practical to deliver our products in all markets, even to Atlantic coast points, in good condition, but for several months past, on account of delays in transit, our vegetables have arrived at destination in bad

and, in many cases, worthless condition, and have sold for very low prices and in many cases for less than transportation charges, causing not only loss to us but what in many respects is a greater loss, namely: The absolute waste of valuable and necessary food products. This condition can only be corrected by putting in effect immediately a reasonable transportation schedule for the handling of our fresh vegetables, and we suggest as a maximum the following, namely, nine days to Chicago, 14 days to New York, 15 days to Boston and a schedule to intermediate points between Chicago and New York to correspond to the above."

Other transportation problems and the urgency of immediate decision were referred to in the statement, which was taken to Washington by Mr. O'Neil, one of the members of the committee. He has wired the home members of his committee:

"At conference with Traffic Director Chambers last night he promised resume definite schedule east of Chicago on perishables and to advise me today schedule to principal points in that territory such as Pittsburg, Philadelphia, New York, Boston, and full detailed schedule when worked out between him and regional director."

Other wires have followed from Mr. O'Neil in effect that schedules are being arranged and shipments of California vegetables are going forward with assurance of every possible aid from the railway administration.

## Garden Cutworms: How to Destroy Them

By H. J. Ryan, Bureau of Entomology,

U. S. Department of Agriculture



CUTWORMS are usually the first of our insect pests to attack the truck and vegetable garden after the plants appear above ground and are chiefly conspicuous by the results of their work. They are mostly concerned with young succulent plants, and the grower finds in the morning that the stem of a plant has been eaten into near the ground, or the entire plant has been lopped off and only a stub a half inch or so in length remains protruding from the soil. Tomatoes are often destroyed in this manner. Cabbages and lettuce are also favorite food plants of these pests; indeed, practically all early vegetables and truck plants are subject to injury.

If the interested gardener will dig an inch or so into the loose soil about the base of the injured plant, he will probably find a curled-up, dark-colored, fat, sleek, "worm," from half an inch to an inch in length.

Summary treatment is obligatory if one would circumvent activities so unquestionably hostile. A thief who works only at night, the cutworm's life history dates from an egg laid by a small gray or brown moth about an inch across the expanded wings and who also shuns the sunlight.

### How to Fight Cutworms

Cutworms find protection during the day under trash and garden refuse as well as in the soil. We may take advantage of this habit by placing pieces of boards between the rows. Many of the worms will crawl under these in the morning and can be found there during the day.

Some good may be accomplished, on a small scale, by digging the worms out and crushing them. It is also possible to find some at night by the aid of a lantern, but such methods are not practicable, and merely makeshifts at control.

### Poison Bait Remedy

The best remedy, and one which can be used successfully on either a large or small scale, is poison bran bait. For use in small garden two quarts of bran should be thoroughly mixed with two teaspoons of white arsenic. To this is added a pint of cheap molasses stirred into one-half gallon of water. The mixture should be made up to the consistency of a stiff dough and allowed to stand for several hours to enable the poison to soak into all the bran particles.

The bait should be scattered over the garden, especially at the edges, and about the base of the plants in lumps about the size of a marble. If distributed late in the day it will remain fresh and tempting to the worms when they commence their activities.

For large areas the following formula is efficient: 20 pounds of bran, one-half pound of white arsenic, one-half gallon of molasses and enough water to make the dough. This should be sufficient for four or five acres. It is sometimes necessary to repeat the application. The addition of fruit is unnecessary.

Short circuit on corn bread, the wheat won't go around.

A good citizen is known by the food he eats.

## Note What It Does



## "Right-About-Face" With FULL POWER

### Remarkable Performance with Small Tractor

BEFORE you write out your check for any tractor, note how the Bean TrackPULL turns right around into the same row with tools down deep all the way, without pivoting, or overloading one side of the tractor, or doing anything else that is injurious, or difficult, or that a tractor shouldn't do. Note how this tractor takes its turn with

its full load, just as easily as it takes the same load down the straight-away. Note the reason for this in this tractor's single track which it pulls and you steer. See how easy it is to steer, and how that great PATENTED SINGLE TRACK FEATURE also makes the TrackPULL Tractor as flexible as the best team you ever had.

### "Almost Like Animal Intelligence"

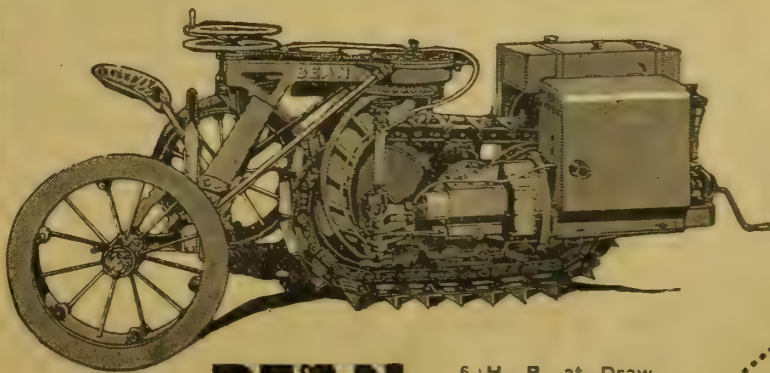
"Mine acts like it understood—almost animal intelligence," is the way one man puts it—and you'll want that, too, in a tractor. For ease of handling, as well as the ability to make right-about-face turns with full power, has got to be in the tractor you use in an orchard or vineyard or in the field, where there's a lot more than just straight-away work to do.

Be careful about "acrobat" tractors—for tractors that will spin around at a fair aren't necessary

ily tractors that will turn short with a full load in the field. Make them demonstrate to you with their tools hitched on.

Send right now for the Bean TrackPULL catalog, learn the price of this great machine, and get the name of the nearest factory-agent who will demonstrate how the Bean TrackPULL Tractor does the kind of work that's waiting for it on your place.

Mail us this coupon, now before you forget it. Find out the truth about tractors right now!



## BEAN TrackPULL Tractor

Watch the "BEAN"  
at DAVIS  
April 17-18-19

6 H. P. at Draw  
Bar. Patented  
Front Drive.

Bean  
Spray  
Pump Co.  
Dept. D-4.

231 W. Julian St.,  
San Jose, Cal.

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Los Angeles, Cal.

Without any obligation on my  
part, send me Bean TrackPULL  
Tractor Book.

Name.....

Street.....

City.....

County..... State.....

Number of acres..... Kind of crops grown.....



Established 1877

Forty-first Year

## The California Cultivator

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established 1901,  
Combined with California Cultivator 1916

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Saturday April 13, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

The center photograph shown on this week's cover will remind several hundreds of the Cultivator's subscribers of an annual event which is becoming one of the most popular of all held in California. It is the Farmers Picnic at the University Farm or, rather, it is one little sideline manifestation, for it shows only a small section of the parking grounds. This picnic has been held for seven years at the University Farm, and each year the attendance is greatly increased. This year's attendance will doubtless exceed all former records, for the event is to be preceded by three days of tractor demonstrations, and the tractors will all remain and participate in the picnic, especially the grand parade. The upper and lower portions of the cover engraving are from the poster announcing the demonstration which is conducted by the California Tractor and Implement Association.

The day has been one in which pleasure is mingled with profit, for some of the best speakers of the country have been called upon to give inspiration to the visitors who make this annual pilgrimage. This year's talent will be augmented by a great number of practical tractioneers who will be there with their machines to show how they can save labor and possibly save the country in our campaign for the production of more food.

More tractors have been manufactured and sold during the past 12 months than in any other like period in the history of the country. We believe another year will show even greater interest.

Bought your Liberty Bond?

## LIBERTY LOAN

The first Liberty Loan under bond act of May 24, 1917, was for \$2,000,000,000 at 3½ per cent. The bonds bear interest from June 15, 1917. More than 4,000,000 people subscribed.

The second Liberty Loan bore four per cent and was for a minimum of \$3,000,000,000 and a maximum of \$5,000,000,000. Its minimum was over subscribed 54 per cent. It bore interest from November 15, 1917.

## \$10 BEETS

Utah farmers are planting sugar beet seed. They have been given a \$10 per ton price, that is, provided the acreage is increased at least ten per cent over that of last year and also provided certain prices for sugar prevail at the time of harvest. Or they are offered by the mills a guaranteed \$9.00 basis regardless of tonnage or sugar prices. The beet growers and their friends are conducting a campaign to secure the desired ten per cent increase.

## CAMP FIRES

The forest service of California announces that it will require permits of all campers who expect to go into portions of many of the national forests. This requirement has in the past been confined to the Angeles

was the case a few years ago. Hence an efficient tractor, with tools built to do the work, gives opportunity to aid in food production as never before.

Proof of their worth has been shown by increased crops in many sections of this state. Tractor demonstrations afford opportunity to the manufacturer and his sales force to demonstrate methods of doing, but the farmer who has done and produced crops gives vastly stronger proof of the real value of the tractor.

## KILL THE PESTS

Many a farmer is writing to the Cultivator asking if there is not some relief from the pest of rabbits which are destroying crops all over the state. The game law as it now stands, protecting the rabbits, is resulting in a vastly lowered production of food-stuffs. There is not sufficient latitude given by the fish and game commission to allow farmers to protect their crops. The farmers should unite and demand of the next legislature relief from this intolerable and foolish situation.

## TRACTOR PAPER

The federal reserve banks have announced that they will rediscount notes which are secured by farm tractors. This is another step toward cheaper money for the farmer. It is

## THIRD LIBERTY LOAN

The campaign will run from April 6 to May 4. Initial payment May 9, five per cent; second payment May 28, 20 per cent; third payment July 18, 35 per cent; fourth payment August 15, 40 per cent.

Third Liberty Loan bonds are ten year gold bonds, payable 1928, bearing interest at 4½ per cent. Interest dates from May 9, 1918. Application must be accompanied by a payment of five per cent of the amount of bonds applied for or by payment in full. Bonds will be in denominations of \$50, \$100, \$500, \$1000, \$10,000 and \$50,000.

Although the loan is for \$3,000,000,000, it is the opinion of all financial experts that the United States will need at once \$5,000,000,000 and will so announce before the loan is well under way. This means that we must do more than meet our quota; that we must be prepared to go over the \$5,000,000,000 mark.

forest, but because of the large per cent of fires resulting from this cause in 1917, it was found necessary to extend this requirement. The record for 1918 may determine very largely whether or not the camp fire permit will be extended to the Sierra and Northern California regions.

No greater privilege is given to Californians than this of the freedom of our wonderful mountains. It is to be hoped that every camper will not only watch his own step but will play the part of a vigilante and at least inform the proper authorities when carelessness permits other campers to jeopardize not only the pleasure but the best interests of all in the state.

## EFFICIENCY

A whole sermon on tillage is preached by the photograph of the tractor digging up "the farm under the farm" on Page 458. We are fully aware that the production of a successful, and especially a profitable, crop requires vastly more than the plow which will go deep into the earth, pulled by a tractor powerful enough to negotiate any difficult job of plowing, that is, there are a thousand and one other questions of physical and chemical conditions of the soil, of fining the surface or possibly of sub-surface packing, and almost innumerable other questions, but the depth of California soils and the real value underlying their surface is appreciated by more people than

coming slowly, and many of our subscribers have complained because of refusal of the federal farm loan bank to advance loans as freely as the land owners have desired, but the borrower must bear in mind that this is a big question, and the farm loan movement is feeling its way. It must be kept within conservative and safe bounds. This is only justice to those who advance their money on these bonds of the federal farm loan banks, and it is good policy in the securing of permanency to the movement.

Now with the money which has been given by many farmers to cover tractor purchases, accepted by the federal reserve banks, it is presumed the manufacturers will be enabled to extend their operations materially and to give a lower rate of interest and to aid the country in producing more.

The instructions which have been issued by the federal reserve board to the banks authorize them to redeem this tractor paper provided its maturity does not exceed six months and the tractors are purchased for agricultural purposes. We wish the time were extended, but like other steps taken, "Safety First" is the motto.

## This Week's War News

A British torpedo boat destroyer has been lost by accidental collision during the week.

English troops are being transferred to Italy to reinforce troops there in anticipation of an Austrian drive in the near future.

Turks claim a victory over the British on the east bank of the Jordan, which victory the British assert is purely imaginary.

A vigilance committee at Collinsville, Illinois, took a German sympha-

thizer from jail and hanged him to a near-by telegraph pole.

Lenroot, loyalist Republican, has been elected United States senator from Wisconsin. Davies, also loyalist, likewise received strong vote over Berger, Socialist.

The Bethlehem Steel Company plant near Baltimore suffered from a terrific explosion on the night of April 8. No explanation is made, but we may assume it to have been caused by incendiaries.

The French are inquiring into the long delay in the execution of Bolo Pasha. As a rule, however, it is thought that the military authorities expect developments which may prove of value in ferreting out other traitors.

The situation in Finland is still one of anarchy. German troops are marching in and Swedish residents are uniting with the "White Guard" in support of the Germans. Russian reinforcements are also entering the country and aiding the loyal Finns.

The "72 mile gun" which Germans are using on Paris is discussed by its believers and scoffers. However, one claim is made that seismographs the world over distinctly make record of each discharge of the gun. In any case, thousands of residents of Paris have moved from the city.

April 6, the first anniversary of America's declaration of war and the initial day of the third liberty loan drive, was observed the country over with booming of guns and fluttering flags and "bombardment" by airplanes dropping circulars advertising the third liberty loan. Extended military parades were also held in nearly every city.

Another step in the Russian-German "peace negotiations" has been taken in the appointment of Adolph Joffe, who was chairman of the Russian peace delegation, to be ambassador to Berlin. The "government" at Moscow is reported to have ordered the sale of the Baltic war fleet to Russian firms or citizens who will change them over into merchant vessels. American, English and Japanese troops have been landed from warships in Vladivostok.

President Wilson made an address in Baltimore, April 6, in which he expressed willingness to discuss peace "when our enemies are willing to discuss peace with honesty of purpose," but as to the challenge of the Central Powers, "There is, therefore, but one response possible for us: Force, force to the utmost, force without stint or limit, the righteous and triumphant force which shall make right the law of the world, and cast every selfish dominion down in the dust."

The condition in France has again assumed the appearance of a deadlock. The battle line is little changed during the past week. Artillery action is almost incessant, and occasional charges on the part of the Allies have deprived the Teutons of some of their ground. The greater activity now is in the extreme north toward the sea. At this writing British and Portuguese troops are yielding slightly near Givenchy. United States forces are known to be on the Picardy battle line, but as to the extent of participation or the casualties no report is made. Amiens and the railway lines between it and Paris are still safe.

In discussing the man power bill in the house of commons Prime Minister David Lloyd-George made address reviewing the military situation and the problem which confronts the Allies. While not exactly pessimistic, the prime minister sounded a note of warning to the people of England and of America. He was free in expressing his disappointment that America is waiting to complete its various divisional organizations and to have its men in perfect training before sending them to the field of battle. The British fighting line is now being reinforced by boys of 18 and 19 years and the man power bill is contemplating raising the age limit to 50 or 55 years. In the minister's speech he referred to the fact that he and Mr. Balfour and Premier Clemenceau had submitted proposals to President Wilson to bring the United States forces into the battle line with other troops so long as they were unable to take definite part in the action as an American army. Meanwhile Ireland still refuses conscription.





# Uncle Sam Wants to Borrow Your Money!

**M**ONEY that through your liberty he made possible for you to earn. There is no other security in the world so valuable as a Liberty Loan Bond.

You may have bought a First Liberty Loan Bond. And you may have bought a Second Liberty Loan Bond. And you may have foregone some pleasures or comforts in buying either or both.

But you *must* buy a Third Liberty Loan Bond.

This is more than a duty. It is your country's call at a time when *more money* is needed to win the war.

The vast sums already raised and expended were but stepping stones. Now comes the Third call and you must respond generously—with sacrifice, if necessary.

Let us finish it now—as a whole nation unified in lending. It is the only way to win, and win we must. Buy that Liberty Bond *today*!

*This page is donated by the following Patriotic San Francisco Firms who realize the necessity of Success of the Third Liberty Loan:*

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Everything for the dairy.

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Breeders of pure bred cattle.

Lactein Food Company  
Hearst Building, San Francisco.  
Buttermilk for chickens and hogs.

Pacific Pipe Company  
Main and Howard Streets, San Francisco.  
Iron pipe and pipe fittings.





Genuine  
Giant Powder  
bears *this* trademark

**GIANT FARM POWDERS**  
STUMPING — AGRICULTURAL

The Giant trademark is worth looking for, because it spells better blasting and more of it—done at lower cost. "Giant is powerful, nice to handle," writes Clarence Warner, Dayton, Ore., "and takes less powder to do the same work than other brands. I think Giant is just O. K."

Giant Farm Powders—Eureka Stumping and Giant Stumping—are made especially for western farm use. Every ounce of energy has exactly the right cracking, splitting and heaving action. More than half a century of such efficiency has made them so popular that other explosives are in error called "giant powders."

This indicates the superiority of the original. There is only one brand of Giant Powders. The Giant trademark is your sure protection against imitations.

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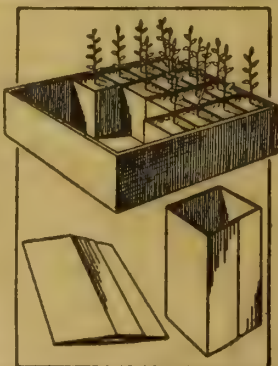
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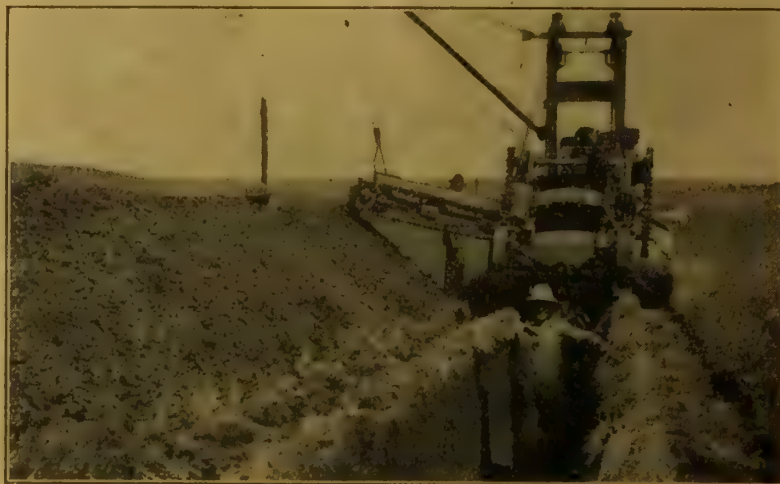
Better service is assured by the advertiser if when writing you mention the California Cultivator.

## New Irrigation District

Written for California Cultivator By Martha L. Baker

The first unit of the big Terra Bella district irrigation project in southern Tulare County has been completed and water from it is now being used. This irrigation system, which is the first of its kind to be built on so large a scale in this state, serves approximately 12,000 acres. The district was organized August 16, 1915, by resolution of the board of

property line and installs the meter free of charge, with a small charge for additional meters. The water is measured in pressure and gravity meters, the plan being to serve each individual property owner in units of ten acres. The water is measured in acre feet in the irrigation meters and in cubic feet in the domestic meters. The cost of the water cannot be defi-



Ditcher at Work on Terra Bella Lands

Tulare County soils are producing wonderful crops when water is carried to them.

supervisors of Tulare County, being one of the several new districts to be organized under the amended irrigation act of 1897. The district is funded by an authorized bond issue of \$1,000,000, of which \$600,000 has been sold.

Ten valley wells, all of which test 100 miner's inches or more, and one testing 177 miner's inches, three creek wells and an infiltration gallery, all of which have been tested out, furnish the water for the system. The water is delivered in a system of steel pipe lines to all parts of the district

nitely determined until the end of the irrigating season but the law provides the water shall be delivered to the property owners at cost. Six dollars and eighty cents an acre foot has been named as an approximate estimate of the cost of the water.

This big irrigation project is going to mean that hundreds of acres of now barren land in this part of the state can and will be placed under cultivation. The district under the system comprises some very fertile land lying at the base of the foothills of the Sierra Nevada and extending



Some of Terra Bella's Wealth Giving Water

—Engravings used by Courtesy of Terra Bella News.

and so is suitable for domestic as well as irrigation purposes. The system is operated entirely by electricity, with five zones, served by boosting stations augmented by reservoirs.

The district pipes the water to the

several miles west onto the plains. Part of the land in the district is especially adapted for the culture of oranges, lemons, olives, also deciduous fruits of numerous variety. The elevation of the land runs from 462 to 811 feet above sea level.

## Toxic Substance in Cotton Seed

At one time the Cultivator contained articles regarding the poisonous nature of cotton seed meal when fed to hogs continuously. Pork producers have usually fed sparingly, if at all, but it now appears that not only may it be treated so as to be fed to hogs but it is becoming a factor of value as human food.

The Agricultural News of Barbados comments:

The results of investigations into this toxic property by Messrs. W. A. Withers and Frank E. Carruth, of the chemical division, North Carolina experiment station, are recorded in a paper contributed by them to the Journal of Agricultural Research,



January, 1918. Previous work on this subject by these two scientists was recorded in the same journal.

They find that the toxic property of cottonseed meal is due to an active principle, which they name gossypol, and which is present in raw cottonseed kernels to the extent of about 0.6 per cent. Gossypol is readily soluble in acetone and ether, and moderately soluble in ethylic alcohol. The extraction of the gossypol by ether rendered the remainder of cotton seeds non-toxic when fed to pigs, whereas the ether extract containing about two per cent gossypol was highly poisonous.

It was found that cottonseed meal was much less poisonous than raw cotton seed, owing mainly, in their opinion, to the oxidation of gossypol by the cooking during the process of manufacture.

The experimenters conclude that the toxicity of cottonseed meal varies with the conditions of cooking the raw seed. Even after cooking for 28 minutes there was still left in cottonseed kernels 0.07 per cent of gossypol, as compared with the original 0.6 per cent. They are of opinion that thoroughly cooked cottonseed flour and meal have no apparent toxicity for rats, when supplemented by milk powder in the diet, although inferior in nutritive value to cottonseed kernels from which the gossypol has been extracted by ether.

It would seem, therefore, that it is possible, probably by a combination of extraction and cooking, to obtain a valuable foodstuff for human consumption from cotton seed, if also the seed is subjected to decortication for the purpose of removing the hard outer skin. Some such process is probably employed in the production of cottonseed flour in Texas, where, it is said, it is increasingly being employed in bread making. An extension of such manufacture in all cotton-growing countries would materially add to food resources, if after further trials the resulting flour can be depended on as free from the toxic property which has hitherto prevented its use as a food.

#### RAISING CALENDULA FLOWERS FOR MEDICINAL PURPOSES

Written for California Cultivator

One of the most common drug or medicinal plants in California, for which quite a demand has recently developed, due to stoppage of imports, is the calendula. The leaves or petals are the part used. They must be dark orange in color, clean, free from green leaves or stamens, and perfectly dry. The plants are hardy, of rapid growth and full of bloom practically the year around. Seed can be sown in beds one inch deep and transplanted into rows for cultivation, rows to be three feet apart and plants 15 to 18 inches apart in rows. As they bloom continuously they require plenty of fertilizer and water and frequent cultivation. Plants will begin to bloom 90 to 100 days from seed. They require picking weekly or as fast as the blossoms are fully developed. Pick without stems and place in shallow trays until partly dry. Then pull off the leaves and dry thoroughly, sift and put into clean flour or sugar sacks, ship by express or parcel post.

Prince of Orange is recommended as one of the best varieties. One-tenth of an acre makes a good trial planting and one-fourth to one-half pound of seed should bring plants enough to set it.

Ask no rest; we have a victory to win.

#### WOES OF THE FARMER

A Ventura subscriber writes of some of the woes of the farmer, and from the showing which he makes in the letter quoted below he has had his war time experiences. The worst of it is he is not the only one this year to whom things have looked serious and, as yet, still have anything

but a rosy hue. However, strictly from the farmers' standpoint the recent rains have given a little tinge of green which has, if not rosy, a look which means prosperity. The farmer writes:

"September ranch burned over by brush fire, some cattle burned. Dry weather until February 15, cattle dy-

ing for want of feed. Then 13 inches of rain, killing the weak cattle. Feeding for 15 days with hay, at \$35 per ton. Then a heavy rain making the hills slide, miring the stock. On March 8 some disease on account of low vitality of stock, loss 30 per cent. Where do we get off?"

#### FARM BUREAU DIRECTORS MEETINGS IN SACRAMENTO VALLEY

The directors' meetings for the month in the Sacramento Valley district are as follows: April 15, Colusa County, Colusa; April 16, Sutter County, Yuba City; April 17, Butte County, Oroville; April 18, Shasta County, Redding; April 19, Tehama County, Red Bluff; April 20, Glenn County, Willows.

Save energy by doing farm work with a gasoline engine whenever it is possible. A good engine will perform any work to which it is adapted much cheaper than it can be done by hand or frequently by horse power.

"There is no half-way house between victory and defeat." — Lloyd George.

Nothing is as usual; why eat as usual?



Storing Wealth in Tulare County

—Courtesy Terra Bella News.

## The Second Line of Defense

Behind our Army and Navy is our second line of defense—the farms of this country—which must provide the food necessary at home and abroad. The "Caterpillar" Tractor's important share in this work is to cultivate and harvest the crops more cheaply and more efficiently, to economize in man power, to increase production.

Because it will stand up to continuous, severe service, because its cost for operation and upkeep is low, because it will work under any and all conditions, the "Caterpillar" Tractor stands supreme. Holt manufacturing experience of more than three decades and Holt high standards of design, materials and construction have established and maintained this supremacy.

What the "Caterpillar" Tractor has done for others in reducing costs and increasing profits it can also do for you. Write today for complete "Caterpillar" Tractor information.

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Seventeenth Semi-Annual Consignment Sale of

# Pure Bred Holsteins

At Lake Mills, Wisconsin

April 30 and May 1 and 2

A Three-Day Sale of Top Notchers

A Few Choice Consignments  
From Old, Reliable Breeders

The Complete Dispersal of Two of the Very Best  
Herds of Southern Wisconsin

The J. P. Torrey & Son Herd of Kenosha, Wis., consisting of fifty head of choice good record individuals, headed by a 32.18 lb. grandson of Rag Apple Korndyke 8th. Daughters of the 46 lb. bull, Ormsby Jane King, King Segis Pontiac, King of the Black and Whites, Admiral Walker Prilly, King Walker Pietertje Segis, and more than a dozen calves sired by Mr. Bristol's Polkadot bull out of his 31 lb. cow that sold to Mr. Schuster for \$2100. Guaranteed free from contagious abortion, and with a 60-day guarantee for tuberculosis.

The Pioneer Oak Farm Herd, owned by F. M. Ames & Son, Brooklyn, Wis., fifty-five head, practically all officially tested, headed by King Tidy Alcartra (who will also be sold), a 30.27 lb. son of the \$50,000 bull King Segis Pontiac Alcartra. Records from 14 lbs. to 20 lbs, as 2 year olds, and everything over 20 lbs. from 3 years up. Rich in the blood of Pontiac Korndyke, King Segis, Fobes Tritomia and Mutual De Kol. Free from abortion. Federal tested and guaranteed to pass a Federal Re-Test of 60 days.

The cows in these two herds are heavy producers, have fine records, and are being tested right up to the date of sale as fast as they freshen. Other good things, too.

Auctioneers: Haeger, Kelley & Mack S. F. Wood in the box

Write for Catalogue to  
F. H. EVERSON, Sale Mgr. LAKE MILLS, WIS.

## THE GREATEST DAIRY COW IN CALIFORNIA



is a title that may well be claimed by MISS VALLEY MEAD DE KOL WALKER, who has added to her many accomplishments the winning of the California Dairy Competition over all breeds, with an actual production of 819.42 pounds butter fat in 10 months, and giving her a total credit of 966.9 pounds butterfat with age handicap as she is only a junior three year old. Keep your eye on her son

### King Korndyke Pontiac 20th

our junior herd sire, for whom we paid \$6500 in the Guaranty Sale. You will want to buy one of his sons one of these days, and in the meantime visit our herd whenever convenient and see the great

cows and heifers with which he is being mated. Our senior herd sire, PRINCE RIVERSIDE WALKER, is by the same sire as Miss Valley Mead De Kol Walker, and is out of the same dam as Aaggie Acme of Riverside 2nd, 1331.77 pounds butter in one year, the world's official record. A young son of PRINCE RIVERSIDE WALKER will introduce this wonderful combination of breeding into your herd. Only a few on hand and they are priced so reasonably that they will not remain unsold very long.

Our Entire Herd is Tuberculin Tested

## Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

## — Just the Bull You Need —

### A Son of King Mead of Riverside

To increase your herd production and improve its type and markings. He is a nice one, ready for service, straight, deep-bodied and three-fourths white. Remember that King Mead is in the front rank as a sire of great yearly record cows, and no other bull of the Holstein breed has transmitted as high per cent butterfat.

The dam has a record of 818.86 pounds butter and 21.14 pounds milk in a year. She has two sisters that average 1110 pounds butter and 28,817 pounds milk. She is a daughter of Ignaro De Kol, the only bull in the world with ten daughters that have each produced 20,000 pounds milk in a year. You will miss a golden opportunity if you overlook this one. The price is within the means of any progressive dairyman.

A. W. MORRIS & SONS CORP.

Woodland, Cal.

## Breed Leaders

Every breed of livestock has its outstanding character the same as the human kind. A great dairy cow has proved her ability to produce anywhere up to 15 tons of milk annually; the trotting horse has secured his record around two minutes; the beefmaker has shown his ability to make the least amount of feed into the greatest amount of food; swine, sheep and others of the livestock family have shown themselves great characters. In addition—and here is where their worth is proven—these animals can transmit their productive power to their offspring.

Beginning with the issue of August 4 the Cultivator gave an account of Pietertje Bloom of the university farm dairy herd. Some things she has done and more that her daughters have done were chronicled. She was a most worthy leader in this series of articles. Others of her kind follow. More of the "handsome is as handsome does" type of animals will be given in the columns of the Cultivator during the next few months.

Written for California Cultivator By W. Bernstein

### IN HONOR OF CANDY KID

**T**HIS famous Poland-China sow, which has held such a prominent place among this breed in California and has probably attracted as much attention in the state as any in the

third floor and shown in the room where the banquet was held.

Candy Kid has raised a number of litters, one litter being 12 in number. Out of her last litter two sows were sold at one year of age at the consignment sale February 20, one bring-



Candy Kid

breed, was farrowed March 1, 1913. Her sire was Speedway No. 153167 and her dam was Goldenrod No. 239020. Candy Kid was bred on the ranch of Thomas Hunter, president of the American Recording Company, at Morrow, Ohio. Probably no better blood lines were ever crossed than in the breeding of Candy Kid, and none have ever shown greater results than in this valuable sow.

She farrowed her first litter in the spring of 1914, from which she raised six pigs. She made her first appearance in the show ring at the state fair in the fall of 1914 where she received the award of grand champion. Showing at the same time with her sisters, Chocolate Drop and Taffy Girl, and brother, All Is Well, they received second in herd over one year, while my older herd, headed by Kings Wonder, in this same contest won first in herd over one year.

Following the state fair in the same fall Candy Kid won the same honors at the Kings County fair where she was passed on by two judges. At the P. P. I. E. she was placed second as she was not fat enough to do herself justice.

To increase interest in a meeting held in Fresno for the purpose of discussing the proposition of establishing stockyards there, at the request of the Commercial Club she was taken to Fresno and by means of the passenger elevator was carried to the

ing \$300 and the other \$210. She is due to farrow again on March 26, having been bred to the same boar that was the sire of the two sows mentioned above.

My brother's boar, President, was the sire of the above sows. When she was bred to him she was too fat at the time of breeding and only farrowed five pigs, but if she never farrowed again, in the three sows she raised from the last litter she has done herself proud and much for the Poland-China breed.

The most that Candy Kid ever weighed so far as I know was 702 pounds. She is an extremely easy feeder and is an ideal mother. She has been admired by hundreds of people who have visited my ranch and in particular by the boys' clubs, some of whom have come long distances to see her. The boys have had my best wishes and along with them the hope that they may be fortunate enough some day to get a sow as good as I consider Candy Kid.

What her real value has been to me might seem a joke to some breeders but it has been so real to me that I have never even considered an offer for her. As time passes I may own a sow as good as Candy Kid—I may own some that will bring me more dollars and cents because of the increased value of pure bloods, but I am sure that I will never own a better one.

## Silage for Hogs

It has been proven that pigs on a good alfalfa pasture with grain added grow far more satisfactorily and produce meat far cheaper than where fed on exclusive grain diet. Hence the question has often come, "Why not silage for hogs?" It has been tried and with varying success. Many hog growers think it is too bulky. The question is discussed in The Rural New Yorker, and that because of resolutions, or rather a telegram, sent

by farm bureau agents of California to President Wilson, in which the points were made.

1. To urge the building of a silo and planting of sweet sorghums for silage and for syrup on every dairy farm in California.

2. Put out on 20,000 farms one good brood sow or two pigs in order to increase the amount of pork that state will raise. At least 40,000 more hogs will be so raised.



# Fourth Sacramento SALE

150 Registered Holsteins 150

Sacramento, June 5-6, 1918

A Sale of Extraordinary Character

Featuring some of the most highly bred cattle yet offered in a California sale.

Cows with official records up to over 30 pounds butter in seven days!

Daughters of 30-35-40 pound sires! At least a dozen granddaughters of King Korndyke Sadie Vale!

Four daughters of King Segis Pontiac!

Two daughters of King Segis De Kol Korndyke!

A daughter of Prince Gelsche Walker out of a 27 pound daughter of a 32 pound cow!

Splendid bulls, out of dams with records up to over 34 pounds butter in seven days!

Outstanding cows and heifers in calf to the foremost sires in the state!

Show ring winners, and sons and daughters of show winners!

Management

California Breeders Sales and Pedigree Company

Sacramento, California.

## APPLETON Silo Filler

Its new features save you money.

For years famous for dependability, great capacity and light running, the Appleton now has new features which make it the biggest labor, time and money-saving silo filler. Get the proof-free catalog describes these improvements. Write today.

H. C. Shaw Co., Dept. A, Stockton, Cal.

Four Sizes

## DETAILS

Every transaction in registered livestock is attended by a large number of details, many of them small but no less important.

Our sales methods take care of the details for both buyer and seller, rendering both a high class service.

Write us if you want to buy or sell.

California Breeders Sales and Pedigree Company

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## NAIL THEM You Can't Puncture 'em

Service Tubes are like other pneumatic tubes, except they're puncture proof. Drive right over tacks or nails; simply pull them out. No leak! With Service Tubes you can travel

6,000 Miles Without a Leak!

Inflate as usual. Tire guarantees not interfered with. Service Tubes cost only few cents more than ordinary tubes. Shipped prepaid on approval. Write for complete Tire and Tube Catalog. State also used.

SERVICE AUTO EQUIPMENT COMPANY 841 Treaders Building, Kansas City, Missouri

## Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines

The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.

Hydrometric Co. 955 North Main St. Los Angeles Cal.

The R. N.-Y. comments as follows: "Others refer to boy and woman labor, simpler plans, tested seed and fire protection for grain fields. They were all sensible, and the two here printed ought to be considered everywhere. The sugar situation is hard. We are told in Washington that a larger supply of sugar is expected during the summer, but we should all try to help out with a home supply of sweets. We have little faith in the advice to grow sugar beets for home sugar making. Sorghum will make a good syrup and can be grown on nearly every farm. It also makes good stock fodder. As for the silo, there should be five times as many as are now to be found in New York and New England. There were 43,629 silos in New York in 1916. The brood sow is a farm lady and she will help carry the army on her back. We know now that we can make pork on pasture. It is no longer a question of feeding grain entirely. The pig is a grazing animal; as much so as a cow or sheep—if we give him a chance. Silo, sorghum and sow! A great combination—as straight as the S is crooked!"

### DAIRY CIRCULAR


A valuable circular issued by the experiment station of our state college of agriculture is "Factors of Importance in Producing Milk of Low Bacterial Count," a study of the sources of bacteria in milk. It includes practical suggestions for keeping down the number. As bacteria exist in the udders of all cows, all raw milk contains some bacteria, but it is not necessary to encourage their increase, states the circular. Professor C. L. Roadhouse, its author, says nothing can be done to lessen the bacterial content of the normal udder except to keep the cows out of deep mud, and particularly the mud of the stable yard, which is permeated with bacteria that cause udder trouble.

The necessity for extreme cleanliness is urged and careful directions are given for each stage in the handling of the milk. Professor Roadhouse tells how to care for the cows before milking so that no dirt from the body or udder of the cow may find its way into the milk, how to keep down dust in the milking stable by feeding the cows an appreciable time before milking and then sprinkling the stable, urges the importance of personal cleanliness of the milker, and gives full and detailed directions for the washing and sterilizing of all utensils used. He also gives plans and specifications for three different sterilizer tanks, costing approximately \$11, \$22 and \$27, and directions for building a simple outdoor furnace for heating the water in the tanks.

For proper cleansing, dairy utensils should be first washed in cold or warm water to remove milk and any sediment, then brushed with a washing solution, prepared from salsoda or from one of the commercial washing powders, followed by rinsing in warm water to remove the washing solution—and then the utensils may contain thousands of bacteria! To destroy these, the utensils must be thoroughly sterilized with steam or boiling water. Professor Roadhouse says unsterilized utensils are the greatest source of bacteria in milk. The circular may be obtained free of cost by writing the University of California, College of Agriculture at Berkeley.

Buy another Liberty Bond.

Tuberculin Tested



PURE BRED

REGISTERED HOLSTEINS

Production

## When You Look at Our Wonderful Sire King Korndyke Pontiac 106519

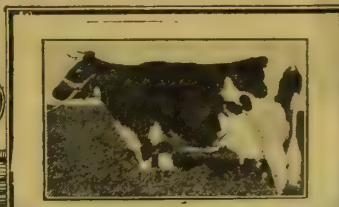
and then look at his dam's picture below, is it any wonder that he should be a real producer? The best evidence, however, is what his get is really doing. At the present time we have but one daughter in milk, and she certainly is a producer in every sense, with a most uniform udder and in every particular the real dairy type. We then have a number of yearlings and some few that are approximately 18 months old and are bred to calf at two years of age. It is difficult to imagine more beautiful and more uniform animals, possessing wonderful individuality, straight top lines, with all the characteristics that make the real dairy cow, namely, capacity, size, the small head and neck, the large middle and big bone. But you ought to see his calves this spring! We simply can't describe them, and only hope you can call some day and look them over personally. These are calves from the heifers sired by our other sire, Prince Gelsche Walker Korndyke No. 137414, and the combination, which we always felt would work out just right, is now an established fact. One look would convince any breeder. Don't you think it would pay to own one of his bull calves, raise him yourself, get him reasonably and thus build up your herd? One look and we know the answer is "Yes." Take our advice, you can't miss!

Superior

### JANE GARDEN FARM

SACRAMENTO - CALIF.

FRED W. KIESEL PROP'R.



C.W. YOUNG S'PT.

Guaranteed

## "Whenever I Find Korndyke De Kol's Prince in a Pedigree My Respect for That Pedigree is Always Increased"

That statement was made publicly by Mr. A. A. Hartshorn, Hamilton, New York, formerly President of the Holstein-Friesian Association of America, during the last October Sale at Sacramento, which he attended. Mr. Hartshorn is noted for his accomplishments as a Holstein breeder, and one of the greatest factors in his success has been the way in which he sticks close to the practice of selecting individuals and families that transmit uniformly high production.

### Prince Alcartra Korndyke



our senior herd sire, is a son of Korndyke Queen De Kol's Prince, and his dam is Tilly Alcartra, 40.78 pounds butter in seven days after making a total of 123,351.3 pounds milk and 4,919.12 pounds butter in five consecutive years.

PRINCE ALCARTRA KORNDYKE is breeding on. His first five daughters to complete yearly tests as two year olds average 15,333 pounds milk and 675.92 pounds butter.

In a son of PRINCE ALCARTRA KORNDYKE out of one of our good cows you get the greatest certainty of the power to transmit high production and the type that should go with it. Let us price one of his sons to you now before prices advance as his daughters continue to make further high records.

The J. S. Gibson Co. Williams, Cal.

Clean and Clear as Water



Awarded Gold Medal Pan-Pac. Expo.

## For Contagious Abortion

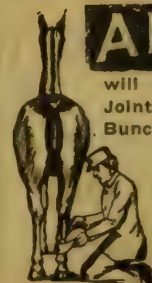
Thorough use of B-K as outlined in our Bulletin 52, "Contagious Abortion," is the surest means known of controlling Contagious Abortion, preventing Barrenness, and removing Retained Afterbirth.

Complete irrigation of the uterus and vaginal tract is easy with B-K. B-K kills the infecting germs and foul odors—heals the uterus—removes the slime and acid—no irritation—no straining. B-K is much more effective and safer to use than lysol, carbolic acid, Lugol's solution or coal-tar disinfectants, which do not cleanse the uterus, but make it more acid.

If your dealer does not have B-K, send us his name.

FREE BULLETINS: Send for complete information—"Special trial offer" and bulletins No. 52, "Contagious Abortion," and No. 136, "Calf Scours."

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TRADE MARK REG. U.S. PAT. OFF. will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. \$2.50 per bottle delivered.

BOOK 7 R FREE

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## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy Perkins, Cal.

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## Come to Stanislaus County for Registered Holsteins

### STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

I have for sale a 14 months old son of  
**Abbie DeKol of East Bank 2d**  
winner of third prize in California Dairy Competition, 656.1 pounds butter fat in ten months. He is a fine, straight individual, and sired by a son of a great show cow that won prizes in the butter fat competition at two fairs. Priced right.  
**H. E. CORNWELL,**  
Route B Box 183, Modesto, Cal.

**White House Holsteins**  
A well bred proven herd sire for sale, also a few bull calves.  
A. M. Bibens, Rt. 1, Box 307, Modesto, Cal.

**Thompson's Registered Holsteins**  
Young bull calves for sale with yearly record backing.  
Luther Thompson, Rt. A, Box 351, Modesto Cal.

**Creamcup Holsteins**  
Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale.. **M. HOLDRIDGE, Rt. B, Box 366, Modesto, Cal.**

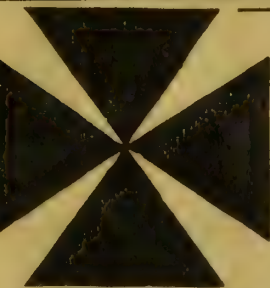
**Pelandale Holsteins**  
Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.  
J. A. Pelanda, Rt. B, Modesto, Cal.

**HOLMES STOCK FARM**  
Registered Holsteins of best breeding. Young bulls for sale.  
R. L. Holmes Modesto, Cal.

**Segis Pontiac De Kol Dutch**  
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

**SUNNY STANISLAUS**  
The county where "water—wealth—Contentment—Health" as well as the county where are some of the finest dairies in the world.

Our "Senior Herd Sire is **KING KORNDYKE HENGVERVELD ORMSBY 7th**  
Five of his sisters sold at public auction for \$23,800, an average of \$4760.  
This blood has made some of the world's greatest producers. Our junior herd sire is **TOYON KING KORNDYKE SOLDENE**, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne. Young bulls for sale. No females.  
**REGISTERED BERKSHIRE BOARS**, sons of the \$1500 boar Star Leader, for sale.  
**Kounias Registered Stock Farms, Modesto, Cal.**



## Santa Anita Rancho Anoakia Breeding Farm Registered Holsteins

Our Junior Herd Sire, **Prince Walker Cornucopia** is now in active service and will be bred to a large number of high class cows and heifers during the coming year.  
His sire is **PRINCE GELSCHER WALKER**, whose daughters have commanded the attention of the entire Holstein breeding world through their tremendous records.

His dam is **ALBA SADIE CORNUCOPIA CREETIA**, 34.14 pounds butter in seven days, and she is by a son of Sadie Vale Concordia, 30.64 pounds butter in seven days, who is the dam of Sadie Vale Concordia 4th, 41.06 pounds butter in seven days, and she in turn is the dam of the sensational sire King Korndyke Sadie Vale and Sadie Vale Concordia 4th Pletje, 38.43 pounds butter in seven days.  
This combination of breeding we consider of exceptional promise and an outstanding offspring should result from the splendid females with which he is being mated.  
At present we are sold down to a limited number of young bulls, sons of our senior sire **MERCI LAD KORNDYKE BURKE**, whose dam made \$1,034.1 pounds milk and 1201.06 pounds butter in one year. They are priced moderately. Inquiries or orders by mail will receive prompt attention.

**Santa Anita Rancho, Santa Anita Cal.**

W. H. Taylor Supt.  
Anita M. Baldwin, Owner

## Kansas Germ Free Fluid Vaccine For BLACKLEG

This seal is our word of honor and your protection. If it is not on the label of every bottle don't use it. Only the original carries this signature.



Made by **Dr. O. M. Franklin, Originator**  
Holds the record of immunizing more than a Half Million Calves against Blackleg with — only one handling of each calf — has stood the test of time—easy and safe to use—cannot give the disease to calves or spread it in pastures.

Leading cattlemen use it exclusively and recommend it to their friends—ask any of them or write to the nearest office for references and free Booklet on Blackleg.

DENVER, COLO. WICHITA, KANS.  
AMARILLO, TEXAS  
401 Bryson Bldg., LOS ANGELES, CAL.

**The Kansas Blackleg Serum Co.**

## HEREFORDS

A large herd of selected stock to choose from. Everything sold is guaranteed as represented. Why send East for breeding stock when we can supply your needs. Save time and money by writing us for particulars.

**Cottrell & Packard, Tempe, Arizona**

Members Pacific Coast Hereford Breeders Association

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

**Hauser Packing Co.**

**Los Angeles**



EVERY HOG IS WANTED  
Save All Yours By Giving  
Then Regularly  
**Economy Powder**

Send for Free Sample and Stock Book  
**Economy Hog & Cattle Powder Co.**

SAVE YOUR HOGS

Heart Bldg.

San Francisco Cal.

## Field Notes from the Live Stock Men

D. F. Conant of Modesto, has a number of his best Jerseys coming fresh at early dates. They will all be put on test. He has sold off a few of his young heifers as he has been slightly overstocked with this class of stock.

Reported sales of young Jersey bulls from the Modesto Venadera herd of Guy H. Miller: A bull calf by Altama Interest out of Lorna of Venadera to W. E. Miller, Stratford; a young bull and heifer to A. W. Nolan, Forestville; a young bull to Homer Winton, Camp Meeker.

Hale I. Marsh, Modesto, reports good sales of Poland-Chinas, with orders booked ahead. His futurity litters are very promising.

Recent sales of young Jersey bulls from C. D. Hayworth's Rico Vegas Farm at Modesto have been made to J. W. Garlic, Modesto; Van Assen Bros., Ripon; and W. Michaud, Ceres, who purchased Exile of Rico Vegas, first and reserve grand champion at Modesto and second in class at the San Francisco Land Show, both in 1917. Mr. Hayworth says that during the last six months he has had more calls for bulls, heifers and mature cows than ever before.

J. J. Flaherty, cashier of the First National Bank of Orland, which has a settled policy of loaning money for the purchase of registered Jersey cows in the Orland district, said in a speech made at the banquet at the annual meeting of the Orland Jersey Cattle Club: "We consider our loans for this purpose as the best, cleanest and safest of all the paper the bank holds. Since we began to make these loans we have never lost a cent, either principal or interest."

J. E. Thorpe, Lockeford, has a fine futurity litter of Duroc-Jerseys.

N. H. Locke, Lockeford, is completing a modern milking barn that will accommodate 100 head.

Eldorado Winfred, a senior two year old Holstein heifer bred and owned by Alex Whaley, Tulare, is on official test and has to her credit 25.15 pounds butter from 529.5 pounds milk in seven days. She is now milking around 80 pounds per day. She is sired by Sir Holland Gamp, the great

show bull formerly at the head of Mr. Whaley's herd and is out of Winfred Hotaling 3d, 32.19 pounds butter in seven days, the great cow that brought \$1750 for Mr. Whaley in the Guaranty Sale.

Pacific States Corporation, owners of Tagus Ranch, Tulare, recently completed the first group of the season's official records in their herd of registered Holsteins. El Prado Mercedes made 480.1 pounds milk and 21.84 pounds butter and Mercedes Colantha Aaggie made as a junior three year old 403.3 pounds milk and 18.08 pounds butter in seven days. Both of these are daughters of Colantha Sir Pontiac Aaggie. Rosina Gamp made 20.81 pounds butter from 383.9 pounds milk in seven days, and she is a daughter of Sir Holland Gamp. Tagus Parthena Korndyke, a senior four year old, made 20.11 pounds butter from 406 pounds milk, and Lockhaven Posie De Kol made 17.75 pounds butter from 366.3 pounds milk in seven days. Frank E. Gillam, in charge of the dairy department at Tagus, has a string of good ones coming up for test and should have another bunch of good records to report before the end of the season.

Raphaella Johanna Aaggie 3d, a registered Holstein cow owned by Napa State Hospital, Napa, is making a wonderful milk record. From last reports she had 927.38 pounds milk and over 31.5 pounds butter to her credit on official test in seven days. This is the second highest seven day milk record in the world, being exceeded only by the Canadian cow May Echo Sylvia, who made 1005 pounds milk in seven days under official test.

W. A. Young and J. A. Clark of Lodi are justly proud of their herd sire, Big Bone Bob, who in fair flesh at 14 months weighs 600 pounds. He is a son of a world's champion, Long Big Bone, who is just 1115 pounds of pork. Big Bone Bob's dam is Model Wonder, weight 850 pounds. She was sired by Peerless Big Bob, 1120 pounds. This firm reports recent purchases: A gilt from A. H. Sevre, Dows, Iowa, bred to Golden Gate King; a gilt from C. H. Porter, Eagle Grove, Iowa, bred to Big Kover; a very fancy bred August sow pig from Ed D. Fraser, Dextrel, Missouri.

## High Quality Poland-Chinas

William Bernstein, one of the Poland-China breeders in that little Poland-China county, sometimes known as the Kingdom of Kings, has been a breeder of some of the finest Poland-Chinas the state has ever seen. This has been shown by their winnings at the International Exposition, at state and other fairs for years. Now Mr. Bernstein announces that he is compelled to greatly reduce his herd because he finds it impossible to spare enough time to properly look after so large a herd as he has always kept. To that end he is going to have a sale and writes that some of the stock that he regrets to see leave will be sold under the hammer at Hanford, April 17. The sale will be preceded by one of Bernstein's famous lunches which will be served at 11:30 A. M.

While most of the animals to be sold are young stock ranging in age from five to ten months, there are enough of the older and thoroughly tried animals to be sold to induce a large number of buyers to attend.

Among the boars is Young Jumbo,

an animal that has every promise of being the foremost Poland-China boar in this state. He was acquired by Mr. Bernstein for the purpose of heading his herd and to represent his herd in the show ring, but he has been put in this sale for the purpose of adding interest to it. There are some equally high class sows to be sold. Any breeder needing new blood, young or old, will find it to his advantage to attend this sale.

In all 60 head are to be sold. Col. Ben A. Rhoades is the auctioneer.

### CALIFORNIA GUERNSEY

Only a few Guernsey cows have been tested in California, but the character of the records has been remarkable and there are more good ones in sight. The latest member of the breed to come to the front is G. W. Wilder's Class B cow, Imp. Brittleware Mistletoe 48510. She calved November 25, 1916 and was placed on test December 1, 1916, completing her year with a record of 14,467.2 pounds of milk and 751.38 pounds of butter



# TAGUS

## Duroc Jerseys

Home of California  
Defender, World's  
Champion Boar.

**Special offer:**  
**\$100 each for his**  
**Sons**

(Swine Dept.)

**Pacific States Corp.**

**TULARE, CAL.**

H. C. MERRITT, Jr., Manager

## Large Milk Yield

High % Butterfat

**GOOD TYPE**

Can all be bred into your herd by a son of

Dutchland Sir Pieterje Creamelle our herd sire, whose sire is by Pieterje Hengerveld's Count De Kol and out of the great transmitting cow Changeling. His dam is a daughter of the former world's record cow Creamelle Vale, and is by a grandson of De Kol 2nd, the foundation cow of the De Kol family.

He has 14 A. R. O. daughters, records all made in our herd, with records up to over 30 pounds butter in seven days at three years. We especially appreciate the orders of dairymen who want good young bulls at modest prices. Write for prices and descriptions.

**F. STENZEL**

San Lorenzo

California

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory, 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

**513 Hearst Bldg., San Francisco**  
**Carruthers Farms, Mayfield, Cal.**

## HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 81 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

**Frank Reed Sanders, Mesa, Ariz.**



Pure and Cross-Bred Rambouillet Range Sheep. Also Breed Hampshires.

## Mutton and Wool

J. BIDEGARAY

Fresno - - - - - California

## Hereford Bulls for Sale

Eight months to two years old.

One or a Carload

**Platt Bros.**

Genesee

Idaho.

fat. This record entitles her to eighth place among the leaders in Class B.

Imp. Brittleware Mistletoe 48510 was bred in England by Godfrey Oakley, and imported by J. L. Hope of Madison, New Jersey. She is a daughter of Admiral of the Briquet 2116 E. G. H. B., A. R., and Brittleware Stella 6077 E. G. H. B. This makes her a granddaughter of Imp. Fanny's Sequel 19563 A. R., and a double great granddaughter of Imp. Masher's Sequel 11462 A. R., with 68 daughters and 19 sons in the Advanced Register. Had she been kept in the certified barn and her 14,467.2 pounds of milk sold as Hollow-Hill Farm certified milk, which brings 20 cents per quart, at retail, the returns for labor and feed would have been approximately \$1377. Her milk was separated and the cream made into butter for home use so no accurate amount of profit can be given.

### R. F. GUERIN HOLSTEIN SALE

Written for California Cultivator  
By C. A. Briggs

On April 4 at the farm between Tulare and Visalia the California Breeders' Sales and Pedigree Company held a dispersal sale of the mature animals in the herd of R. F. Guerin. C. L. Hughes, sales manager, and Col. Ben A. Rhoades, auctioneer, say that all things considered this was the most successful sale of registered Holsteins ever held in the state. The crowd was large and the bidding brisk. The particular and most satisfactory features of the sale are that the bulls sold well and that they and many of the good cows and heifers went into the hands of farmers and dairymen in Tulare County. New buyers form quite a percentage of the list of purchasers.

Eighty head were sold, bringing the very satisfactory total of \$27,520, an average of \$346.50 a head. The buyers were H. A. De Wolfe, Ripon; H. M. Cross, Merced; E. Ratterbury, Crows Landing; Robert S. Curtis & Son, Exeter; J. E. Peck, Calexico; W. J. Higdon, Tulare; Bohnett Bros., Campbell; F. M. Helm, Fresno; H. V. Greenwood, Vallejo; H. E. Vogel, Fresno; W. F. Mitchell, Tulare; F. C. Van Loan, Visalia; A. E. Montgomery, Merced; E. R. Atterbury, Crows Landing; Geo. Sibley, Tulare; J. P. Phillips, Fresno; Robert Whaley, Tulare; C. A. Pears, Tulare; L. C. Clark, Visalia; F. M. Elmo, Tulare; Alex Whaley, Tulare; E. A. Hesseltine, Tulare; W. Bernstein, Hanford; Chas. H. Holmes, Tulare; R. L. Waltz, Hardwick; H. C. Pearce, Tulare; Louis Stiner, Visalia; F. D. Campbell, Tulare; H. D. McCune, Le-moore; Henry Anderson, Tulare.

### WORKING RESERVE

The state council of defense has inaugurated a campaign for the enrollment of 37,000 high school boys in the working reserve. The drive for enlistment in this reserve will begin April 15.

Plans for the enrollment campaign provide: That every high school principal throughout the state shall act as enlistment officer; that all boys desiring to enlist in the reserve shall go to the nearest high school principal; that farmers who contemplate using parties of boys as farm workers during the coming summer shall apply to country farm advisers; that the Y. M. C. A. will send trained field agents with each party of boys to look after their physical and moral welfare.

"Raise more alfalfa"  
-is the cry of the stock interests to the ranchers of California

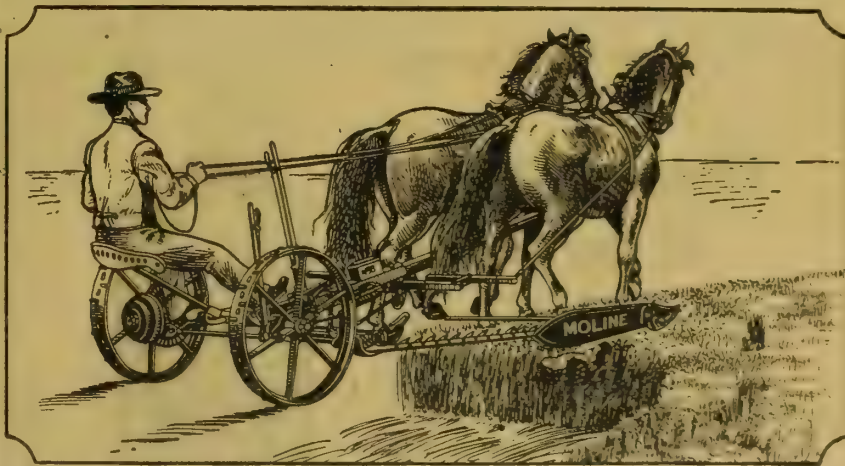


Despite the late rains the supply of hay for the next twelve months will fall far short of meeting the normal demand, according to authorities who have carefully studied the situation. The ranchers of the State must loyally come to the rescue by planting alfalfa at once. By doing so they will fatten their bank accounts and save the great stock interests of California.

Take no chances with seed of doubtful quality. Buy German's Selected Alfalfa Seed and insure bountiful crops of high-food-value hay. Place your order TODAY!

Send for Free Seed Catalogue

**German**  
Established 1871  
**Seed & Plant Co.**  
325 - 326 - 330  
SOUTH MAIN STREET  
LOS ANGELES - CAL.



## Use the Moline Mower for Tough Heavy Cutting

On the rear of the Moline Mower you will notice a bell shaped gear. When this gear gets into motion it has the same effect on the sickle as a fly wheel on any machine and carries the mower through heavy and difficult cutting where other mowers fail. You can always depend on the Moline.

This is the same principle that was used on the old Adriance Buckeye Mower 60 years ago, and you won't find it on any other mower on the market. In fact, this mower is the old original Buckeye, now called the Moline Mower, and is greatly improved. Every user of a Moline Mower profits by these years of service and knows his Moline Mower will not fail him in a "pinch."

Other features such as, one-piece main frame; cold rolled steel axle and shaft; pawls and ratchets in plain view; coupling frame hinges which will not bind; five-inch driving wheels, extra heavy cutting parts; removable wearing plates; alignment device for the cutter bar; spring draft; forward acting foot lever and many other distinctive features, carry the Moline Mower through tough cutting year after year.

It will be worth a whole lot to you to have a Moline Mower at work on your farm. Remember when you get a Moline Mower you get the product of one of the oldest and most reliable concerns in the business. This means that you can always get repairs for a Moline Mower.

Your Moline dealer will be glad to show you the Moline Mower or if there is no Moline dealer in your locality write us for full information. Address Dept. 49.

### MOLINE LINE

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plovers (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Patent Six Automobiles.

**MOLINE PLOW CO.** **MOLINE ILLINOIS**  
MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865



# 50 Registered Holsteins of Quality--50

TWENTY A. R. O. COWS AND HEIFERS with official records up to over 24 pounds butter in seven days.  
 FIVE DAUGHTERS OF SENORITA CLYDE, full brother to a three year old that made 707.31 pounds butter in one year.  
 AN A. R. O. SHOW HEIFER out of a 25.78 pound dam that made 707.31 pounds butter in one year as a three year old.  
 A DAUGHTER OF A 23 POUND COW heavy with calf to a 30 pound grandson of Sir Rag Apple Korndyke.  
 THE GRAND CHAMPION COW at 1916 Modesto Fair, bred to the 30 pound show bull El Prado Wayne Colantha.  
 THREE DAUGHTERS OF MODESTO NYDIA who has five A. R. O. daughters with records up to 25.74 pounds butter in seven days, 926.35 pounds in one year, two of them with over 20,000 pounds milk in one year.  
 NINE DAUGHTERS OF SALAMBO CAPTAIN, who has 11 A. R. O. daughters with records up to 24.26 pounds butter in seven days.  
 FIVE DAUGHTERS OF ACME PONTIAC, son of King Pontiac Ruby Burke and out of a daughter of Pietertje Bloom, 21,455.3 pounds milk and 754.25 pounds butter in one year.  
 FIFTEEN COWS AND HEIFERS bred to El Prado Wayne Colantha, 30 pound son of Colantha Sir Pontiac Aagie, and first prize aged bull at 1917 California State Fair.  
 A 22.78 POUND GRANDDAUGHTER OF KING SEGIS bred to Pride Fayne Valdesa.  
 AN A. R. O. GRANDDAUGHTER OF JULIANA DE KOL, former world's record two year old, bred to Colantha Sir Pontiac Aagie.  
 AN A. R. O. GRANDDAUGHTER OF IGNARO DE KOL, the greatest sire of yearly record cows of the breed, bred to Pride Fayne Valdesa.  
 A GRANDDAUGHTER OF ALCARTRA POLKADOT CORRECTOR, sire of Tilly Alcartra, bred to Colantha Sir Pontiac Aagie.  
 FOUR COWS AND HEIFERS BRED TO PRIDE FAYNE VALDESSA whose sire is by King Hengerveld Aagie Fayne and out of FINDERNE PRIDE JOHANNA RUE, 1470.59 pounds butter in one year, world's record when made, and whose dam is a daughter of Valdesa Scott 2nd, 41.88 pounds butter in seven days, 164.29 pounds in 30 days.  
 SEVEN COWS AND HEIFERS BRED TO COLANTHA SIR PONTIAC AAGIE, son of Colantha Johanna Lad, and he already has a good list of A. R. O. daughters, including Moorland Johanna Haskins, 32.86 pounds butter in seven days as a junior three year old.

## BULLS

Only a few young bulls will be offered, including a son of Colantha Sir Pontiac Aagie out of a 22.62 pound three year old; a son of the 31 pound sire, King Pontiac Ormsby Segis; four sons of the 30 pound show bull, El Prado Wayne Colantha.

All of the above and others of equal merit will be sold in the

## North San Joaquin Breeders' First Consignment Sale

Modesto, California, Thursday, May 9, 1918

The sale will be governed by the regular rules of this company, every animal pledged to absolute sale without reserve, limit, or by-bid, every animal guaranteed to be a breeder, tuberculin tested, and sold subject to tuberculin retest by the purchaser.

Catalogue Free on Request

## California Breeders Sales and Pedigree Co.

J. M. Henderson, Jr., President C. L. Hughes, Sales Manager.  
 Sacramento, California.  
 Auctioneers—Col. Ben A. Rhoades; Col. Cy N. Clark.

## A Timely Warning TO COW OWNERS

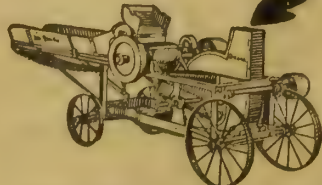
That first crop of alfalfa with its weeds and foxtail won't make good hay, but it will make Good Silage. Keep up the milk flow this summer by ensiling that first crop and feeding it out as silage, when green pasture is scarce.

The silo will be empty in time to fill with Corn for winter feeding.

## Save Your Green Feed With an IDEAL GREEN FEED SILO



## This Machine Helps Reduce Feed Costs Acme Feed Cutter and Silo Filler



Its steel frame construction, 3-bearing main shafts and center hung blower make it a light running cutter free from vibration. Use it at all seasons of the year. It fills the silo, cuts dry feed; makes alfalfa meal.

BUILT IN SEVEN SIZES.

SILO AND CUTTER CATALOGS MAILED ON REQUEST.

Ask for sample of Alfalfa Meal made by the Acme Cutter.

DE LAVAL DAIRY SUPPLY CO.

61 Beale St.

San Francisco, Cal.

## WHY COWS ARE SO

The Story of Posy and Elfy, by Leroy Anderson



HEY were two registered Jerseys, both sired by Minette's Pedro, and since their dams were distantly related, they were a little better than half sisters. During their first two lactation periods they had varied so widely in milk production that they were thought fruitful subjects of investigation as to the possible causes of such wide variation. Accordingly they were bred at the same time in order that they might begin the third lactation period together. In age they were about equal and in weight about 900 pounds each.

In planning the investigation it was considered that there may be four possible causes of the wide difference in milk producing powers which are found in every dairy herd, and which may be indicated in the following manner. In order to save space, the method of solving each case is here given along with the statement thereof. Posy is the cow having the high production of milk, while Elfy is the inferior cow.

A. Difference in the coefficient of digestion, which means that possibly the inferior cow digests a smaller percentage of its food and hence has less to turn into milk. When the cows were in full milk a ten-day digestion trial was made with the result that Posy digested 64.39 per cent of her food and Elfy 64.99 per cent. It may be said that the coefficient of digestion is the same for each, and this possible source of variation is eliminated.

B. The inferior cow may require a larger portion of food for maintenance than the superior cow and thus have less food from which to make milk. A cow normally uses its food for two purposes; one to maintain the body and the other to manufacture milk. The solution of the maintenance question could not be made until the milking period was over. Hence the cows were not bred and when dry each was fed for 160 to 180 days on a ration which was sufficient to keep her at an even weight. The ration was the same as to kinds of feed which they had when in milk, but of course much less in quantity. The grain mixture was cornmeal four parts, wheat bran two parts and linseed oil meal one part. The roughage consisted of choice alfalfa hay and good corn silage. Based upon the 180 day trial the maintenance requirement of each cow for a year is as follows:

	Grain	Hay	Silage
Posy .....	1201	1204	4818
Elfy .....	1066	1066	4292
	135	138	526

Posy, the better cow, required slightly more food for maintenance than Elfy, which is contrary to our expectation. However, the difference is so small that the requirements may be considered practically equal. This test conforms to other experimental evidence that cows of equal weight need similar amounts of food to maintain the body.

C. Possibly the inferior cow uses some of its food above maintenance requirements for the production of body fat. This factor was eliminated by keeping each cow at an even weight throughout the milking period. Neither one gained more than 20 or 25 pounds in weight during the year, and thus little food was used for storage in the body by either cow.

D. The cause of variation in milk yield may lie in the difference in the amount of food consumed and used for producing milk in excess of the ration of maintenance.

The feed consumed by each cow during the year was as follows in pounds:

	Grain	Hay	Silage	Green feed (soiling)
Posy ....	3424	2904	8778	4325
Elfy ....	1907	1698	5088	2102

Considering all feeds, Posy ate 1 1/4 pounds to each one pound eaten by Elfy.

We may now consider how much feed each cow had available for production of milk after the maintenance requirement is deducted.

## Norwalk TIRES

### The Tread That's Ahead

Note the  
massive  
construction

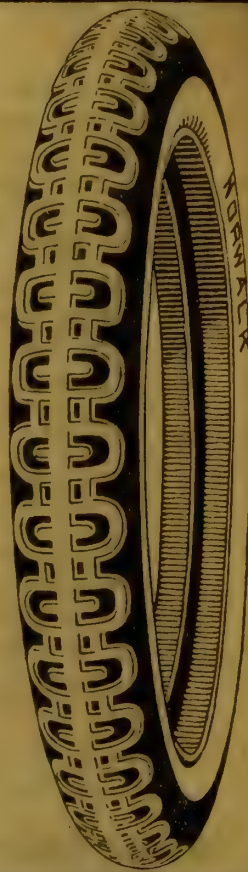
Note the  
symmetrical  
construction.

Purest Para  
rubber used.

Finest  
quality  
Sea-Island  
cotton  
fabric.

Designed by  
the World's  
foremost tire  
authorities,—  
MEN WHO  
KNOW.

Ask for  
Price List.



Lichtenberger-Ferguson Co.

Los Angeles, San Francisco, Fresno

## THE SELF-OILING WINDMILL

has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

Write AERMOTOR CO., 2500 Twelfth St., Chicago

For Sale by  
VAN-SHAW-PALMER CO.,  
421 E. Third St., Los Angeles.

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

Whittier State School  
WHITTIER, CALIFORNIA

## Large Type Poland Chinas



W. H. Browning  
Woodland, Yolo County, Calif.



	Posy		Green	
	Grain	Hay	Silage	Feed
Consumed.....	3424	2904	8778	4325
Maintenance..	1200	1204	4818	.....
Available for milk product'n	2224	1700	3960	4325
Elfy				
	Green		Green	
	Grain	Hay	Silage	Feed
Consumed.....	1907	1698	5088	2102
Maintenance..	1066	1066	4292	.....

Available for milk product'n 841 632 796 2102  
Considering all the feeds, Posy had 2 2-3 pounds available for milk production to one pound for Elfy.  
Calculated on the percentage basis the relative use of feed looks like this:

	Used for Maintenance	Available for Milk Product'n
Posy.....	35 Per Cent	65 Per Cent
Elfy.....	56 Per Cent	44 Per Cent

The milk and fat yield of the two cows:

	Per Cent	
	Lbs. Milk	Lbs. Fat
Posy.....	8523	470
Elfy.....	3189	169

Posy produced 2 2-3 pounds of milk to Elfy 1 pound.  
Posy produced 2 3/4 pounds of fat to Elfy 1 pound.  
Posy ate 1 1/2 times as much feed as Elfy. Posy had available for milk production, above maintenance, 2 2-3 times as much feed as Elfy, and she made 2 2-3 times as much milk as Elfy. After maintenance requirements were satisfied each cow produced milk at a similar feed cost, but where Elfy lost is in requiring so large a proportion of her total food for body maintenance.

The manner in which Posy is superior to Elfy indicates the quality of all superior cows, namely their capacity to handle a large amount of food above maintenance requirements and turn that extra food into milk.

Someone may ask, did Elfy have enough to eat during the investigation? It is common observation that the low producing cow may have a strong tendency to lay on body fat, and if Elfy was fed in such manner as to prevent that, did she have enough to eat, or would she have produced more milk if she had been given more feed? During the year's test it was thought that she received quite as much food as she required. She was never ravenous for food as was Posy, always looking for her rations, but was indifferent about eating. However, to satisfy the question Elfy was bred at the close of her maintenance trial and after calving was given the same ration as when on test with Posy, and the grain portion increased to as much as 14.8 pounds daily. At the same time she was given all the hay and silage she would eat, but when the grain was increased to the maximum she refused silage entirely. The results of this feeding for 70 days were as follows:

Feed and milk yield in ten day periods:

Ten day period after calving.....	Pounds of Grain.....	Pounds Alfalfa Hay.....	Pounds Corn Silage.....	Total Pounds Milk.....	Pounds of Milk for similar periods during test with Posy.....
2.....	59	78.5	150.0	185.6	139.6
3.....	84	103.4	72.5	190.7	147.3
4.....	93	91.0	108.5	193.8	156.4
5.....	112	87.0	74.3	203.4	150.2
6.....	130	79.4	75.3	192.5	137.5
7.....	145	108.7	59.8	189.0	135.2
8.....	148	111.0	.....	187.2	138.4

Elfy gave four to five pounds more milk daily in this fourth lactation period than she did in the third when she was on the trial with Posy. However, she produced no greater quantity on the very heavy feeding than on the lighter ration similar in quantity to that given in the trial with Posy, from which we may conclude that in that trial she had a fair chance to do her best. She gained 25 pounds in weight during these 70 days.

The kind of cows we want in our herds are those with the capacity like Posy's. The chief and the great factor

in securing them is inheritance through rigid selection. The original report of this investigation is given in Research Bulletin No. 2 of the Missouri College of Agriculture.

#### BALANCED RATIOS FOR BROOD SOWS

The following rations for brood sows are suggested by J. S. Coffey of the Ohio State University:

1. Corn one part, skim milk six parts.
2. Corn two parts, shorts three parts.
3. Corn one part, middlings two parts, oats one part. Add five per cent oil meal to this mixture.
4. Barley, oats and shorts in equal parts.
5. Barley and oats in equal parts; mix with three pounds of skimmed milk per pound of grain mixture.

6. Barley, peas and shorts. Ration 2:1:1.
7. Corn, oats and oil meal. Ration 5:2:1.
8. Corn and tannage. Ration 8:1.

As Ohio is a corn state the use of corn appears in many of the above rations, but California swine breeders may bear in mind that sorghum grains show by analysis practically same nutrients as corn.

## How to keep your Ford engine running like new

Every car has different lubricating problems. In the Ford the special problem arises from the exclusive and ingenious construction by which the disc clutch and transmission gears are enclosed with the engine.

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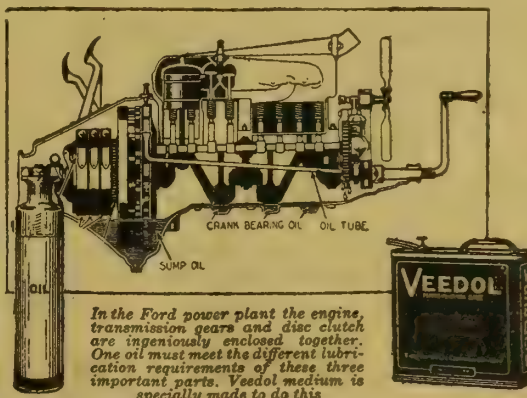
It is heavy enough for the engine and gears, yet light enough so that the clutch does not drag.

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## California Grazing Lands and the Live Stock Industry

Written for California Cultivator By A. L. Spellmeyer



CALIFORNIA is a rich state, and it's a large cattle producer, having more cattle than Arizona, Nevada and Utah altogether, and in addition to its beef type cattle it is a great dairy state, and will in the course of time be a great center for pure bred stock of all kinds.

At present probably half or more of the central and southern California area is devoted to live stock grazing, yet is there an experienced, practical live stock man, prominently active in any bank or financial institution, and is there any special interest in the livestock business on the part of any financial institution, other than the cattle loan companies operating on an eight per cent basis and mostly six months time? With the hundreds of millions invested in the California live stock business, it is on a haphazard uncertain basis, with no better methods of running cattle, securing increased production and with actually a lower general grade of cattle than 20 years ago. The borrowing power of a half million dollar ranch is somewhat less than that of a hundred thousand dollar city store.

At this time our nation needs increased meat production and the saving and increase of live stock is a vital necessity. California has been hard hit by drouth and loss, and it is a duty devolving upon banks and ranch owners to facilitate increased production and place this important industry upon a basis of permanence and safety. The beef demand of California is fair and will be better, and while top prices are never in accord with other top prices in Eastern markets, yet prices are never very low, for lower grade stock.

It cannot be denied that the lack of an extra price for finish, quality, and grade of cattle has operated towards lowering the general quality of stock, and for this the packers buying system in California is surely partly responsible.

With half of the grazing ranch owners leasing out their land on a year to year lease, subject to sale, and the other half operating on a temporary basis it's no wonder there is no considerable improvement in cattle or methods of grazing. The cattle business today requires an effort and knowledge to bring success that the lax methods and plentiful range of the past decade did not require. Until eight or ten years ago the cattle business of the entire country was a speculative uncertain business whose trend could not be foretold, but the scarcity of range, the growth of population and shortage of cattle have placed it upon a different basis, and the safest and most profitable business

ness the Middle West bankers have in the live stock loans.

California is as wonderful in possibility to the stock man as it is in other lines of production, and there is no good reason why properly managed 90 per cent calf crops could not be secured and forage crops saved as protection from periodic drouths. With better management ranges can be made to carry more cattle by relieving during the growing season. The Jornada experiment made by the United States forest service in New Mexico is very instructive, and accords with facts practical stock men have also ascertained.

Forage crops saved will prevent actual loss in bad years and increase meat fats in good years, but to cultivate and save forage, build fences, buy better bulls, etc. all takes money. Silage feeding and baby beef production will come to California, but it will take money to back these ventures. Those now doing this are making fair returns.

Personally I consider California, the greatest cow country in the West and, notwithstanding periodic drouths, offering unusual opportunities, which will be realized when the large acreage owners of land not at present good for anything but stock grazing realize facts, and either sell it at a possible living price for the stock industry or put their own cattle on and run it efficiently towards maximum returns for the stock business, and forget for awhile that land might have oil or a mine, or might raise almonds, or pecans, or tea in the future. There is no question that beef needs will greatly increase in the West and that this wonderful country will be closely populated in time, but that is all in the course of natural and expected development.

The value and importance of the live stock business is greater than the entire oil and citrus industries of the state together, and the hundreds of millions invested in cattle, sheep, hogs and horses is more than equaled by the hundreds of millions investment in the ranches they run on. The citrus and other agricultural pursuits depend upon the livestock business for their fertilizer and for the market for the hay, grain and green alfalfa. The people depend upon the live stock business for their food, their clothing and their shoes, and yet bankers in California don't consider or make any effort to supply cheap money to this industry, which is the basic industry of their state.

Acceptance of grazing land as grazing lands, by land owners, and cheap money from banks, will work great things and increased production and general prosperity for the great state of California.

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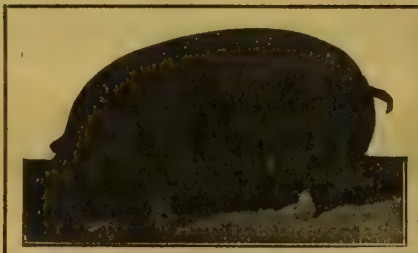
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## Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal. Unsigned communications receive no attention.

Hard Milker

Heifer that came fresh about two months ago gives rich milk but is very hard to milk. Can anything be done to relieve it?—Subscriber, Clovis.

The opening in the teats can be enlarged by cutting or stretching the sphincter muscles that surround the openings. In cutting great care must be exercised or one is liable to cut too much and do more harm than good. It may be better to stretch the openings by inserting an instrument that is made for that purpose. There are several different kinds that can be purchased from veterinary instrument makers. Some are of the shape of a small collar button. These are to

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be inserted after milking and left until the next milking. The instruments are of different sizes and by using the small ones first and changing to the larger ones you can soon get the desired results. The instruments should be thoroughly cleaned each time before inserting them to avoid introducing any dirt that would irritate the parts and cause inflammation. You could get along very well for a time by using milking tubes. Use two and empty two of the quarters at a time. Manipulate the udder and teats as when milking and it would flow freely through the tubes.

#### Palsy or St. Vitus Dance

My dog has strained his front leg. He shakes his foot as if he had the palsy. I have taken him to the veterinarian in this city and he says he has strained a nerve in his foot and must be kept quiet. He gave me medicine for the dog but it does not seem to help him. This is a young setter about a year and a half old and is quite valuable. — Subscriber, Marysville.

Your dog has probably had distemper and this is one of the bad results that often follow. The setters seem to suffer more from distemper than other breeds. Properly treated when it first comes on it is seldom followed by palsy but when the palsy is once well established it is hard to relieve. Try this prescription for him: Iodide of potash, 20 grains; strychnia, one-tenth of a grain; gin, one ounce; water enough to make four ounces. Give a teaspoon of the mixture once a day. Aspirin in five grain doses given when he first came down with the distemper would probably have prevented all this trouble.

#### Bog Spavin

I have a colt one year old, and a few days ago a soft swelling came on the hock joint. The colt is fat and in apparently good condition otherwise. Is it spavin? What shall I do for it?—Subscriber, Shafter.

It is probably bog spavin, a trouble that may be caused by a strain causing congestion of the cartilages and ligaments of the joint. To ease the trouble nature provides, a surplus of joint oil (synovia) which puffs out at the weakest point. Reduce the colt in flesh. That will have a tendency to relieve the congestion. Give internally this medicine: Iodide of potash, one ounce; tincture of aconite, one ounce; water to make one pint. Mix. Give one ounce of the mixture on the feed or in the drinking water once a day while it lasts. Also clip off the hair over the enlargement and apply an ointment made of tincture of iodine, one ounce; iodine crystals, half a dram; lard oil enough to make four ounces. Apply a little of the ointment once a day, rubbing it in well. Your colt being young will probably recover quickly with this treatment and in a short time be as good as ever.

#### Bad Results from Castration

I have a Percheron colt coming five years old that ever since he was castrated has had trouble in backing or turning or stepping over in the stall. When harnessing him it seems to hurt him in the hips or loins. When pulling he carries his head low, and when stopping to rest will weave around for a moment until he seems to get his balance. He keeps fat and is well otherwise. What can be the trouble and what can be done for him?—Subscriber, Victorville.

All the trouble you have noticed may be caused by one or both of the spermatic cords not drawing back far enough and having become attached to the side of the scrotum. When castrating colts the cords should be pulled out as far as possible without

snapping before being cut off, then they will draw well back and never give any such trouble as you are having. Better have him examined by a good veterinarian and if he can feel the ends of either cord have him operate on the colt and remove as much of the cord as he can. That will probably end the trouble.

Book Review

#### PRODUCTIVE DAIRYING

"Productive Dairying," by R. M. Washburn, professor dairy husbandry, University of Minnesota, published by J. B. Lippincott, Philadelphia, has 432 pages packed full of valuable information for every dairyman. The book is written for high schools, colleges, or general study course, but it is indexed, and its fund of information of practically every phase of dairy work is complete. While it is an educational work, there is a minimum of technical points touched upon. At the end of each chapter a series of questions help one to review and impress the preceding chapter.

There are 131 illustrations and valuable index and 40 chapters and appendix. The book is divided into seven parts, the first touching upon the Why of Dairying, with three chapters; the second on Dairy Breeds with 15 chapters; the third upon Care and Management of Dairy Cows, four chapters; fourth, Winter Feeding; fifth, Clean Milk Production, with an even ten chapters; sixth, Farm Dairying; seventh, Market Milk, Adulteration, Kinds and Classes, and finally Food Value of Milk, Government Standards, etc. A valuable feature of the appendix is a table on feeding stuffs composition.

One paragraph in the opening chapter is as follows: "The cow as a converter or transformer of coarse, rough feeds into fine grained and more valuable forms has no equal. Physically speaking, the sun is our great original source of warmth and energy. A small portion of the heat which is poured so lavishly upon the earth each summer is captured by the growing plants and stored, some as grain, a little as root crops, but much more in such forms as grass and fodder. Only about 40 per cent of the solar energy captured by our cultivated crops is in a form sufficiently fine to be used by man direct, for example, as corn and potatoes, while the remaining 60 per cent of the energy is in the stalk, leaf, cob and straw. If we add to this amount the meadow hay and permanent pastures, it seems highly probable that fully 75 per cent of the food energy captured in this country, each growing season, is in such form that it is practically useless as food to man until converted by some animal into the form of flesh, milk or eggs. Plants get their energy from the sun and their substance from the soil and air, while animals get both substance and energy from plants (or other animals). Man is no exception."

Milk substitutes are not equal to milk in feeding calves, but give fair results when used with care. Now that milk is in demand for human food they are particularly recommended.

When the calf is two weeks old, grain and bright clean hay should be offered; the quantity fed should be increased as the calf's appetite demands.

Cut out non-essentials; we are in a race with a swift antagonist and need no handicap.



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## Use of Lime and Gypsum

Discussing the fundamental principles of the use of lime and gypsum on California soils, Professor Chas. B. Lipman writes:

The term lime, as we may employ it in the agricultural sense, includes the following materials: Burnt lime (oxide of calcium), hydrated or water-slaked lime (hydrate of calcium),

ground limestone or air-slaked lime (carbonate of calcium). Even in the agricultural sense the term lime does not include gypsum. The latter is an entirely different substance from the three named above, as will be explained later. Speaking with the correctness of the chemist the term lime is applied only to burnt lime

(quicklime) or calcium oxide. Just how the three materials discussed agriculturally under the name lime are to be employed and where one is to be preferred to the other, if at all, are questions which are answered below.

Before going into a detailed description of the mission or the function of lime in soils it is well to state clearly the relative values for practice of

(1) the burnt, caustic, or quicklime; (2) the hydrated or water-slaked lime, and (3) the carbonate or air-slaked lime. These lime materials are largely valued for the amount of calcium oxide which they contain. Quicklime is nearly all calcium oxide. Hydrated lime or water-slaked lime contains less calcium oxide but may be looked upon in practice as nearly equivalent ton for ton to the quicklime. Air-slaked lime (like the ground limestone) or carbonate of lime contains only a little more than half the amount of calcium oxide that the quicklime does and therefore two tons of it should be employed if it is used in place of the caustic form. The relative money values can be determined at any time from the foregoing explanation of relationship between the different lime materials. It must also be remembered in that connection, however, that the cost of handling larger quantities and additional freight rates involved must always be taken into consideration in calculating the actual and relative cost of the different materials. The following is a consideration of the function of lime materials in soils:

Lime materials have the power of shrinking clay and making it more pervious to water and air, by making a large number of crumbs from large sticky masses. Therefore, lime makes clay and clay adobe soils looser, prevents their packing, baking and cracking, makes plowing and cultivating easier, and, in general, makes the soil, physically, a healthier medium for plant growth.

Lime materials (as above described) serve as a source of the element calcium to plants. Calcium is one of the ten essential chemical elements in plant growth.

Lime materials make "sour" soil "sweet." Speaking correctly, they change an acid soil condition to a slightly alkaline one. Acidity of soils is very detrimental to the growth of many agricultural crops. A slightly alkaline condition is ideal for them.

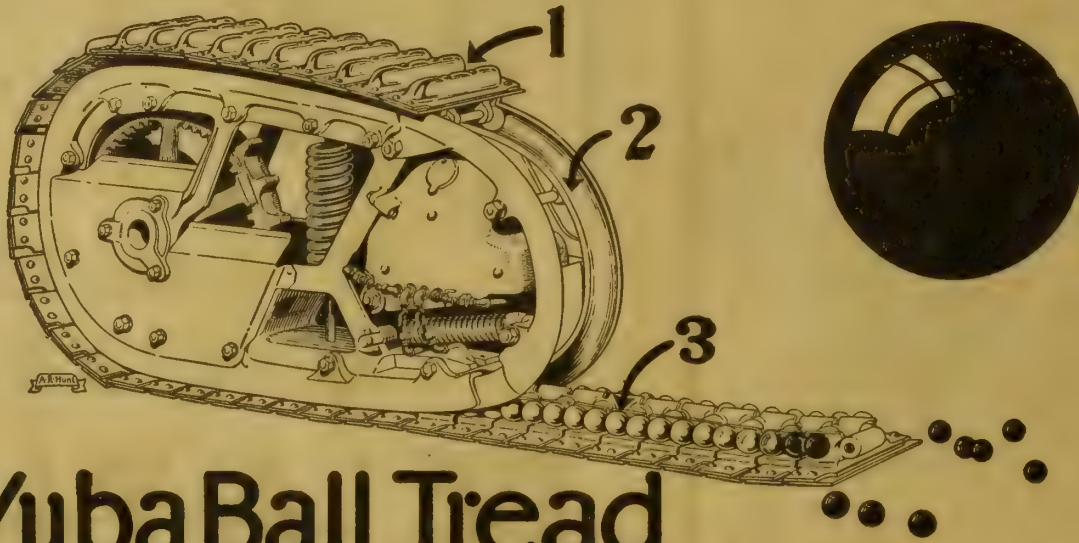
Lime materials are necessary for useful and beneficial bacteria and other microorganisms of the soil. It furnishes these the element calcium, which is an essential to them as to the higher plants. It promotes a slightly alkaline condition which is ideal for their development. By its physical effects lime produces good air and moisture conditions for bacteria as above described.

Lime materials promote the normal decay of soil organic matter through their effects on the agencies of decay above described. The normal decay of organic matter in soil prevents accumulation of poisonous materials in soils which are detrimental to plant growth.

Lime will not neutralize sodium carbonate or black alkali.

### Lime on Heavy Soils

No determination needs to be made to inform the owner of heavy land if lime is necessary to improve its texture as above described. The decision both as to the amount to apply and as to the feasibility of applying it must be made on the basis of the cost of lime and the degree of "running together" or baking and cracking, which is characteristic of the soil. From one to two tons of the burnt lime or of the hydrated lime, or from two to four tons of the ground limestone, may be safely applied to improve the working qualities of heavy soils. Application may be made by means of one of the several types of lime spreading machines or the lime may be deposited in piles and spread



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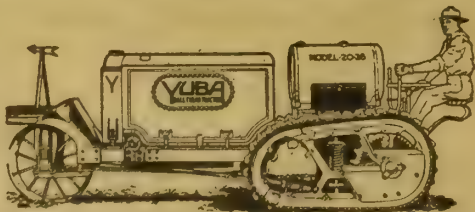
- [1] The Tread
- [2] The Solid Inner Base
- [3] The Polished Steel Balls

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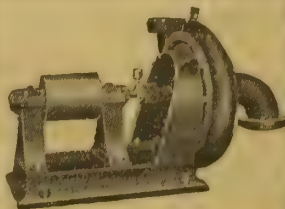


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with a shovel. It should be well plowed in and covered up at a time when there is sufficient moisture in the soil for the lime to act well.

The burnt lime or the hydrated lime is to be preferred to the carbonate of lime for making heavy soils lighter if the cost will allow. The first two forms act more vigorously and more quickly. Applications of lime are best made prior to fall or winter plowing or several months prior to planting. This must particularly be borne in mind if either burnt lime or hydrated lime are employed.

**Lime on "Sour" or Acid Soils**

If "sour" soils are also heavy clays or clay adobes, the recommendations for the use of lime above made for heavy soils are to be followed. If sour soils are loams, silts or sands, the ground limestone is to be preferred to the other forms of lime where it is obtainable.

To test your soil for sourness or acidity proceed as follows: Mix some of the surface soil to be tested and moisten thoroughly. Mold it into a ball of wet earth about three or four inches in diameter. Break the ball in two and on one of the broken surfaces place two strips of red litmus paper previously moistened with clean boiled water. (Litmus paper, both red and blue, may be obtained in the drug stores.) Set the broken surfaces of earth together again and press tightly. Perform the same test with another ball of earth, but use blue instead of red litmus paper. Allow the balls of earth to lie undisturbed for half an hour; then open, and if the red litmus paper has turned blue no lime is needed. If it remains red, and the blue litmus paper turns red, lime is needed and should be applied as above directed. If neither the red nor the blue litmus paper should change color during half an hour or more, then the reaction of the soil is neutral and small applications of ground limestone, not to exceed one ton per acre, will be sufficient.

**Nature and Function of Gypsum**

Gypsum is the sulfate of calcium and therefore is not the same as lime nor the same as any of the three forms of the latter above described. The only thing which gypsum has in common with the three lime materials named, from the point of view of chemical composition, is that it, like the others, contains the element calcium. Let us study its functions in soils.

Gypsum exerts a similar effect to that of lime on the clay and adobe soils (see above).

Gypsum, like lime, serves as a source of the element calcium (see above).

Gypsum, like lime, stimulates the beneficial soil organisms on the roots of leguminous plants like the peas, beans, vetches, alfalfas and clover.

Gypsum does not make "sour" soil "sweet." It will not change an acid into a slightly alkaline soil as do the lime materials. Gypsum is a neutral salt (possesses no alkalinity), and therefore will not be of assistance, or act as a corrective to a "sour" or acid soil.

Gypsum does not share with lime, to any appreciable extent, the good effects of the latter on soil organic matter (see above).

Gypsum will neutralize sodium carbonate or "black alkali."

England has gone on rations and each buyer, from the king to the humblest citizen, must present a card to secure his weekly allotment of one and one-quarter pound of meat and four ounces of butter or margarine.

**FIRE FIGHTERS MEET**

Farm Adviser Baade of Napa County writes:

"On Saturday afternoon, April 27, at one o'clock, there will be a meeting at the Napa County Courthouse, at Napa, of the 20 rural fire companies which have been organized in

this county by the farm adviser as per the request of the state and county councils of defense. Each company is composed of 12 men, and the 240 thus called in will be sworn in as firemen, their officers also taking the necessary oaths. They will at this time elect a county chief and a county assistant chief.

"There will be a program, pictures will be taken, and a parade is now being scheduled, which will show that our people are prepared to protect their property during this time of need."

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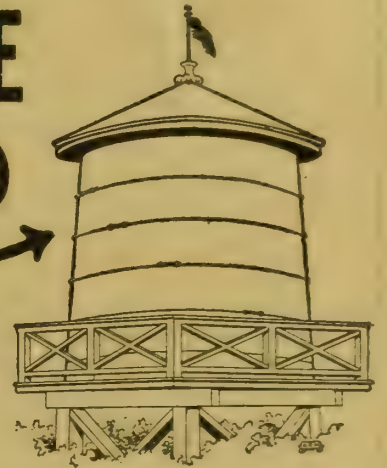
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## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Oily Butter

What is the trouble with my butter? I feed alfalfa meal, barley hay, and cow has salt and is now getting green feed every day. The calf is five days old and the cream skims thick but the butter will not harden and sticks to the paper. It is sweet and nice flavored but is soft. — Subscriber, Spring Valley.

This query is answered by S. L. Deming of the University of California:

"I believe the main source of difficulty is churning the cream too soon after the cow has freshened. It may also be churning at too high a temperature and the butter warms up considerably during the working. Would suggest not using cream from a cow in less than ten days after being fresh and then regulating churning temperature so that the churning may be completed in about 40 minutes. Under ordinary conditions this temperature should be about 58 degrees. The butter should then be washed in water which has about the same temperature as the buttermilk, then worked and salted in the usual manner. If the parchment paper is wet in a salt solution before wrapping the butter it will not stick to the butter to any extent."

### Abnormal Appetite

Have a cow that eats whenever she can get in reach of rags, sacks, ropes, straps, hair such as horses' tails or cows' tails, and she has even eaten all the hair off her own tail. I feed her tame oat hay, Lima bean straw, and she runs in the pasture in day time and gets plenty of green grass. Also keep a box of stock salt and fresh water which she can reach at any time.

Abnormal appetite is sometimes very perplexing, but as a rule it is caused by some deranged digestion or possibly by a ration which is not properly balanced. Cattle on low swampy land are especially predisposed to it, but it sometimes happens that one cow in a herd seems to be affected and the others perfectly healthy. The following treatment is recommended in "Disease of Cattle" issued by the Department of Agriculture:

"The aim must be to improve the process of digestion and to supply the animal with a sufficiency of sound and wholesome feed. The following should be given to the cow three times a day, a heaping tablespoon constituting a dose: Carbonate of iron, four ounces; finely ground bone or "bone flour," one pound; powdered gentian, four ounces; common salt, eight ounces; powdered fenugreek, four ounces; mix. In addition to this, three tablespoons of powdered charcoal may be mixed with the feed three times a day, and a piece of rock salt should be placed where the animal can lick it at will."

### Hens' Feet Swollen

What can I do for my chickens? The feet are swollen, red and sore. One hen's feet almost rotted off. I killed her. The head and eyes become affected. They eat heartily to the last. The one I spoke of became blind.—Subscriber, Puente.

I am not given very much to go by in this description. Does trouble begin in the feet or in the legs? What is the course of disease—swelling first, then inflammation and redness,

or vice-versa? Do the bottoms of the feet show any signs of injury, such as might be made by the prick of a tack or a bit of glass, or do they look as if they had been bruised? Trouble in the feet and legs is commonly of two kinds. It may come from rheumatism, which begins in the joints, usually in what answers to the knee joint in human beings, and spreads from there, or it may be what is called

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bumblefoot, which is the result of an injury to the foot. In bumblefoot the injury often produces an abscess in the soft part of the foot, which, if unopened, finally infects the leg. You will have to decide which of these causes is at the bottom of the swollen, inflamed condition of the legs and treat accordingly. If there are abscesses in the bottoms of the feet open them and cleanse the cavity thoroughly with peroxide of hydrogen, then put the hen in a clean place, and do not allow her to roost till the wound is healed. If the trouble is rheumatic there is little to be done except to change the surroundings, for rheumatism is almost always due to dampness in house or run and can be cured only by removing to a dry place. Give a dose of Epsom salts, 20 to 30 grains per bird, to clean out the intestines, and the following day add bicarbonate of soda to the drinking water, a teaspoon of soda to a quart of water. It is possible that this trouble is of an ulcerous character. If there are ulcers the case is much more serious, and affected birds should be killed and burned at once. I should like to hear more from the writer about the symptoms and the effect of treatment.—J. A. K.

#### Crown Gall on Peaches

Many of my peach trees are suffering from the so-called crown gall. The gall is prominent near the surface of the ground, and I notice that some of the roots are attacked. What is the cause, and does it spread among other trees? Is the disease in the ground or on the tree when bought at the nursery, and how should I combat it?—Subscriber, Chino.

This is an infectious disease, attacking many varieties of fruit trees, and its spores seem to exist in nearly all soil. The first step in its control is to plant trees entirely free from it, then use care in injury to roots. Where the galls are on the small roots of old trees, cut them off, and where around the crown of the tree, the gall should be chiseled away to clean healthy wood, which should be treated with Bordeaux paste. The subject has been treated very fully in Bulletin 235, which may be had by writing to the University of California, Berkeley.

#### Rough Bark of Quince

I have a quince tree about eight or nine years old. It has rough spots on the bark similar to black knot on cherry trees. Please advise me through the columns of the Cultivator what it is and what if any remedy to use for it and when and how to use.—Subscriber, Upland.

Presumably this condition is that which comes naturally from the growth of the quince. On this point Bailey's Cyclopedia says:

"The blossoms are produced on the current season's growth. A short growth starts from the terminal winter bud, and on the other end of this the flower and fruit are produced. There is no proper stem or peduncle to the fruit, but the quince sits close, or sessile, on a short, leafy branch. The wood growth is continued by an axillary bud of the previous season. This peculiar habit of growth gives the tree its crooked, bunched appearance."

#### Calves on Milk Substitute

Will 12 day old calves do well without milk? What substitute could I feed them? I have good green alfalfa fields for them. — Subscriber, Judson.

It is not easy to raise calves without at least skim milk, and with skim milk care must be used in the feeding of proper substitutes. Would re-

fer the inquirer to answer on page 232 of the Cultivator of February 23. In addition we may say that a little roughage and a little grain are valuable additions to the calves' ration. Here are a couple of mixtures recommended by Larson & Putney's "Dairy Cattle Feeding and Management."

Many grain mixtures have been proposed for dairy calves. The one which perhaps has been more frequently recommended than any other consists of: Three parts corn meal, three parts ground oats, one part linseed meal, one part wheat bran.

A ration which is recommended by the University of Wisconsin consists of: Five parts whole oats, three parts wheat bran, one part corn meal, one part oil meal.

We may also call attention to the valuable proprietary meals and calf feeds on the market, which some dairymen find satisfactory.

#### "Green Ladybugs"

Last year green ladybugs with black spots on their wings attacked my string beans, squash, melon vines, etc. Can you tell us some way to kill them?—Subscriber.

The ladybird, sometimes called

ladybug, is one of our most beneficial insects. They are gathered by the millions in the mountains east of Sacramento and distributed in aphid infested sections of the state where they earned vastly more than their board. There is no "green ladybug," at least the ordinary twelve-spotted cucumber beetle, which is often misnamed ladybug, does not belong to the family of beneficial insects, but is one of our worst pests. But let us keep him straight. "He" is not a ladybug, but a diabrotica, or twelve-spotted cucumber beetle, and any of the family should always be destroyed the instant he appears in the garden, for his family grows rapidly. Use a neutral form of lead arsenate spread over the plants, six to ten pounds of the arsenate to 100 gallons of water.

Never water a horse immediately after feeding grain. This washes the grain through the stomach before it is properly mixed with the stomach juices and is liable to cause colic. It is safer to water the horse before feeding grain.

If you have saved a slice a day, eat corn bread and save a loaf.

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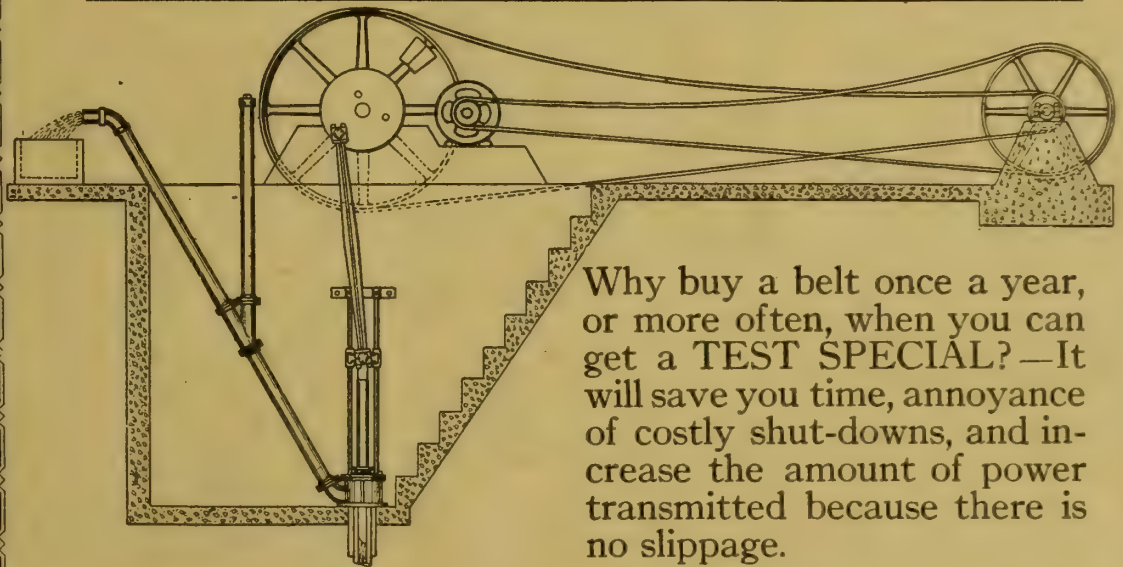
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**Valencia, Washington Navel, Eureka Lemons** and seedless Grapefruit, 2 years old. Healthy stocks. K. Niwa, P. O. Box 306, Glendora, California.

**Olive Trees.**—Mission, Manzanillo, Ascociano. Propagated by me from trees of known bearing qualities. Guaranteed. T. Schwabacher Hemet, Cal.

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**For Sale Cheap.**—Stallions, Jacks and Jennies. 1 registered Belgian Stallion; 1 registered Percheron, both weighing over a ton; 3 young Jacks; 6 young Jennies. Among them several exceptional fine animals weighing over 1150 pounds. Address Newport Estate, Perris, California.

**Sheep for Sale.**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

**For Sale or Exchange** for land near coast, large black registered Jacks and Jennies, good as can be found in California. Address A. L. Allen, Perris, California.

**Stallion for Sale.**—Imported French stallion Lapon, 7 years old. Chas. E. Bonoli, Petrolia, California.

**Registered Shires.**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

**For Sale.**—225 sheep with lambs. Nice bunch for a small place. Come and see them. John M. Cox, R. D. No. 1, Brawley.

**For Sale.**—Imported Hurlu No. 61953, thoroughbred Percheron Stallion. M. D. Clay, Placentia, California.

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**Go into Business For Yourself.**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

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**STOP THAT SLIP** Put "MASTER GRIP" Covering on those pump and motor pulleys.

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**For Sale.**—300,000 Single Comb White Leghorn chicks during April, May and June. Heaviest laying, Hoganized stock only. Broilers in ten weeks; pullets lay at five months. We guarantee safe arrival of all chicks to destination, you pay only for chicks received in good condition. Shipped safely anywhere West of the Rockies. Price \$10.00 per 100; \$95.00 per 1000. No money in advance; pay on delivery. Finest hatchery in the world. Established over twenty years. Must Hatch Incubator Co., 418 Seventh St., Petaluma, California.

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**Baby Chicks** (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

**White Wyandotte** eggs for hatching from fine breeding pens. Can't be excelled for winter layers. J. W. Nicholson, Wasco.

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**White Leghorn Baby Chicks.**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. Chicks ordered now for May delivery will be \$10.00 per 100. Lyon Hatchery, Gardena.

**Your Opportunity.**—Half price eggs sale. Big profit now raising our 200-290 egg Leghorns, Wyandottes, Anconas, Red Rocks, Minorcas, Orpingtons, Brannas, ducks, geese, turkeys. Thousands chicks, eggs weekly, reasonable. Laying pullets hens. Males half price. Many repeat orders. Hundreds customers making money. One cleared \$617 on 110 hens last year. James Beeson, Pasadena, Cal.

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**Baby Chicks.**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

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At present the oldest boars we have to offer are of September and October farrow. They are by Royal Superbus and Fashion Longfellow 27th. We also have a limited number of gilts to offer, bred for May farrow.

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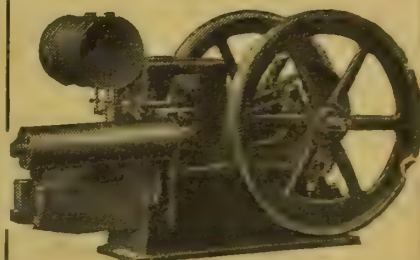
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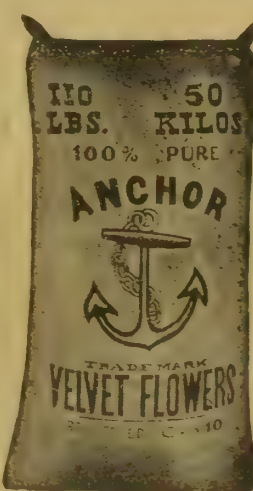
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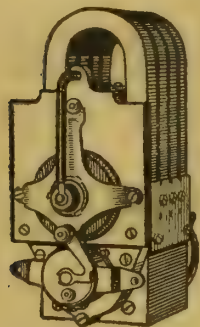
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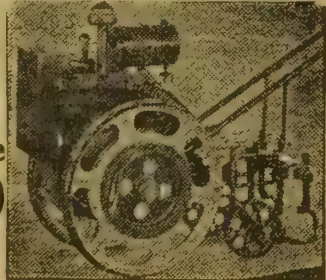
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A Sure Killer of Vermin —  
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You should get big crop by next fall. Others making \$1000 per acre, so can you with WAGNER'S GIANT — plant no other. Get your plants from originator and avoid disappointment. J. B. WAGNER, Rhubarb and Berry Specialist, PASADENA, CAL.



Keep your poultry free from lice. Look out for the setting hens now — put Instant Louse Killer in the nests before adding the litter and eggs, then the brood will come off free from vermin.

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Put it in the dust bath — that's always a good thing to do. Just as good for animals as for poultry. **DO THIS:** With one hand stroke the hair the wrong way, with the other sift in Instant Louse Killer. Especially good for lousy colts and calves right now.

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## Brooding Large Flocks

Written for California Cultivator by Jean A. Koethen



**B**ROODING hen hatched chicks is the simplest of all brooding. You give the hen a warm, comfortable coop, and she does the rest. This spring I have put each new brood as it came off in a corner of the feed house. A south window at the floor level gives the chicks a chance to play in the sun, and a partition a foot high keeps them where they belong. The floor is covered with clean dirt for each new brood. After a week in this protected spot they are kept in the open with little danger of chilling.

This, as I said, is the simplest kind of brooding. As the size of the flock increases the problem becomes more complex. When 50 or 100 chicks are to be raised in one flock one of the small indoor brooders is best. Such a brooder may be operated in a shed or feed house or if the weather is not rainy in a lath house. The small brooder stove makes easy brooding if one has a tight, sunny brooder house. I saw several of these little stoves in operation in one brooder house not over 16 feet long. The house was divided into compartments, each running back from the south front, which was all glass, and at the rear of each compartment was one of these little stoves. This gave each brood of 25 chicks its own heat, which could be regulated according to the age of the brood. The day I saw them the littlest, newest brood was cuddled about its warm stove, while the largest chicks found sufficient warmth in the sunshine which poured in at the window. Such a plan as this is excellent for the fancier, who must keep his chicks in small flocks and give each one a maximum of heat and care.

When it comes to brooding chicks by the thousands there are two camps. One holds that the saving of labor is the great thing, and that while there will be greater loss if a thousand chicks are brooded about one large distillate or gasoline stove, the work is done more cheaply and therefore more efficiently in the end. The other puts the life of the chick and its rapid growth and development above everything else, and continues to brood in small flocks in spite of the additional labor.

The plant of Scofield and Olsen at Van Nuys is one of the best equipped of the first class in Southern California. Here 1000 chicks are brooded about one big stove, and so carefully has every detail of comfort and ventilation been looked after that few chicks fail to reach broiler size.

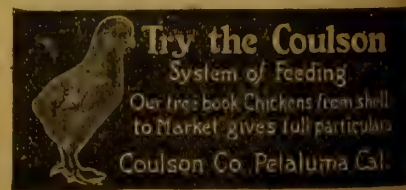
The brooder house is 24 feet square and is built of the best matched lumber. It is divided into two rooms, each 12 by 24, and these two rooms are again divided into two, each 12 by 12. The rear room is the brood room, and the one in front, which is mostly glass and wire on the south, is the play room. A small door connects the play room with the outside run. The house has therefore two brood rooms and two play rooms, and is intended to accommodate 2000 chicks, 1000 on each side.

The brood room is floored with cement, and the walls are lined with asbestos paper so that there can be no danger of fire. Corners, into which the chicks might crowd and pile up on one another, are eliminated by slanting the cement floor up for two or three inches where it meets the corner of the room. The two

small windows are near the ceiling and the air is kept pure by a ventilator in one corner connecting with a ventilating duct under the floor. The first day or so the chicks are kept close about the big stove by a fence of inch mesh wire, but this is soon removed, and the chicks are free to find a temperature which suits them, whether in the brooder room or farther from the stove in the big sunny play room. The floors of both rooms are covered with several inches of fine straw, which gives the chicks abundant opportunity for scratching as well as a soft bed to sleep on.

As this brooder house is not only a nursery for the chicks but must serve also as a home for the pullets till they are nearly grown, it is supplied with roosts as well as with brooding facilities. When the baby chicks are put in the brooder room, the roosts, which are 3/4 inch slats nailed 3/4 inch apart on a frame of light timber, are put up against the wall. After a few weeks, when the chicks near the roosting age, these frames are dropped. As one side of the frame is fastened permanently to the wall about three feet from the floor, when the other side touches the floor near the stove the whole frame rests in a slanting position on the straw, and the effect of the three frames rising from the floor to the wall on three sides of the stoves is not unlike that of an amphitheatre. This gives the chick which is ready or nearly ready to roost the choice of straw bed on the floor, low slat or high perch for the night, and soon every chick is roosting as high as possible. As they near broiler size the little cockerels are removed to the fattening coops and the pullets are left in possession.

An equally good example of brooding in small flocks may be seen on the poultry plant of C. R. Brown, president of the Arlington Poultry Association. Mr. Brown's brooder house is 40 feet long and about 20 feet wide. An alley runs through the center, separating the little chick runs, which are 2 1/2 feet wide and eight feet long, from those designed for the older chicks, which are five feet wide and eight feet long. As the hot water brooders are ranged along this central alley, nearly all necessary care may be given the chicks without entering the runs. A door from each indoor run opens into the outdoor run of the same size, so that the chicks have the choice of the well heated brooder, the cooler play room or the outdoor air. As they come from the incubators the chicks, 100 in a flock, are placed in the small runs along the east side of the house. As they outgrow these runs and the 100 chick brooders which hover them, they are moved to the wider runs on the west side, and are provided with larger brooders until they are able to do without heat. Mr. Brown believes that chicks can be better cared for in lots of 100 than in larger flocks. This house has accommodations for 3200 chicks. The day I was there, which was early in February, it contained





2600, the oldest 24 days old, and he expected to fill it again in March or April.

Mr. Brown's system of feeding is unusually simple. The nursery feed for the first day in the brooder consists of rolled oats. The second day a mixture of Indian corn and milo ground together is set before the chicks, in a hopper, and this, with a hopper of the purest beef scrap obtainable, is their fare until the cockerels are removed to the broiler

## Care of Sitting Hen

**T**HE kind of care and attention given a sitting hen during the process of hatching eggs plays an important part on the number and condition of the chicks when hatched. See that the hens are made comfortable on the nest; allow them to come off only once a day to receive feed and water. If there are any that do not desire to come off themselves, they should be taken off. Hens usually return to their nests before there is any danger of the eggs chilling, but if they do not go back in half an hour in ordinary weather, they should be put on the nest. Where a large number of sitters are kept in one room it is advisable to let them off in groups of from four to six at a time.

### Keep Eggs and Nests Clean

The eggs and nests should be examined and cleaned, removing all broken eggs and washing those that are soiled; in the latter case the soiled nesting material should be removed and clean straw added. Nests containing broken eggs that the hen is allowed to sit on soon become infested with mites and lice, which cause the hens to become uneasy and leave the nest, often causing the loss of valuable settings of eggs. In mite-infested nests, the hen, if fastened in, will often be found standing over rather than sitting on the eggs.

Many eggs that are laid in the late winter and early spring are infertile. For this reason it is advisable to set several hens at the same time. After the eggs have been under the hens from five to seven days, the time depending on the color and thickness of the shells—white shelled eggs being easier to test than those having brown shells—they should be tested, the infertile eggs and dead germs removed, and the fertile eggs put back under the hen. In this way it is often possible to put all the eggs that several hens originally started to sit on under fewer hens and reset the others. For example, 30 eggs are set under three hens at the same time, ten under each. At the end of seven days we find on testing the eggs from all the hens that ten are infertile, which leaves us 20 eggs to reset, which we do by putting them under two hens, and have the remaining hen sit over again after she has sat only seven days. In this way considerable time can be saved in one's hatching operations.

### Protect Sitting Hens from Mites and Lice

In order to secure greatest success and make the hens comfortable when they are sitting, great care should be taken to keep the nests free from mites. To do this effectively is not an easy task. If oil from crude petroleum, which is good for controlling mites, is sprayed freely about the house at that time it may soil the eggs and prevent successful hatching. Infested quarters, therefore, should be treated thoroughly before hens

coops and the pullets to their house. At the Scofield and Olsen ranch Co-operative chick mash and chick feed are placed before the chicks the first day and are kept before them till they have learned to eat. After this the chick feed is fed in litter three times a day and the mash kept before them till the middle of the afternoon, after which time they are expected to fill their crops with hard grain. All the greens the chicks will eat are given after the third day on both plants.

are set, so as to start them in nests which are absolutely clean. Beneath the straw of the nest a layer of lime and sulphur will tend to prevent mite breeding, and the entire nest may be dusted occasionally with pyrethrum. Broken eggs and the straw soiled by them should be removed promptly, as they tend to attract mites.

Medicated nest eggs, said to control poultry lice, are on the market. These consist largely of naphthalene. While this material will destroy lice when applied generally to the fowl, it is injurious to the hen's eggs as well as to the bird. If used in quantity, or if the medicated eggs are allowed to remain for some time beneath a hen, she may die as a result. Sodium fluorid powder, dusted on the fowl, or dissolved in water and used as a dip, is the best remedy for lice.

## Storrs Egg Laying Contest

Storrs, Conn., March 27, 1918. Report for the twenty-first week ending March 27:

The total production for the 1000 hens in the laying contest at Storrs amounted to 4339 eggs for the twenty-first week. This figure represents a production of 62 per cent, and while not quite as good as the production in the corresponding week last year, is still 44 eggs greater than the average for the last four years. First place for the week was won by Richard Allen's Rhode Island Reds from Pittsfield, Mass. with a production of 58 eggs, thus establishing a new high record for the present contest.

It is perhaps significant that there have been few pens of Leghorns among the leaders during the past few weeks. The combined data of the previous four contests show that the Rhode Island Reds have outlaid the other breeds during the months of February and March, while the Leghorns have been at the bottom of the list in average production. During April we may expect the Leghorns to rise quickly to first position and if they follow previous records, they will hold first place until the end of August.

The three best pens in each of the principal varieties are as follows:

### Barred Plymouth Rocks

Jules F. Francais, 720; Tom J. Adam-

son, 665; Rock Rose Farm, 657.

### White Wyandottes

Obed G. Knight, 793; Brayman Farm, 664; J. Frank Dubois, 652.

### Rhode Island Reds

Richard Allen, 736; Pinecrest Orchards, 640; Chas. H. Lane, 614.

### White Leghorns

J. O. LeFevre, 689; A. P. Robinson, 660; Braeside Poultry Farm, 653.

### Miscellaneous

Cook & Porter, (Buff Wyandottes) 706; Ore. Agricultural College (Ore-gons) 696; H. P. Cloyes, (Buff Wyandottes), 604.

### PRESERVE EGGS

Save eggs during April and May for winter use by preserving in water-glass.

Mix nine quarts of water, boiled and cooled, with one quart of waterglass. Will preserve 15 dozen eggs.

Place the solution in a five gallon jar. Store in cool place for winter use.

Eliminate the male bird at the end of the hatching season. Fifteen million dollars is lost each year by allowing the rooster to run with hens during the summer months. Product the infertile egg. Dispose of the male bird not later than June 1. Market a better quality of eggs.

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**THE CITY OF GOODRICH · AKRON, OHIO.**



## Los Angeles Market

Los Angeles, April 10, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery.....37  
Dairy Exchange price past week on extras.  
April 3 4 5 6 8 9  
'18 ... 43 40 38½ 38½ 37 37  
Rcts. five days ending April 8, 342,100 pounds.

## CHEESE

Brokers prices:  
California fresh, lb. ....26  
Eastern Daisies .....28½  
Domestic Swiss .....40

## EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extras .....36  
Pullet .....34  
Case Count .....35  
Dairy Exchange prices past week on fresh extras.  
April 3 4 5 6 8 9  
'18 ... 37 36 36 36 36 36  
Rcts. wk. ending April 9, 5059 cases.

## POULTRY

We quote to producers:  
Food administration orders hens sold for producing purposes only till April 30.  
Broilers .....30@35  
Fryers .....36  
Roasters, 3 lbs. and up .....34  
Ducks, lb. ....25@28  
Roasters, old .....14  
Turkeys .....29@33  
Geese, lb. ....23  
Rabbits, live, 17@18; dr. ....35

## LIVESTOCK

We quote cwt. r. o. b. L. A.  
Corrected Wednesday morning, April 10, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs., 10.50@11.00  
Heifers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....4.00@5.00

Hogs—  
Av. 125 lbs. ....14.75  
Av. 150 lbs. ....15.75  
Av. 175-225 lbs. ....16.75  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers .....12.00  
Ewes .....10.00  
Lambs .....13.50@14.00  
Yearlings .....10.50@11.00

## POTATOES

Wholesale selling price:  
Oregon Early Rose .....2.25  
Northern Burbank, cwt. ....1.30@1.35  
Idaho Russets .....1.15@1.20  
Locals .....1.20@1.25  
New, lb. ....7½  
Sweets, lb. ....4¾@5

## ONIONS

Wholesale selling price, cwt.:  
Brown .....1.10  
White .....3.00  
Garlic .....6

## VEGETABLES

Wholesale prices:  
Artichokes, doz. ....75@1.00  
Jerusalem, lb. ....7½  
Asparagus .....12@14  
Beets, sk. ....2.00  
Cabbage, lb., 3@3½, sk. ....1.75  
Red, lb. ....5  
Carrots, doz. ....30  
Cauliflower, doz. ....1.25  
Celery, doz. ....70  
Cucumbers—Hothouse, doz. ....75@2.50  
Egg Plant, lb. ....25  
Horseradish, lb. ....15  
Lettuce, doz. ....30  
Leeks .....30  
Mint, doz. ....40  
Onions, green, doz. ....25  
Peas, Tel., lb. ....9@10  
Peppers, Chili, lb. ....30

Parsnips, doz. ....30  
Parsley, doz. ....20  
Radish, doz. ....20  
Rhubarb .....1.25@1.50  
Strawberry .....1.75  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Crockneck .....70@75  
Hubbard, lb. ....3½  
Summer, cr. ....1.85  
Tomatoes, lug .....2.25  
Turnips, doz. ....30  
Watercress, doz. ....35@40

## FRUITS

Wholesale prices:  
Apples—Bellflowers .....1.75  
King David .....2.00@2.25  
W. W. Pearmain .....1.65@2.25  
Spitzenberg .....2.50@3.00  
Y. Newton .....1.60@2.25  
Bananas, lb. ....5½@6  
Loquats, lb. ....10  
Pears, Winter Nellis, lug .....2.25

## CITRUS

Lemons, packed, 5.50@5.75; loose....4.50  
Juice .....3.50  
Oranges—Navels, bx. ....3.75@6.00  
Valencias .....6.25  
Grapefruit .....3.00  
Limes, basket .....75  
Tangerines, lug .....2.00

## DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, ½c less.  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 16½; extra ch., 17½; fy., 18½; pears, 12; peaches, ch., 11; ex. ch., 12; fy., 12½; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 15½; 40-50s, 14½; 50-60s, 13½; 60-70s, 12 7-8; 70-80s, 11½.  
Figs—Calimyrnas, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

## NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....25  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

## RICE

See San Francisco rice market.

## BEANS

These are prices made by wholesaler to retailer.  
Lady Washington .....14.50  
Limas .....14.50  
Pinks .....9.25  
Manchurian Reds .....9.25  
Baby Mex. ....9.00  
Garbanzos .....10.00  
Small Whites .....14.50  
Blackeyes .....10.00  
Tepary .....10.00@11.00  
Lentils .....25.00

## HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oat .....28.00@30.00  
Volunteer Oat .....16.00@18.00  
Wheat .....25.00@28.00  
Barley .....26.00@29.00  
Alfalfa .....23.00@25.00

The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

## GRAIN AND FEEDSTUFFS

The grain market is yet entirely unsettled with no quotations whatever being made other than at moment of sale. It is thought another week will see definite quotations.

## San Francisco Markets

San Francisco, April 9, 1918.

## BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:  
Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....39  
Prices on butter are practically 15 cents above year ago this date.  
Prices Extras past week and year ago:  
April 2 3 4 5 6 8  
'18 ... 42 41½ 41 39½ 39½ 39  
'17 ... 40 38½ 39½ 40 40 ..  
Rcts. wk. ending April 8, 707,700 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal. Flats, 26; Y. Am. ....26½  
Jack cheese, full cream .....26@27  
Half skim .....14@17

## EGGS

Extras .....38  
Firsts .....36½  
Selected Pullets .....36  
Firsts .....35½  
Prices Extra past wk. and yr ago:  
April 2 3 4 5 6 8  
'18 ... 38½ 38½ 38 37½ 37 38  
'17 ... 29 29 29 29½ 30 ..  
Rcts. wk. ending April 8, 22,337 cases.

## POULTRY

We quote from producers, lb.:  
The food administration forbids sale of hens for meat until after April 30.  
Roosters .....26@40

Broilers—¾ to 1¼ lbs., 35@38; 1¼ to 2 lbs., 40@45; 2½ to 3 lbs., 40@45.  
Squabs, doz. ....3.50@5.00  
Ducks .....25@30  
Belgian Hares, live, lb. ....20@21  
Turkeys, dr., 35@37; live .....30@32

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ¼ to ½c more.  
Steers, lb., 10½@12; thin, 7@10; cows and heifers, 8@10; thin, 6½@7½; calves, 8@11.

Sheep—Lb. gross weight: Fat, unshorn wethers, 14½@15; ewes, 12@12½; lambs, yearlings, 16@16½; shorn sheep, 1¼@2 less.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 15½; 140 to 300 lbs., 15½; 300 to 400 lbs., 16½.

## POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks .....1.00@1.40  
River .....75@1.25  
Yakima Gems .....90@1.30  
Sweets .....5.00@7.00  
New, lb. ....6@7  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.50@1.75; high top, 1.50@1.75; Garnet Chile, 2.75@3.00; White Rose, 2.00@2.25; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

## ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....80@1.00  
Bermudas .....2.00@3.00  
Garlic, lb. ....3@3½

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A high grade 12-25, two-speed, three-plow, one-man tractor. Has Hyatt Roller Bearings throughout; enclosed motor; dust-proof gears, bearings and wheels; automatic oiling system; easy accessibility of working parts. Start Right—Start Early.

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- P & O** Heavy Duty Engine Disc Plows
- P & O** Flexible Frame Double Disc Harrows, Imperial Rigid Frame Double Disc Harrows, Western Pulverizers

**Baker, Hamilton & Pacific Company**  
San Francisco, Cal.

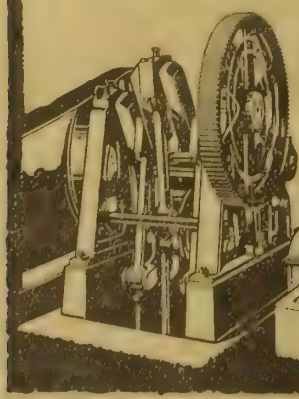
## UNIFLOW PUMPS

Will Increase Your Profits

HEED YOUR COUNTRY'S CALL for LARGER and BETTER CROPS. Insure your crop against drought. Have plenty of irrigating water independent of the rains. Don't delay—write or call now for information on the WILSON UNIFLOW DEEP WELL PUMPS. Submit your pumping problems to us.

**Smith-Booth-Usher Co.**  
The Pump and Engine House of the Pacific Coast  
Los Angeles

DEALERS:  
Write for Unoccupied Territory.





VEGETABLES

Wholesale selling price.

Artichokes, doz.	20@40
Asparagus, lb.	4@10
Beets, sk.	1.25@1.50
Carrots, sk.	.85@1.00
Cauliflower, doz.	30@50
Celery, Delta, cr.	1.25@1.75
Cucumbers, bx.	2.00@2.75
Egg Plant, lb.	12½@17½
Lettuce, cr., Southern, iced	1.25@1.50
Onions, green, bx.	.60@1.00
Onions, green, lb.	.65@.75
Parasips, sk.	.85@1.00
Peas, lb.	5@9
Peppers, Bell, lb., 25@30; Chile	12½@15
Pumpkins, sk.	.85@1.00
Rhubarb, bx.	.50@.75
Squash, Cream, lug	.75@1.00
Summer, cr.	1.75@2.00
Tomatoes	1.50@3.00
Turnips, sk.	.75

FRESH FRUITS

Apples — Spitzenburg, 2.00@2.50; Red	1.25@1.50; Newton Pippins, 1.35@1.65.
Pears — Winter Nellis bx., 2.00@2.25;	winter pears, lug, 1.50@1.75.
Bananas, Hawaiian, .....	Nominal
Loquats, lb. ....	12½@15
Pineapple, doz. ....	5.50@6.00
Strawberries, cr. ....	1.50@2.00
Citrus Fruits—Lemons, bx., according	to size, fy. 3.00@6.00; lemonettes, 2.00@
3.50; grapefruit, fy., 2.50@3.25; ch., 2.00	@2.50. Oranges—Bx., navel, fy., 4.50@
7.50; ch., 4.00@6.00; mandarins and tang-	erines, per half orange box, 2.25@3.00;
cr., 1.50@1.75; seedless oranges, accord-	ing to size, 2.50@4.50; Valencias, from
100s to 228s, 4.00@6.00.	

DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.

Peaches—Unpeeled, bulk basis, standard, 10; ch. 10½; extra ch., 11; fy., 11½.

Apricots—Bulk basis: Standard, 13½; ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorpark, 17½; extra fy., 18½.

Prunes—70s to 90s, 7; 60s, 7½; 50s, 8; 40s, 8½; 30s, 9½.

Apples—In 50-lb. bxs., lb.: Fy., 10; extra ch., 15; ch., 15.

Pears — Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.

Raisins—Cr.: Sun Maid, seeded, 10-oz. cartons, 4.20 for 48s and 6.15 for 36s; fy., 4.20 for 48s and 3.15 for 36s; do, 12-oz., 45 to cs., 5.25; ch., 10-oz. cartons, 3.00 for 36s; do, 12-oz. cartons, 45 to cs., 3.10. In bulk: Sundried, 1.75; fy., 1.90; ch., 1.75.

Sulphur-bleached Thompsons, ex. fy., 5.37½; fy., 5.12½; ch., 4.87½; soda-bleached, 4.75.

Loose: One-crown, 4.15; two-crown, 3.40; three-crown, nominal; four-crown, 3.20.

NUTS

Almonds—Cal. Almond Growers' Exch.	Gross prices: Nonpareils, 21½; I. X. L., 19½; Ne Plus, 18½; Drakes, 16; hard shell, 11½.
Chestnuts, Cal. lb. ....	10@20
Peanuts, Va. ....	16
Pecans, lb. ....	19@20
Pine Nuts ....	22@25

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

BEANS

Jobbers' prices, cwt., recleaned:	
Limas .....	13.90@14.10
Bayous .....	9.25@9.50
Small Whites .....	Nominal
Large Whites .....	Nominal
Mexican Reds .....	9.40@9.60
Blackeyes .....	8.90@9.00
Pinks .....	8.20@8.35
Red Kidney .....	Nominal
Cranberry .....	Nominal
Teparies .....	10.50@11.00

RICE

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

HAY

Under date of April 6, Scott, Magner & Miller says:

Receipts, past week, 1150 tons. As there is now plenty of grass all over the country for stock feed the feeding of baled hay in the country districts has practically ceased and with few exceptions, which are mostly orchard districts, there is no call for hay at the present time.

Reports just received from some of the early hay districts are that they will be cutting first crop alfalfa within two weeks. The government seems to be well stocked in all cantonments and in all probability will not require much hay before new crop is available.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the market. For prices to consumers charges of cartage, commission and handling must be added according to conditions.

Fancy Wheat Hay	
(light five wire bale) ....	27.00@28.00
No. 1 Wheat or	
Wheat and Oat Hay .....	24.00@26.00
No. 2 Wheat or	
Wheat and Oat Hay .....	21.00@24.00
Choice Tame Oat Hay .....	24.00@26.00
Other Tame Oat Hay .....	21.00@23.00
Wild Oat Hay .....	20.00@22.00
Barley Hay .....	20.00@23.00
Alfalfa .....	19.00@21.00
Stock Hay .....	15.00@17.00
No. 1 Barley Straw .....	50@80

As to grain and feed prices see note under Los Angeles grain prices.

SEEDS

Prices in round lots, lb.:	
Millet, recleaned .....	5@5½
Alfalfa, lb. ....	20@21
Flax .....	7@7½

Hemp .....	5@5½
Rape .....	2½@3

Citrus Fruit Market

Los Angeles, April 10, 1918.

Both oranges and lemons are commanding exceptionally long prices. Some soft stock has been put on the auction, which accounts for the few disastrous prices. All good fruit is cleaned up as soon as offered.

Shipments

Cars of citrus fruit from California since November 1, 1917: Southern California, oranges, 6880; lemons, 1792; total, 8672. To same date last season: Oranges, 17,520; lemons, 2983; total, 20,503. From Central California: Oranges, 2164; lemons, 113; total, 2277. To same date last year: Oranges, 4055; lemons, 164; total, 4219. From Northern California: Oranges, 203; last year same date, 344.

AT THE AUCTIONS

April 3  
New York: 12 oranges, 4 lem. Market lower. Nav. 1.65-7.00. Seed. 4.40-5.95, Bloods, 5.10-6.05, lem. 3.15-4.10.  
St. Louis: 6 cars. Nav. 4.45-6.35, Seed. 4.30-5.35, Sweets, 4.00-4.60, lem. 5.00-6.25.  
Boston: 9 cars. Nav. 2.90-6.65, Seed. 4.50-5.30, St. Mikes, 4.45-5.85, lem. 3.20-5.20.

Cleveland: 4 oranges, 1 lem. Nav. 4.75-5.25, Seed. 7.10, lem. 4.70-6.35.

April 4  
New York: 16 oranges, 3 lem. Nav. 3.25-6.35, Seed. 4.10-5.40, Sweets, 4.45-5.85, Val. 2.00-4.60, lem. 3.65-4.45, tangerines, 2.65-5.95.

Boston: 9 cars. Nav. 2.50-5.05, Seed. 4.60-5.75, lem. 3.55-4.55.

April 5  
New York: 9 cars. Nav. 2.50-6.85; Seed. 4.55-5.40, Sweets, 4.45-5.20, Mandarins, halves, 2.75.

St. Louis: 5 cars. Nav. 4.50-6.45, Seed. 4.45-5.40, St. Mikes, 3.65-6.40, lem. 4.40-6.35.

Cleveland: 4 oranges, 1 lem. Nav. 4.30-6.40, St. Mikes, 5.65-5.75, Sweets, 6.20-6.85, lem. 5.35-6.35.

April 8  
New York: 23 oranges, 2 lem. Nav. 2.95-7.30, Seed. 4.85-5.80, Val. 4.60-5.75, Sweets, 4.35-6.55, lem. 4.15-4.70, Tangerines, halves, 2.60-4.10.

Pittsburg: 10 cars. Nav. 4.90-6.70, Val. 5.60-6.50, Sweets, 2.40-6.15, lem. 3.00-5.65.

Boston: 16 cars. Nav. 2.10-6.50, Seed. 3.75-5.10, Sweets, 2.85-6.20, lem. 3.65-4.50.

St. Louis: 6 cars. Nav. 4.65-5.30, Val. 4.90-5.80, lem. 4.75-6.20.

April 9  
New York: 16 cars. Nav. 2.95-6.45, Seed. 3.20-5.85, Val. 5.50-6.50, lem. 5.00, Tangerine, halves, 2.65-3.35.

Boston: 8 oranges, 2 lem. Nav. 2.10-6.20, Seed. 4.35-5.00, lem. 1.55-4.20.

MARKET NOTES

The crop reporting board estimates the amount of corn on farms of the United States, March 1 as 1,292,905,000 bushels. This is about 40 per cent of the entire 1917 crop. The amount on hand the preceding year same date was 782,000,000 bushels.

The amount of wheat on farms on March 1 was 111,000,000 bushels, which was about 17 per cent of the 1917 crop. The year preceding there were an even 100,000,000 bushels, which was only 15 per cent of the 1916 crop.

The inspection division of the bureau of markets has opened headquarters in the city of Los Angeles.

New York market is being glutted with eggs and prices have begun to break. The trouble has been caused by ruling of the food administration which some of the markets have maintained could not be enforced.

Estimated weights of orange boxes in shipping have been raised from 72 to 73 pounds and of lemons from 84 to 90. This will result in an increased weight per car of 2772 pounds.

PARTIAL LIST OF CALIFORNIA SHIPMENTS

From post card reports to the bureau of markets, United States department of agriculture, Miss Hoey makes report of the following shipment of cars of products from California for the week, April 1 to 8: Apples, 4; artichokes, 35; asparagus, 56; cabbage, 62; cauliflower, 37; celery, 23; fresh peas, 5; dried apples, 3; dried apricots, 3; dried beans, 10; dried peaches, 11; dried pears, 1; dried prunes, 33; lettuce, 38; mixed vegetables, 85; mixed fruit, 5; onions, 10; potatoes, 32; raisins, 23; rhubarb, 25; dried peas, 2; turnips, 1; Mexican tomatoes into the state, 22.

RED CROSS CALVES AND SEPARATORS

One of the interesting new features of the University Farm Picnic on April 20, will be an auction sale of two pure bred dairy bull calves and of two farm cream separators, the proceeds of which will be turned over to the Red Cross Society. The Jersey bull calf was donated for this purpose by C. G. McFarland of Tulare; the Ayrshire calf by E. B. McFarland of San Mateo, and the two hand separators by the Empire Cream Separator Company and the International Harvester Company of America, of Bloomfield, New Jersey, and San Francisco, respectively.

Bought your Liberty Bond?

TEAGUE QUALITY  
CITRUS  
TREES

AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

The R. M. Teague  
Citrus Nurseries

Box 67, SAN DIMAS  
CALIFORNIA

FOUNDED IN 1889  
AT IT 29 YEARS



The Old Homestead



or bee gum was the original method of housing bees, honey collected in these crude homes was impossible to remove without sulphuring, which destroyed the colony of bees.

The Modern  
Bungalow

was built to comfortably accommodate these industrious workers and enable the bee man to remove the honey without discomfort to the bees. The

Miller Hives

are models of convenience and built of Redwood or Cedar with fragrant white pine frames.

Cedar hives prevent moth infesting the bees, as Cedar chests prevent moth in clothes.

Send for Free Catalog. Everything in Bee Supplies



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Miller Box Manufacturing Co.

ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

BRENTWOOD IRRIGATED FARMS, In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address

BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.



## They Win on the Roads You Drive on



**AJAX**  
Shoulders  
of  
Strength

## AJAX TIRES

### Dirt Track Champion of America

These same winning Ajax Tires, successful on dirt tracks at high speed, will be equally successful for you on your roads at your speed.

Dirt tracks are the same road-bed as the country roads surrounding them. Success on dirt tracks means service on country roads.

AJAX TIRES on proved performance, are the money-saving, mileage-giving tires for the farmer.

### SHOULDERS of STRENGTH

The picture shows these supports built into Ajax Tires on both sides of the tread, giving them more tread on the road—more rubber where it should be. They give longer life to Ajax Tires because road friction is thus distributed evenly over the tread. On Ajax Tires there can be no centering of friction in one spot to wear through to the fabric.

### AJAX ROAD KING

"More Tread on the Road"

Ajax Road King proves its superiority in competition with other tires, ON THE ROAD. Built for city streets or farm highways. Ajax Road King has "more tread on the road" than other tires. Note its triangle barb tread—an added safety factor.

#### 97% Owners' Choice

is a practical endorsement of Ajax quality unequalled by any other large tire manufacturer. This huge percentage of Ajax output is the choice of car owners to replace other tires that came on their cars. All Ajax Tires—and Ajax Inner Tubes—give real service. Write for booklet on Ajax Shoulders of Strength.

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## AJAX TIRES

GUARANTEED IN WRITING 5000 MILES

## Your Ford Touring Car

IS A

### Combination

## Touring Car and Truck

WITH A

# Heath-Duplex

\$54.50 DELIVERED

(Manufactured by the McCord Mfg. Co., Detroit.)

The Heath-Duplex gives two uses for one car. It is a collapsible commercial body, permanently attached to a Ford Touring car of any model. It gives a solid oak Truck body, 34-in.x52-in. and of a capacity up to the strength of the Ford springs. When used as a touring car the truck is concealed under the rear seat and your car has no exterior evidence of change or interior touring inconvenience. It is manufactured complete, ready to go on your car. It strengthens the Ford. The change from touring car to truck or truck to touring car is made

### Without Tools—in One Minute

Send for Folder

See Demonstration at the Davis Tractor Show, April 17th-20th  
AGENCIES BEING ESTABLISHED. IF YOU DO NOT KNOW YOUR LOCAL  
AGENT DROP US A LINE.

**Pacific Heath-Duplex Company**  
Granger Bldg. San Diego

## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

### Who Pays Taxes?

In making a deed to real estate after March 1, who is to assume the taxes, the owner or the purchaser?—Subscriber, Orland.

It is entirely a matter of agreement, just as the assumption of any other encumbrance. If there is a grant deed with no mention of the taxes the purchaser would be entitled to recover the amount paid against the grantor as the taxes become a lien upon the property at noon on the first Monday in March of each year. Frequently the deed mentions the taxes and the purchaser pays them when due.

### Dog Killed

My dog following me on the public road, bites a man without provocation. He kills the dog. What are the rights of the parties?—Subscriber, Claremont.

Unless the owner of the dog knows that he is vicious and it can be proven that he has knowledge of that fact, there is no liability. The old saying is, "A dog is entitled to one bite." A person may justifiably injure or kill a dog in self defense, but the danger of being bitten must be imminent. It has been held both ways that a man is and that a man is not justified in killing a dog which has bitten him. I doubt that any court would in such instance award damages for the value of the dog.

### Damage for Killing Dog

A man catches my dog killing a chicken in his yard. Have I any redress if he kills my dog? Could he get damages for his dead chicken?—Subscriber.

The general rule is that a person is justified in killing a dog in defense of the property of the person and then only if the property endangered was worth enough to justify the killing and the killing was the only means of saving the property. He had no right to kill the dog after the dog killed the chicken; that was simply revenge. The chicken owner could recover the value of his chicken and you should recover the value of your dog.

### Wife's Share in Property

Real estate stands in the name of husband and wife, to the purchase of which the wife has contributed from individual gifts to her. Could either the husband or wife sell this property without the consent and signature to deed by the other?—Subscriber, Santa Rosa.

In the case stated, the property is not only community property, but each of the parties holds an undivided interest in the whole of the property as they are what is technically termed "tenants in common." Neither could without the signature of the other convey clear title to the land. Each has the right to occupy the whole of the land. The husband's interest would always be subject to proof of the wife's separate interest.

### Voting by Proxy

What is status of a proxy in a corporation, say such as a cooperative marketing or purchasing association not conducted for profit, or fraternal or church organization? May proxies be given by members? May there be a provision inserted in the by-laws which will prevent the use of proxies by members? Also may proxies be given by trustees or directors to be

used in meetings of the directors?—Subscriber, Los Angeles.

The rules with respect to all non-profit organizations such as those above named are quite different from the usual profit corporation. The law of this state with respect thereto is exceedingly vague. The general provision is that such corporation may prescribe in its by-laws the persons who may act as proxies for members and the length of time for which such proxies may be executed. Under the heading of religious organizations the provision reads that the manner of voting may be in any manner provided by the by-laws and that the rules and discipline of the church shall be considered a part of the by-laws. Under cooperative business organizations a provision is made that the by-laws may provide for forwarding the ballots of the members by mail or otherwise and that such by-laws may provide for the mode and manner of conducting elections. Under cooperative agricultural associations the by-laws may determine the whole question of voting by proxies. And generally under non-profit cooperative corporations the by-laws may determine whether the voting power of each member shall be equal or unequal and may fix and determine rules applicable to the voting power, property rights and interests of the members. On the other hand the trustees or directors of a corporation are the delegates or agents of the respective stockholders or members, and the general rule applicable to all agents chosen for their personal qualities is that they cannot delegate their power to others.

### Transfer of Stock

A year ago I sold my stock in a California corporation, filled out the transfer on the certificate and delivered it to the purchaser and received my money. The purchaser has never transferred this stock on the books of the corporation. Am I still a stockholder? As the corporation is bad off would there be a liability in case of failure?—Subscriber, Inglewood.

The transfer is not valid, except as to the parties thereto until the same is entered upon the books of the corporation so as to show the name of the parties by whom and to whom transferred, the number of the certificate, the number or designation of the shares, and the date of transfer. Thus as to any creditor you are liable for your proportion of the debts incurred while your name shows as a stockholder.

### Contract for Sale of House

X is owner and vendor of bungalow which he sells to A on installment contract. If the bungalow burns is the contract extinguished or must X replace the bungalow for A? Insurance is carried as the interests of the vendor and vendee may appear at the time of fire. Could the insurance be divided equitably and the contract extinguished or could A require the seller to rebuild if A had not much equity if X would pay the equity?—Subscriber.

For the purposes of the above question the practical status of the vendor and vendee is that of mortgagor and mortgagee and X has no concern with what happens to the property other than that his security may be impaired, and the personal responsibility of A for the balance due over the value of the lot may be negligible. Therefore, unless the contract otherwise provided, X could enforce the personal obligation of A in the contract first against the remaining lot and then any other property of A, nor would he be required to rebuild. X could also require the balance due him to be paid out of the insurance collected; the exact form in which he would go about collecting the insurance would depend upon the form of the policy. Of course X and A could make any contract with respect to the matter which would be agreeable to both, but that would be a new contract and not dependent upon or arising from the direct provision of the old.



# Household Department

## THE SERVICE FLAG

Dear little flag in the window there,  
Hung with a tear and a woman's  
prayer;  
Child of Old Glory, born with a star—  
Oh, what a wonderful flag you are!

Blue is your star in its field of white,  
Dipped in the red that was born of  
fight;  
Born of the blood that our forbears  
shed  
To raise your mother, the Flag, o'er-  
head.

And now you've come, in this frenzied  
day,  
To speak from a window—to speak and  
say:

"I am the voice of a soldier son  
Gone to be gone till the victory's won.

"I am the flag of the service, sir;  
The flag of his mother—I speak for her  
Who stands by my window and waits  
and fears,  
But hides from the others her unwept  
tears.

"I am the flag of the wives who wait  
For the safe return of a martial mate,  
A mate gone forth where the war god  
thrives  
To save from sacrifice other men's wives.

"I am the flag of the sweetheart true,  
The often unthought-of—the sisters,  
too.

I am the flag of a mother's son,  
And won't come down till the victory's  
won!"

Dear little flag in the window there,  
Hung with a tear and a woman's  
prayer;

Child of Old Glory, born with a star—  
Oh, what a wonderful flag you are!  
—William Herschell in the Indianapolis  
News.

## MARINDA'S SLICKIN' UP

**W**HEN the Brown place was sold for four thousand dollars it was the talk of the town. Some called Brown lucky, others termed him a sharper, and nearly everybody agreed that the purchaser was a "numskull with more money than brains." But by the by the Brown place began to blossom out, and in the course of a few months was the pride of the town. Old fences came down, stumps were removed, flower-bordered walks appeared as if by magic, and tidiness was everywhere apparent. No great amount of money was expended, but system was adopted, and every little change brought out the beauty that had so long lain hidden in the old homestead. The Browns had begun by "slicking up" and it only remained for the new comer to make the place artistic.

It had long been Jared Fuller's hope to sell out at a figure that would enable him to purchase a small place in the village, and have enough left over to keep him from want the remainder of his days. He was well along in years, and his hundred acre farm was fast becoming an elephant on his hands. Mrs. Fuller was no longer able to do the work of the dairy, and with Marinda away from home the greater part of the year the old couple longed for the few conveniences the village afforded.

"Ef we only had a leetle house down street, with an acre uv ground, a few hens an' a leetle money in the bank we could git erlong amazin' well," he was wont to say, but no purchaser came, while the fences leaned further and further, and many of his farming tools rotted down in the dooryard.

During the winter of the coal famine, many shade and fruit trees around the house had been sacrificed, the stumps of which still stood high and unsightly. The wood pile, with its attendant litter, had spread and spread until it covered half of the back yard, and was a blot on the landscape viewed from the road.

All this untidiness jarred upon the finer nature of Marinda Fuller during her vacation visits, and though she expostulated with her hard-headed father it was to no purpose.

"Them's city notions," he would say, and the grass grew tall in the front yard, and the trellises fell from the weight of the climbers.

When Marinda came home the following summer she was full of determination. She had come two weeks earlier than was expected for the purpose of getting things in order for the arrival of her city friend. It was to be a case of father's will against daughter's, and she had already decided as to how her battle was to be waged. She was scarcely more than

seated in the old family wagon when she fired the opening gun.

"Mother writes that the place looks more run down this spring than ever," she ventured.

"Waal, I dunno how it's goin' to be helped, I an't got no time nur money to fritter away on sech things ez that," returned the farmer rather dejectedly.

"An hour or two a day would do a lot toward fixing up a place, father."

"Yaas, but I don't hev that hour or two an' never hev an' never will; the place is all right fur what I git out uv it. I ain't a bit better off than I wuz when I started in 30 years ago, an' ef they any fixin' up done somebody'll hev to do it besides me," and Jared Fuller pulled his hat brim far down over his eyes apparently to protect them from the glaring sun, but more especially to hide their moistened depths from the gaze of his daughter.

"Father," Marinda began, after a moment's silence, "may I fix the place up myself? I—I've got a friend coming up from New York in about two weeks, and I'd like to—to make it a little more presentable."

"Yew fix it up?"

"Yes, me, father; that's why I've come ahead of time."

The old farmer eyed his daughter critically. He saw that she meant business, and his strong will gave way a little. He spoke with much deliberation.

"Waal, ef yew've got any money to throw away on the ol' ranch, why I dunno's I've got any objections, but I want yew to jest bear in mind, Marinda, thet I shan't lift a finger nur furnish a cent."

"And you won't object to anything I do so long as I don't injure the property or inconvenience you with your farmwork, father?"

"No, go ahead an' stick it up to suit yerself," and Jared Fuller heaved a sigh of relief now that his consent had been given, and his hands were clear of any part of the proceedings.

By this time they had reached home, and after greeting her mother, Marinda lost no time in getting her plans under way. She engaged a painter to give the house one coat of paint, bought a lawn mower, and secured the services of big John Fales, and his boy to work around the place for two weeks. Scythes began to swing across the front yard, and a cut path led to the front door. The old, unsightly fences were carted away, and the 18 inch wall that separated the lawn from the highway, was neatly whitewashed. Every stump was dug out, the ground levelled, and turfed over. The farming tools were housed in hastily improvised sheds, and two artistic pillars built of field stone ornamented the driveway entrance. The old woodpile was moved to a more suitable spot, and in its place a flower bed was spaded. The front veranda was put in repair, and a hammock swung invitingly over its floor. Across the road trees were trimmed and underbrush removed so that a view could be had of the river that wound prettily through the valley.

At the end of two weeks Marinda had gone as far as her limited means would permit, but the transformation of the "Fuller place" was truly wonderful, and Marinda's father was forced to admit that he "felt more like he wuz visitin' some uv his well t' do relations than livin' to home."

At length the long looked-for day arrived when Marinda's friend was expected. Much to the surprise of her parents, an athletic, well-dressed man of about 35 sprang from the wagon, when Marinda drove up in front of the house. A tell-tale blush stealing into her cheeks when she introduced the visitor as Doctor Forrest, of the hospital, told her father and mother that a pretty love story was undoubtedly woven into her hospital experience.

"Marinda," said Doctor Forrest, a few nights later, as they lingered under the moon-lit veranda, "this is an ideal spot up here; just the kind of a place I have longed for for years in which to spend my summers. I have fallen completely in love with it."

"Would you care very much if the homestead passed from your father's hands into mine, or rather 'ours,' for I hope to claim these as my own be-

## After a Hard Day's Work—

WITH the chores done, the stock tended to, everything ship-shape and air-tight for the night—

It's pretty nice to settle down to supper with a steaming cup of Ghirardelli's at your elbow. Pretty nice and warm and comforting!

And in the morning—up early (what with help so scarce!) and a hundred and one things to do—it's right comforting to know that Ghirardelli's will be there at the breakfast table to greet you.

A delicious, sustaining food-beverage—drink it every day for health and economy.

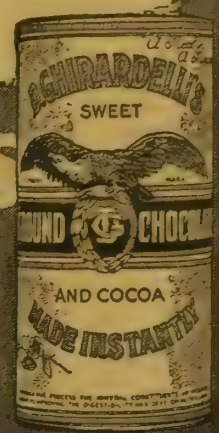
In  $\frac{1}{2}$  lb., 1 lb. and 3 lb. cans; a  
tablespoonful—one cent's worth—  
makes a cup.

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(PHILATELIST—a collector of stamps, [Webster])



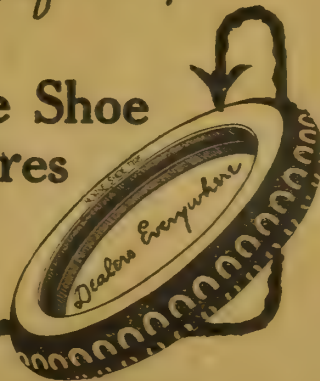
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MYERS HAY TOOLS  
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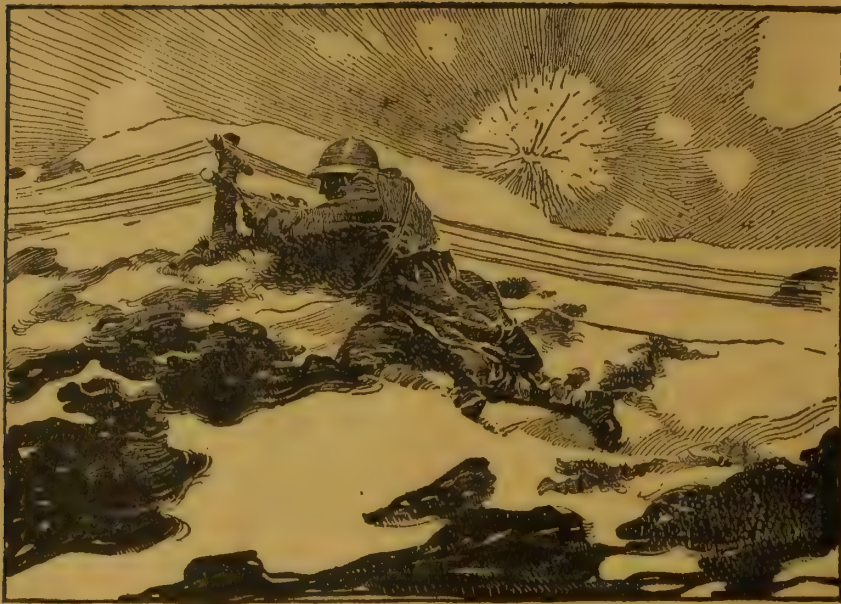


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Alone in the midst of war's desolation, the telephone line-man crawls to mend the broken wires.

On all sides the thunder of artillery; in the air bursting shrapnel.

He faces danger with that unconquerable spirit of war service which permits him to think only of maintaining the telephone connections.

The safety of the troops depends on these lines of communication, often used for the sentries' warnings, the carrying of official commands and the

summoning of reinforcements.

In a dark hole hidden among sparse brushwood are the telephone operators, some of whom have been for months in their damp cave ceaselessly swept by shells.

And they are admirable, all these heroes of the Signal Corps, whether serving in darkness or in the all too bright light of day.

The spirit of war service, over here as well as over there, furnishes the nerves, the endurance, the morale—the stuff that wins war.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
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fore we leave this Eden again?"

"I know that father desires to sell the farm and live in the village, but I—I never thought of parting with the old place; it has grown very dear to me," she replied, with much feeling. "But you won't part with it, my dear, it will be ours; yours, forever. It shall be one of your wedding presents. I know all about what you have done up here in the way of beautifying the place, and I love you for it. We have talked it all over, your father and I, and have settled upon price and everything. He is happy over the result, and so am I. Are you satisfied, little girl?"

And without her uttering a single word he knew that she was.—Green's Fruit Grower.

### TO BE HAD FOR THE ASKING

A series of ten leaflets telling how to use to best advantage potatoes, corn meal, oatmeal and other foods which we find it necessary in these days of war necessity to use largely, may be had by writing to Food Administration, United States Department of Agriculture, Washington, D. C., and asking for United States Food Leaflets Nos. 1 to 10. The titles of the leaflets are: Start the Day Right with a Good Breakfast, Do You Know Corn Meal? A Whole Dinner in One Dish, Choose Your Food Wisely, Make a Little Meat Go a Long Way, Do You Know Oatmeal, Food for Your Children, Instead of Meat, Vegetables for Winter, Plenty of Potatoes. It is not necessary, however, when requesting the leaflets to send the titles, simply ask for Nos. 1-10.

From "Plenty of Potatoes" we take the following recipes:

#### Potato Corn Meal Muffins

Two tablespoons fat, one tablespoon sugar, one egg, well beaten, one cup milk, one cup mashed potatoes, one cup corn meal, four teaspoons baking powder, one teaspoon salt.

Mix in order given. Bake 40 minutes in hot oven. This makes 12 muffins. They are delicious.

#### Potatoes Good in Cake

They are often used in this way to keep the cake from drying out quickly. Mash the potatoes and beat up with milk until very light. You can use your usual cake recipe, substituting one cup of mashed potatoes for one-half cup of milk and one-half cup of flour.

#### Potatoes for Your Main Dish

Potatoes, left over or fresh, may be combined with cheese or nuts or meat or other material, often to make the main dish of a meal.

#### Potato Sausages

One cup mashed potatoes, one cup ground nuts, fish or meat, one egg, well beaten, one-eighth teaspoon pepper, salt pork, bacon or other fat.

Mix the mashed potatoes and seasonings with the ground nuts, fish or meat. Add beaten egg. Form into little cakes or sausages, roll in flour and place in greased pan with a small piece of fat or salt pork on each sausage. Bake in a fairly hot oven until brown.

#### Scalloped Potatoes and Cheese

Arrange a layer of sliced raw or boiled potatoes in greased baking dish and sprinkle with grated cheese and a little flour. Repeat until dish is nearly full. Pour milk over the whole, about one-half cup to every three potatoes. Skim milk is good. Bake in a moderate oven until done. The length of time required depends upon whether the potatoes are raw or boiled and whether the baking dish used is deep or shallow. Boiled potatoes baked in a shallow dish will take only 20 minutes. Raw potatoes in a deep dish may take as much as 1½ hours.

#### A Shepherd's Pie

Grease a baking dish; cover the bottom with mashed potatoes. Add a layer of cooked minced meat or fish, seasoned well and mixed with meat stock or gravy. Cover with mashed potatoes. Bake long enough to heat through—20 to 30 minutes.

Try a rye-bread cottage cheese and tomato catsup sandwich. It will give your palate a thrill, one you'll probably repeat.

Has your dollar gone to the Red Cross?

### HOME GROUND CORN MEAL

A Suggestion from the Island of Jamaica

"I have made corn meal with my coffee mill that would make some of the imported corn mills feel ashamed. This is how I do the thing: First, I have the mill properly cleaned with hot water and dried. Then I screw it down so that the corn comes out in coarse grit from the first grinding. Secondly, I screw it up to three-quarter tight, and pass the grit through which should come out nearly done. Thirdly I screw up as tightly as possible, return meal to mill and the result is that after sifting I get as fine meal as could be desired. Again, if I desire to have a real good plate of pea soup, all I have to do is to pass the peas through the mill before cooking, and the result is marvellous. I have not tried it with banana or potato chips, but I feel confident that the same results can be obtained. Of course, it takes up more time and labor than the corn mill, but the results pay when you haven't got a corn mill of your own or one near by.

There are latent possibilities of helpfulness in children that some mothers never discover. The child will love and take pleasure in doing the tasks assigned him if the right attitude toward work is taught and freedom of imitation allowed as far as possible. The little girl will dust and tidy the living room more joyously if she be permitted to arrange the rose bowl and flower vases to suit her taste and make the few little changes in furnishings that she considers more artistic.

Genuine comfort if you ask for and get—

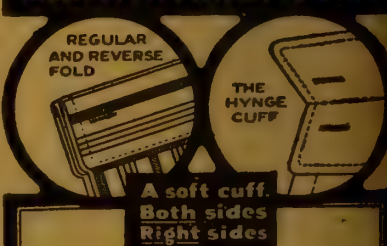
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Beware of Imitations—  
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On Khaki ground—stripe patterns that absolutely will not fade. And "Blighty" Fabric and Detail Quality is Kept Up. Ask your dealer.

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# LACTEIN



## For Chickens and Hogs

Lactein is condensed buttermilk and for feeding chickens and hogs equals the best buttermilk at a cost of about one cent a gallon. It will positively produce more chickens, more hogs, more eggs, more pork and more money.

LACTEIN is a scientific product produced under perfect sanitary conditions from fresh buttermilk and whey at the creameries, cheese and casein factories of California.

### BUTTERMILK IS 91 PER CENT WATER

Buttermilk contains 9 per cent solids and 91 per cent water. Whey contains 6 per cent solids and 94 per cent water. The solids of both buttermilk and whey, and especially whey, are very rich in the one greatest tonic known for chickens, **LACTIC ACID**. They are also rich in protein (albumen and milk sugar or carbohydrates). LACTEIN is produced by separating the water from the solids at a temperature and in a manner that not only thoroughly Pasteurizes and sterilizes the solids, but retains and stimulates the Lactic Acid, which in buttermilk is practically lost if either brought to a high temperature or reduced to a dry state.

### LACTEIN IS BUTTERMILK WITHOUT THE WATER

LACTEIN retains all the health-giving food values and a uniform acidity without the useless bulk of water encountered in either whey or buttermilk, and will keep pure and fresh under any condition or in any climate for any length of time.

### LACTIC ACID IS A TONIC

For years the greatest poultry experts in the world have recognized the value of sour milk as a food tonic—a regulator for poultry and hogs, but when they have undertaken to use raw buttermilk have run up against objections which more than offset the many advantages for its use in feeding. In the main these objections were the excessive cost, inconvenience, trouble and expense of handling, and the poor keeping qualities. LACTEIN eliminates every objection to the use of raw buttermilk and reduces the cost to a mere trifle.

### ONE GALLON LACTEIN EQUALS FIFTY GALLONS BUTTERMILK

One gallon of LACTEIN, when mixed with 49 gallons of water, has a tonic and food value for chickens or hogs equal to fifty (50) gallons of the best buttermilk and will give better results than 50 gallons of raw buttermilk when fed according to our directions, not to mention the convenience in handling and the saving in price. LACTEIN is prepared by the chicken raiser in this manner each day in the amount required and fed as drinking water or in mash feed or both, but the best results are obtained by feeding one part LACTEIN to 30 parts water. This gives almost double the value of raw buttermilk.

### DRUGS NO VALUE TO CHICKENS OR HOGS

Everyone knows healthy chickens produce healthy profits and the other kind do not. To produce healthy chickens the eggs must come from healthy hens and the leading scientific authorities recognize the fact that no drugs yet discovered have proven practical for treating diseased chickens, also that it is more easy as well as more profitable to prevent disease than to cure it.

### LACTEIN IS A POSITIVE PREVENTATIVE

The Kansas City Farmer says: "Scientists have found in buttermilk the greatest foe of the bacteria to be found in the large intestines of chickens. Since practically all poultry diseases, aside from roup, are intestinal, **THIS FACT IS IMPORTANT**. When buttermilk is fed regularly to poultry the mortality is much less, and if young chickens are fed on it from the start it prevents white diarrhoea."

The California State Agricultural College says: "Disease in chickens may be controlled by feeding buttermilk and it has the added advantage of being an excellent food. In fact every effort should be made to obtain it."

### LACTEIN INCREASES GROWTH

The Agricultural College of Wisconsin says: "A pound of protein from cornmeal is not equal to a pound of protein from buttermilk in making growth. In fact it has been proven if the cereal grain proteins are used as the sole source of proteins they will show an efficiency of less than 30 per cent,

while the proteins of buttermilk will reach 65 per cent. In other words, only 30 per cent of a pound of protein from the grain would be stored away while the buttermilk will give 65 per cent. Buttermilk is therefore a more superior article as a rational diet for chickens, hogs or for human consumption."

### LACTEIN ASSURES MAXIMUM EGG PRODUCTION

It is not how much you feed your chickens, but how much you feed that is assimilated—**THAT MAKES FLESH AND EGGS**—that counts. LACTEIN makes the feed you are now using worth more by increased assimilation. It will make your flock healthy and vigorous, an absolutely necessary condition to a maximum egg production. Since wheat cannot now be used for chicken feed, it is most necessary to not only make the less desirable feeds palatable to the chicken, but increase the assimilation if the egg and flesh production are to be maintained or increased. LACTEIN will do it.

### LACTEIN PREVENTS DISEASE

It not only prevents the many distressing diseases known to poultry, but it provides an even greater service as a fattener and egg producer by aiding digestion, improving appetite and increasing assimilation. Its use will positively bring a greater and more rapid growth of every fowl in the fattening pen, build firmer flesh, add wonderfully to the general vitality of the entire flock and, owing to its excessive nutritive qualities, makes record layers of hens that previously were very poor egg-producers.

### LACTEIN SAVES THE BABY CHICKS

LACTEIN will cut your heaviest losses 90 per cent in baby chicks. It prevents the dreaded white diarrhoea and will show a much more rapid growth in weight than for chicks given the same food without LACTEIN. This has been proven many times. LACTEIN is equally valuable for the entire feathered family, turkeys, ducks, geese, pigeons, etc. It not only prevents losses and increases profits, but it lightens your labors.

### FEED LACTEIN TO HOGS

LACTEIN is equally valuable as a food for hogs. It stands to reason that if buttermilk is a good appetizer and tonic for hogs, LACTEIN is even better because the acidity of the LACTEIN is always the same. Feed it to hogs in their swill water or other feed and watch them grow. A few pounds more of pork these days makes a big difference in the profits.

### WE GUARANTEE LACTEIN

We do not want your money unless you feel that LACTEIN is all we claim it to be. We will promptly refund your money if it does not do all that is claimed for it, when directions for using are carefully followed. Every gallon of LACTEIN is sold under these conditions, and we have yet to find a customer who has asked to have his money refunded, but have many letters similar to the following:

Mr. O. J. Rogers, a real estate dealer and chicken raiser of Modesto, Cal., writes: "I began feeding your LACTEIN milk food to my chickens about three months ago and am well pleased with the results. In fact, would not think of being without it for a single day. About a month ago, I discontinued its use for ten days and my egg production dropped from 60 to 38 per day. I changed the grain feed, but got no increase in eggs and then began feeding LACTEIN again and am now getting 68 eggs per day, or nearly double the number that I got without it. I consider LACTEIN both a tonic and a food for chickens. It not only prevents sickness, but seems to increase assimilation and gives more food value to the other food. It sure keeps the chickens in fine, healthy condition."

### LACTEIN IS A BODY BUILDER

LACTEIN is a tonic, appetizer, liver and bowel regulator, body-builder and egg-producer. It will not mold, sour or rot, and will retain its acidity and other properties indefinitely and under any climatic conditions. Nothing, however, will convince you of the worth of LACTEIN like feeding it to your own chickens or hogs. "The proof of the pudding is in the eating thereof." Any chicken or hog raiser who will feed LACTEIN as directed for 30 days will thereafter never be without it, for it means more healthy chickens and hogs, more rapid growth, more eggs, more pork, and more money.

## LACTEIN

LACTEIN is put up in wood barrels holding five, twenty-five or fifty-two gallons. Should your local feed dealer not have LACTEIN, write us direct and we will see that you are supplied without delay, or better yet, fill out and mail the coupon below or a copy of it, and we will send you a five-gallon keg by express, prepaid. This when diluted with water as per instructions is equal to 250 gallons of the best fresh buttermilk for chickens or hogs, and is sufficient to acquaint you with the wonderful merit of LACTEIN. The price in fifty-two-gallon barrels is \$26.00 per barrel, twenty-five-gallon barrels, \$15.00, and five-gallons \$3.50.

The largest and most successful chicken and hog raisers all over California feed and recommend LACTEIN, and the results they obtain are really remarkable.

Address all inquiries regarding LACTEIN to

# Lactein Food Company

Hearst Building, San Francisco.

Cut this out and mail today.

LACTEIN FOOD COMPANY,

Hearst Bldg., San Francisco:

Ship me a five-gallon trial order of LACTEIN by express, prepaid, for which I hand you herewith \$3.50. Send full directions for feeding.

Name .....

Address .....





*Made also with Ribbed Tread*

*A Great, Big, Handsome Tire*, WITH A BIG-BUTTON, NON-SKID TREAD that gives you the greatest possible amount of safety against side-slipping. It is built with an intimate knowledge of what you demand in a tire, combining luxury, resiliency, comfort, speed, good looks, endurance, safety and economy to the highest degree.

The reputation of an old and long-experienced manufacturing institution for tires of the highest quality and soundest value is more than maintained by the unsurpassed record of the

**FISK** SOLD EVERYWHERE **CORD**

Time to Re-tire?

(Buy Fisk)





# CALIFORNIA CULTIVATOR

and *LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

April 20, 1918

SAN FRANCISCO

## *It Must Be Kept Alight!*



UPON America devolves the sacred duty of keeping alight the torch of Liberty and upholding justice and democracy throughout the world.

Let us not falter or count the cost, for in the freedom of the world lies our only safety and the preservation of our American liberties and institutions.

It isn't a matter of choice that America is in the war. We chose to be an observer only for nearly three years, or until human liberty was nearly crushed from the earth. When duty drove us to take part in the world war we entered with all our mind, might, strength and soul.

Keep Liberty's Torch Burning.  
Buy Liberty Bonds. Buy W.S.S.  
Conserve Food. Produce Food.







# WHICH?

**Loan Your Money  
to Uncle Sam**

OR

**Let the Kaiser  
Take it From You**

**M**ONEY earned through your liberty will do no good if the Kaiser wins.

Money loaned to Uncle Sam pays you interest and is safe. If the Kaiser wins, what you have will be taken and you clubbed for not having more.

You may have bought a First Liberty Loan Bond. And you may have bought a Second Liberty Loan Bond. And you may have foregone some pleasures or comforts in buying either or both.

But you **must** buy a Third Liberty Loan Bond.

This is more than a duty. It is your country's call at a time when *more money* is needed to win the war.

The vast sums already raised and expended were but stepping stones. Now comes the Third call and you must respond generously—with sacrifice, if necessary.

Let us finish it now—as a whole nation unified in lending. It is the only way to win, and win we must. Buy that Liberty Bond *today!*

*This page is donated by the following Patriotic Los Angeles Firms who realize the necessity of Success of the Third Liberty Loan:*

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# California Cultivator

Vol. L, No. 16

LOS ANGELES: APRIL 20, 1918

One Dollar Yearly

## Economic Entomologists Meet

The Pacific Slope Branch of the American Association of Economic Entomologists Discusses Problems Affecting California Horticulture



FOR the first time the Pacific Slope Branch of the American Association of Economic Entomologists met recently at Riverside and later at Alhambra with the officers of the state insectary and members of the department

of agricultural force which are permanently located in Southern California at Alhambra. Besides the usual attendance — even a greater than usual attendance on the part of Coast members — the meeting was honored by the presence of Prof. Fernald, entomologist of the University of Massachusetts.

The first day's sessions were held at the experiment station at Riverside, following the dedicatory services. At both that and the Alhambra meeting there were scientific papers but more largely the discussion followed the lines of practical insect control.

The election of officers resulted in Prof. H. J. Quayle of the University of California being named president and E. O. Essig, farm adviser of Ventura County, secretary.

On the second day of the meeting a luncheon was served the members at Pasadena, after which a pleasure trip was taken through the Huntington Estate and the Busch Gardens. The Huntington Estate makes a showing of one of the finest collections of native and exotic plants in existence.

Regarding the work and history of the association President Quayle says:

The American Association of Economic Entomologists was organized in 1889 and now includes a membership of more than 500, practically all of the entomologists of the United States and Canada, as well as the

leading entomologists of foreign countries.

This association meets each year during the holidays in connection with the meeting of the American Association for the Advancement of Science. Its last meeting was held in Pittsburg. The officers of the association for the present year are: Dr. E. D. Ball, president, Madison, Wisconsin; Professor W. C. O'Kane, vice president, Durham, New Hampshire; A. F. Burgess, secretary, Melrose Highlands, Massa-

chusetts. This association publishes the "Journal of Economic Entomology" the leading publication of its kind in this country.

On account of the distance to most of the meetings of the parent association, which are usually held east of the Mississippi, the members in the Western states organized a branch association three years ago. This is called the Pacific Slope branch of the parent association, which includes entomologists west of the Rocky Mountains.



H. T. Fernald  
Entomologist Massachusetts Agricultural College.



Entomologists in Convention

Attendants at the meeting of Pacific Slope branch of the American Association of Economic Entomologists. Photo taken at the Alhambra meeting. 1, D. M. Mackie; 2, G. A. Coleman; 3, E. F. Atwater; 4, H. P. Severin; 5, R. E. Campbell; 6, J. D. Neuls; 7, A. F. Swain; 8, A. S. Hoyt; 9, H. J. Quayle; 10, H. T. Fernald; 11, H. S. Smith; 12, E. L. Morris; 13, G. P. Weldon; 14, G. P. Gray; 15, H. J. Ryan; 16, R. W. Doane; 17, G. S. Demuth; 18, C. A. Ferrin; 19, J. C. Bradley; 20, S. B. Freeborn; 21, R. S. Woglum; 22, E. J. Brannigan; 23, H. D. Young.

## War-Time Rations for Dairy Cows

Address by Prof. F. W. Woll at Dairy Conference at Davis

THE war has affected the business of dairy farming as it has other industries: it has greatly increased operating expenses through the higher cost of supplies and the higher wages that milkers and ranch hands can command, as compared with pre-war times, and to offset the increased cost of production, at least in part, the price received for the milk or butter fat is considerably higher than before the war—in spite of which milk is still the cheapest animal food that enters into our dietary. It is practically indispensable to the human race, furnishing easily digestible food components at a relatively low cost. It supplies the sole source of the so-called vitamins, food accessories of prime importance in the nutrition of the young, and at least so far as dairy stock is concerned, the by-products of the dairy form a most important factor in the development of a strong body frame and a vigorous constitution which are essentials in successful dairy husbandry.

The changed conditions during the past year have worked to the disadvantage of the dairy farmer, and he finds himself more than ever before under the necessity of lowering the cost of production of the milk in

order that the accounts may balance or show a profit at the end of the year. There are at least four factors that enter into the case and determine the production cost of his product. The first and most important is the amount of milk produced by the cows. The other three are, the cost of equipment, of labor, and of feed. The average dairy cow of the state produces hardly more than 500 gallons of milk a year. Against this we have no doubt thousands of cows that produce over 8000 pounds a year, hundreds that produce over 12,000 pounds, dozens that produce over 24,000 pounds, and a very few that have even exceeded 30,000 pounds of milk a year, which is nearly eight times the average production of a dairy cow of this and many other states. Now, how does this affect the production cost of the milk? An inquiry conducted a few years ago at the Ohio station suggests the answer. It was found that under the conditions prevailing at that time, it cost on the average 6.2 cents to produce a quart of milk from cows yielding 3000 pounds a year; 4.7 cents for 4000 pound cows; 3.8 cents for 5000 pound cows, and 3.2 cents for 6000 pound cows—a reduction of 3.0 cents, or about 48 per cent, in the cost of production for the best cows

over that for the lowest producing cows.

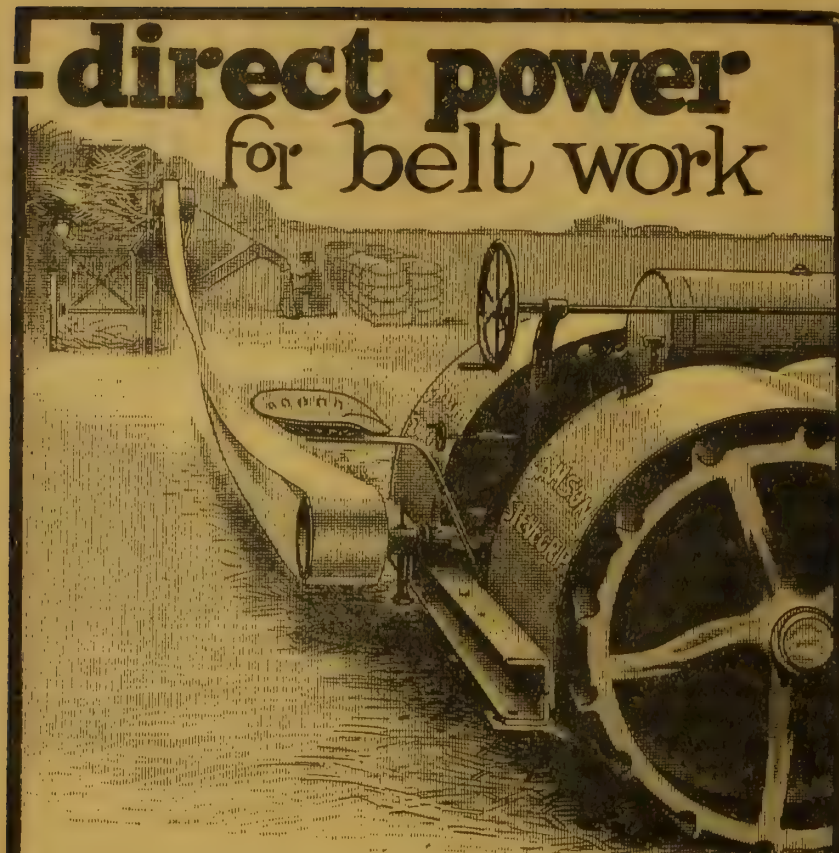
To reduce the cost of producing milk, therefore, produce more milk per cow. That offers the greatest opportunity for lowering the cost. The dairyman whose cows average 8000 pounds of milk or better a year does not have to worry much about the increased cost of supplies or labor. He is receiving more for his milk or butter fat than he did previously and is, as a general rule, perhaps even somewhat better off under war-time conditions than before. But this is doubtless not the case with the large majority of dairy farmers whether they furnish the milk for direct consumption, or for the manufacture of butter, cheese, or condensed milk. The road to improvement is open to these, however, and in view of the low production of most of their cows, the results of measures taken with a view to increasing the milk yield will be likely to be more readily obtained and more decisive than in the case of herds that already have a high average production. It is only necessary to suggest the two main measures that may be taken: Selection of the best dairy-bred bull of the breed decided upon that one can afford, to be placed at the head of the herd, and

persistent culling out of low and unprofitable producers in the herd until this shall contain only cows of good dairy type and known dairy capacity. The third measure that must accompany these two is feeding and handling of the herd in such a manner as to secure a maximum production from them at as low a cost as possible.

Of the other factors influencing the production cost of milk, than that of the amount of the milk yielded, the item of cost of equipment is largely beyond the control of the dairyman. Under the state dairy law, he must provide appliances which will insure the production of an article that is up to a certain sanitary standard. The labor cost is also determined by conditions that he can control only to a limited extent. He cannot, as a general rule, work harder or during longer hours than he has in the past, and he cannot get any more work out of the help than before, if as much. He can cheapen the work of milking to some extent by the adoption of machine milking, but unless he has a large herd, the saving will come more in making the work easier than in reducing materially the time it takes to milk the cows. This leaves, therefore, the feed as the main reliance on

Continued on Page 510





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## MICA AXLE GREASE

## More About June Drop

Written for California Cultivator By Robert W. Hodgson



SOME weeks ago in these columns the writer discussed two specific cases of orange groves which did not suffer the drop occasioned by the hot spell of last season to anything like the same extent as other groves in the same vicinity. On analysis, these instances were found to be in direct accord with the findings of the agricultural experiment station, reported in Bulletin 290, and indicated rather conclusively that one of the most important causal factors of the drop lies in abnormally high soil temperature during the critical period.

In the bulletin referred to the recommendation is made that the growing of alfalfa, or summer cover crops such as cow peas, may be expected to result in heavier crops. A number of citrus growers have expressed some surprise at this recommendation and are inclined to look askance at such a procedure on the grounds that under normal conditions it is impossible to get a summer cover crop in and up before the trees come into bloom. This is quite correct. The question has, however, to do not only with the time of bloom, but also with what is known as the "critical period."

There is a period beginning at the time of bloom and lasting until the development of strengthening tissue occurs in the pedicel, when the young fruit is very loosely attached to the tree. At this time the only tissue holding the fruit to the tree in any secure fashion is the central vascular system consisting of a few wood vessels. This critical period lasts from the time of bloom for six weeks to two months. During that time the pedicel enlarges but little, but with the end of the period it commences to grow rapidly and in a short time reaches its limit of growth, being as large as it ever gets. During this growth period a large amount of fibrous strengthening tissue is laid down through the joint in the pedicel, making it quite difficult to sever the fruit from the tree at that point.

During the "critical period" disturbances in the water relations of the tree, if marked enough, initiate what is known as an abscission process which results in the separation of the plant cells in the region of the joint in the pedicel. This leaves the fruit attached only by the weak vascular system, and a slight jar is usually sufficient to cause the fruit to drop. In some cases where the atmospheric humidity is extremely low this central vascular system dries so rapidly that it becomes tough and the young fruits shrivel up and hang on the tree the rest of the season, supported by this dry central core.

As a general rule climatic conditions during the blooming period are not unduly severe and the danger from excessive drop not great. It is toward the latter part of the critical period that we may expect hot dry weather. If the summer cover crop is in and up by the latter part of April under ordinary weather conditions it may be expected to materially cut down abnormally high soil temperatures which may occur toward the end of the critical period. Last season the bloom was so late that summer cover crops were planted in some cases in time to function during the greater part of the critical period which was approximately from May to July.

The writer recently had the pleas-

ure of going over the Arlington Heights fertilizer plots, conducted by the citrus experiment station, with Mr. Gordon Surr. Some most interesting results have been obtained there this last season, particularly as to the size of the crop borne on the plots receiving different treatments. Some of the plots have been mulched with alfalfa hay and some with barley straw; several had summer cover crops of buckwheat and several, cow peas, both of which were let go to weeds, while one plot is in permanent alfalfa. In every case where the ground was shaded, either by a mulch or by a summer cover crop, during the heat wave of June, 1917, the crop borne by the trees is noticeably larger than on the plots not so treated. The writer is informed by W. M. Mertz, formerly of the citrus experiment station, that the same condition holds true with reference to the mulched plots at the experimental plot at the Chaffee Union High School at Ontario. The heaviest yields were obtained on the mulched plots.

The Arlington Heights plots, however, exhibit another very marked influence on the amount of crop borne to maturity. Apparently where there was an abundance of nitrates readily available to the trees during the hot spell the crop set was much larger than where the nitrates were not so readily available or the amounts not so large. Indeed in one case an almost quantitative relation between the amount of available nitrates and amount of fruit borne can be established. One plot received a certain amount of dried blood in addition to some other fertilizers. Another receiving exactly the same treatment, with the exception that the amount of blood was just twice as much, has apparently almost twice as much fruit. In the opinion of those most familiar with the experiment there can be no other explanation than that this is the most direct effect of the presence of available nitrates. This at once raises the old question as to whether it is not possible to increase the amount of fruit by the application of a fertilizer high in available nitrogen prior to the setting period. It also raises the possibility that many of our citrus trees are greatly underfed with regard to nitrogen and that the stimulus to abscission is brought into play more easily under these conditions. If this be the case, the amount of available nitrates must serve as a limiting factor to heavy crops. At any rate, these results indicate very strongly that during the critical period every effort should be made to keep the trees well supplied with available nitrates and to prevent soil temperatures from becoming abnormally high by the use of summer cover crops.

—LIBERTY BOND—  
CAROB

We are informed that Peter Bisset of the bureau of plant industry, United States department of agriculture, is making an effort to secure from Spain and Algeria some budding wood from the most desirable varieties of St. John's Bread tree (algaroba or carob). Like nearly all other trees the carob refuses to breed true to its parents, at least to do so is the exception, though from some of the earlier planted seedlings in the state there have been produced occasional trees which are large producers and producers of exceptionally rich "fruit." One tree at Rialto is said to produce pods which show more than 50 per cent sugar. This tree will doubtless be used to supply budding wood to some of the seedlings now grown in the state. There are other trees also of value, but none showing quite the sugar content of this one.



## Value of Green Manure Crops in Southern California

A bulletin which should prove of great value to the agriculturists of Southern California has just been issued by the University of California College of Agriculture. It is entitled "Green Manure Crops in Southern California," and was compiled by W. M. Ortiz, who until January 31, 1910 was superintendent of cultivations at the Riverside experiment station. For the past ten years experiments have been in progress in the citrus experiment station to determine the value of green manures in citrus orchards, and for the past six years there have been conducted experiments to determine the relative effects of the different green manure crops, including legumes and non-legumes. In this bulletin are given the results of these experiments and the deductions made therefrom.

A number of legumes gave satisfactory results when grown as green manure crops, of which Melilotus Indica (bitter clover) is the most promising, both from the standpoint of vigor and availability of seed. It has also been proved to be well adapted to a great variety of conditions. Purple vetch gave heavy yields and is more rapid in its early development than the Melilotus Indica. When seed becomes available in sufficient quantities it should be largely planted. Burr clover did not give as good results as Melilotus and is of value mainly in sections and under conditions where its early seeding habit will permit of its re-seeding itself. Fenugreek was not found satisfactory, and spring vetch and Canada peas

were found of value only in sections where the green pea aphid is not yet a factor.

Legumes were shown to be far superior to non-legumes in their effect on the field crops following.

It has been conclusively shown that green manure crops produce a marked effect on citrus crops, the trees so fertilized being in every way superior to those not so fertilized. Not only was more fruit produced, but much larger and finer fruit, and mottle-leaf was noticeably less. These cover crops not only add to the fertility of the soil, but conserve the fertility also as they prevent washing of the top soil during heavy rains. By absorbing the excess nitrogen of the soil and holding it until they are plowed under, they keep this nitrogen from leaching below the reach of the tree roots, and the decay of the roots of the cover crop, which have been found at a depth of eight feet, tends to make the soil more open to the air and water.

Green manure crops should be sown during September or October, and irrigation is usually required to start the growth and carry the crop until the rains begin. Artificial inoculation is seldom necessary in Southern California. To get the best results the green manure crop should be plowed under seven to ten inches and the soil should be moist at the plowing, even if necessary to irrigate beforehand.

The bulletin may be obtained free of cost by writing to the College of Agriculture, University of California, Berkeley.

## Subsoil

The local center of the Los Angeles County bureau at La Habra is one of the live institutions of the most noted of the state. At the regular meetings an effort is made to have "outside talent" occasionally but more often members of the center deliver practical talks on their own home-made products. Some time ago—before the recent rains—M. J. Pickering delivered a talk on subsoiling, discussing it especially from the standpoint of conserving as much of the soil's scant moisture as possible. The rains have come in such abundance since that for this season this talk ceases to have some of its former value but there are some points in it which we have been given the liberty to quote.

"In a general way subsoiling means breaking up the ground just beneath the soil or top layer. No attempt can be made now to discuss the various types of soil and subsoil in which subsoiling may or may not be needed. There are special conditions which make it not only desirable but helpful and necessary. It is helpful at all times, everywhere, excepting in deep sandy soils, especially so in parts of the orchard where the top soil has been removed in whole or part, leaving the poorer subsoil to support the trees. The part of the orchard to which the dirt has been taken does not need to be broken up till at least a few years later. Subsoiling is also quite helpful where there is a decided change in the slope, as on the steeper part of a hill. If the water runs down the steep part slowly enough to wet it properly the level part near the pipeline will get too much water while the lower part beyond will not get enough water.

"Also any unusually hard portion or spot that does not take water readily should receive extra attention by the subsoiler.

Mr. Pickering summarizes as follows:

1. Not extreme depth occasionally, but frequently at the proper depth, is the better plan in subsoiling.
2. Break up the ground so moisture and plant food can go down and the roots will go after them.
3. The subsoiler is one of the cheapest of tools, in both first cost and upkeep.
4. The subsoiler is the most efficient tool for deepening the soil and destroying plow sole.
5. The subsoiler conserves both water and plant food.
6. Use the subsoiler now to save moisture, and also cover crop. Breaking ground open now would prevent any loss of either irrigating or rain water, and permit cover crop to grow a few weeks longer.
7. The subsoiler increases the financial returns to the grower by increasing quantity and bettering quality of fruit.

### —LIBERTY BOND— YEAR BOOK OF INTERNATIONAL AGRICULTURAL STATISTICS

The International Institute of Agriculture at Rome, Italy, announces issuance of the International Year Book of Agricultural Statistics, containing data relating to yield, trade, consumption, prices and rates of freight for the chief products of the world's agriculture during the decennial period from 1907 to 1916.

This is a volume of 1000 pages and is sold for the low figure of eight shillings (\$1.95) post free.

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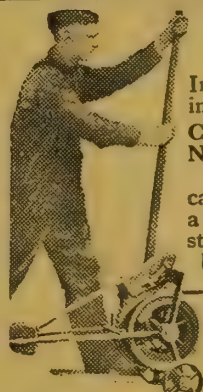
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## Valley Fruit Growers Association

Membership Campaign Under Way—Effort to Secure Sufficient Labor Supply for This Producing Season and the Harvest.



THE management of the Valley Fruit Growers' Association delayed its spring drive for membership until the Associated Raisin Company finished its campaign for five year contracts, but about the middle of March it sent out its 10,000 harvest labor questionnaires and is now canvassing nearly all of the Central California counties for new members. Regarding the need and the labor problem W. Flanders Setchel, president of the association, writes:

The harvest labor problem has been recognized as under present conditions the supreme task of the association. This problem, is, however, closely identified with the membership campaign, for in finding a solution of the harvest labor problem the association must be in possession of concrete evidence of the actual labor requirements of the district.

To make this possible the growers must join together in a cooperative effort in order that federal, state and other bodies will accept as authoritative the representations made by the association in the behalf of the growers.

During the summer months preceding the 1917 harvest season farmers' meetings were held throughout the state, whereat there were presented estimates of harvest labor requirements by different organizations for their respective districts. At these meetings the representatives of the Valley Fruit Growers' Association alone were able to demonstrate the needs of the district they represented, by a clear convincing tabulation rigidly confined to ascertained facts and capable of withstanding every investigation.

This one fact did more, probably, to establish the prestige of this association throughout the state than any other circumstance arising from the general efforts then being made to care for the harvest needs of California's farmers, and in no small measure was this prestige, so gained, the means whereby this association was enabled to present and to press its requests and representations for official assistance and cooperation.

Problem More Serious Than Ever

For the ensuing season the harvest labor problem will from the standpoint of available supply be more serious than ever before.

The draft, together with general industrial and agricultural developments, has further depleted the available harvest labor. It will be essential that the harvest labor requirements for 1918 be determined upon what practically amounts to a census basis, and to this end the association has issued the questionnaires. It is now squarely up to the growers to put in the foundation upon which the association can build the machinery for caring for the harvest labor requirements. The effectiveness of the association's work in obtaining labor will be in exactly the same proportions as the growers' response to the questionnaires now placed in their hands.

Depends Upon the Farmers

Built upon the solid foundation of an impressively large membership, fortified with accurate and authoritative knowledge of this district's harvest labor requirements, this association will be enabled to make its needs heard wherever it may seek assistance and cooperation. Official bodies to whom the association must make representations in the behalf of the growers will compute its weight and authority by the number of its members.

## Lime---Gypsum

The question often comes as to whether gypsum will correct soil acidity, also other points as to application of lime or gypsum, so we submitted the question to Dr. R. R. Snowden, and he writes:

For correcting acidity of the soil the carbonate of lime is the best form, since it is equally efficient with the hydrate or slacked lime and is not destructive to the humus.

The lump burned lime should never be used because of its strong caustic action and its certainty to liberate and cause loss of ammonia. Slacked lime, unless air slacked, is also too caustic, though when acidity is strong it maybe used to advantage.

Beet sugar lime, on account of its fineness is, unit for unit, the best carbonate of lime, but is liable to carry much water, which the buyer must pay freight and handling ex-

bers. It lies, therefore, with the farmers to give to this association power and influence.

Sections Organizing

The fruit growers of Northern and Southern California, impressed by the success of this association, are now organizing themselves along similar lines, so that while last year this association had the advantage of other districts in being organized, this year it will have active competitors for the available harvest labor supply of the state. With the support of the growers for this association, however, the advantage will still lie with this district, for here alone is the experience in the handling of such a problem available, gained and tested in successful practical accomplishment.

Again, it is up to the growers.

As nearly as possible, every raisin grower and every fruit grower of Fresno, Tulare, Madera and Kings Counties has been mailed a copy of the association's questionnaire. Any grower who has not received one should without delay get in touch with the association by letter or telephone and ask for a copy. The state farm labor agent representing the United States department of agriculture, the state council of defense and University of California have suggested that the plan adopted by this association in sending out its harvest labor questionnaire should be adopted all over the state during the coming season.

pense on without compensating return.

Conditions indicating the need of lime are (a) acidity; (b) deficiency of lime as found by analysis. The official method of analysis may show a great deal of lime when the crops on the same soil are suffering for lime. It will take account of the lime in certain combinations that the plants cannot use; (c) where the soil is a tough adobe. In Imperial and Coachella Valleys and some of the higher valleys of this state there is sufficient lime carbonate, but the soils of this southern valley are generally deficient in it. Stable manure is incompatible with either hydrated or carbonate of lime, so when it is to be applied where lime is also needed the form of the latter must be gypsum.

Lime, especially the carbonate, has the property of cementing the grains of a sandy soil, — and is said to increase its moisture holding capacity.

## Cooperative Credit Association

In answer to many requests from individuals and officials asking for assistance in the preparation of a suitable state law for cooperative credit associations, or credit unions, the bureau of markets of the United States department of agriculture has prepared a publication (Service and Regulatory Announcement No. 30) which gives suggestions for such an act, and contains a bill embodying the best views on the subject. The bill, which is submitted only as a tentative model, provides for the organization of associations without capital, as well as for the more familiar form with capital stock. In the form without capital stock it is intended to exemplify to the fullest extent the cooperative idea, and to avoid even the appearance or the possibility of profit-making. It is believed, say specialists of the department, that the practical effect of the work of a cooperative credit association will be to accustom men who are not now mak-

ing use of any banking facilities to take advantage of banking, rather than to withdraw business from existing commercial banks.

Some of the states (Massachusetts, New York, North Carolina, South Carolina, Oregon, Texas, Utah and Wisconsin) already have enacted special laws providing for the formation of cooperative credit associations. In some of these states, especially in Massachusetts, New York and New Jersey, organizations have been formed and are working successfully among factory and other workers in cities. The development of cooperative credit associations in rural districts is especially noted in North Carolina.

—LIBERTY BOND—

COMMUNITY DRYING PLANT

A successful community plant, located at Lincoln, Nebraska, for the drying of fruits and vegetables, is described in Farmers' Bulletin 916, "A Successful Community Drying Plant."

## Cut Your Cost 60%

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just issued for free distribution by the United States department of agriculture.

Practically the same plan as is described in the bulletin was followed in 11 other communities during the summer and fall of 1917, and the information is given at this time because of a demand for it for consideration at farmers' meetings. The plan proved successful under conditions found in the locality of Lincoln; in more humid or dryer sections of the country, the bulletin says, the methods employed might not prove satisfactory.

All will find valuable suggestions in Farmers' Bulletins 841 and 903, as well as the new publication. They may be obtained free upon application to the Division of Publications, United States Department of Agriculture, Washington, D. C.

—LIBERTY BOND—

SINKING OF FERTILIZER IN SOIL

Written for California Cultivator  
By J. R. Mattern

**T**HROUGHOUT all irrigated sections, and even in those places where water is not applied, entirely too little attention is paid to getting the fertilizer that is applied into the lower soil evenly and deeply. It is placed on the surface, and few indeed are the farmers or fruit growers who ever investigate whether it stays there, leaches away in the drainage water, or sinks below root depth.

Investigations by several competent people during the past few months have shown that wherever water is used the nitrates especially tend to gather or accumulate immediately under the furrow depth. A test hole dug down alongside an irrigation furrow or basin usually shows little of such available plant food in the upper few inches, a rather heavy accumulation in the few inches right at the bottom of the furrow, and practically none below that level.

The reason for this is that the soil, unless of a decidedly sandy nature, acts as a filter and takes from the water that is sinking and seeping downward any fertilizer or plant food it carries. Coupled with the poor distribution of fertilizer is a poor water penetration. The soil takes water slowly, holds little in capillary form, and dries out quickly between watering periods.

Whenever the plant food in a soil is confined to certain spots only, trees or crops of any kind cannot thrive. A few plants or a few roots of a tree here and there may get all they require, but the tree as a whole and the crop as a whole may starve right beside abundance of food.

The uneven distribution is indicated by uneven growth and health of trees or crops, but can be detected before such signs show plainly by noting that water fails to sink into the ground as freely and quickly as it might. Another sign is the drying out of areas. When the soil is clogged, or compacted, the movement of moisture in all directions, but particularly in the vital upward direction, is hindered or prevented entirely. Nor will such soil hold nearly so much moisture in capillary form as if it were properly mellow and loose.

The remedy is obvious and to a certain small degree already has been applied in many orchards and groves. The blasting of soil just where trees stand, however, is not enough. It should be broken along the lines of the rows at least one way, so that moisture in one part of the under soil may move more or less freely to another in case of a surplusage one place and shortage another.

other in case of a surplusage one place and shortage another.

The blasting must be done only when the ground is dry. If done in wet ground, pot holes and compacting are likely to result, though in non-plastic ground the crumbling and splitting is general over an area many feet in diameter. The sample for testing should be taken from a couple of feet under the surface and should be dry enough so that under pressure it fines and runs between the fingers.

In open ground the moisture that moves downward and in other directions carries with it all the fertilizers that are applied. In a short time the lower soil, where most of the feeding roots of trees naturally are located, become enriched. If cover crops are sown immediately after the breaking, their roots penetrate deeply, and later, dying furnish much organic matter which assists in maintaining the mellow condition.

—LIBERTY BOND—

A writer in the Popular Mechanics Magazine thinks that the tanks now used in warfare can be employed in reclaiming the farms of France when peace comes. The tanks can be used to draw specially devised plows in the first rough cultivation of the crater areas.

VALUABLE TO FRUIT GROWERS

Every fruit grower will be interested in Farmers' Bulletin 908, "Information for Fruit Growers About Insecticides, Spraying Apparatus, and Important Insect Pests," by A. L. Quaintance and E. H. Siegler. It may be had by writing Department of Publications, U. S. D. A., Washington, D. C. There are 100 pages, many illustrations, and a valuable fund of information on spraying methods, how to prepare insecticides, and how to use the spray pump.

—LIBERTY BOND—

COMPENSATION FOR BAGS

The ruling has been made that while no definite allowance is set for barley, it is a fact that the value of the second-hand bags is added to the bulk value of the barley, and indirectly the farmer will get back just about the same proportion of the cost of his bags when he sells his barley. Many farmers, it was said, do not realize this, but feel that they have to stand the entire expense of sacking grain.

On bags containing wheat a definite price has been set at nine cents per bushel allowance on bag value.

Twenty-four experiments are being carried on by the division of pomology at the University Farm to furnish the material for the demonstration and exhibits which it has planned for the benefit of fruit growers who visit the farm on Picnic Day (today), April 20. Valuable data has been gathered from investigations into methods of pruning, pollination, irrigation, mulching, drying and curing of fruits, control of diseases, and variety tests. The proper arrangement of varieties of fruits and nuts, especially plums, prunes, pears, and almonds—in order to secure perfect pollination, has been determined.—W. D. J.

—LIBERTY BOND—

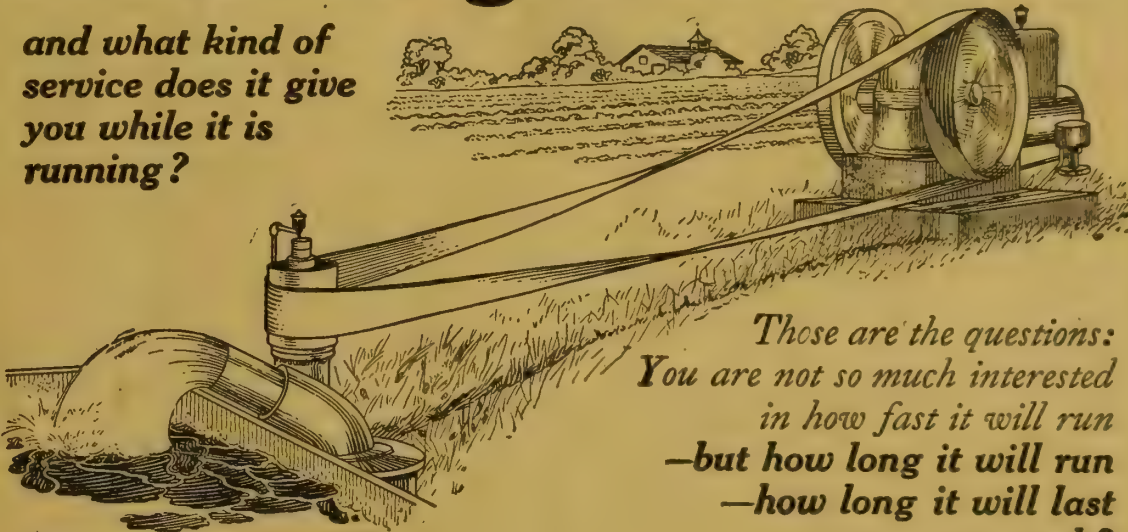
W. C. Jacobsen, superintendent of rodent control of the state commission of horticulture, reports good progress made in the educational campaigns being conducted in various localities. Valuable help has been given by the county horticultural commissioners and the farm advisers, and all organizations possible have been asked to cooperate to make the squirrel control campaign a success.

—LIBERTY BOND—

Not "Bit" but "Best"—the end is worth our "All."

# How long will it run?

and what kind of service does it give you while it is running?



Those are the questions:  
You are not so much interested  
in how fast it will run  
—but how long it will run  
—how long it will last  
on your work?

## —Test Special Belts

—last and run and do their work well for years—it depends on the kind of work. Some belt users buy cheap belts made of short fibre cotton and shoddy rubber — consequence : they last a few months—maybe not a whole season.

You can't throw money away faster than to buy that kind of a belt—besides, when it fails to do your work the need may be greatest. Buy a Test Special belt in the first place—it lasts for years. Write us.

**BELT TROUBLES:** Do you have any troubles with belts? We are belt engineers. Send us a rough drawing to indicate how your belt is operated, and tell us your troubles. We'll cheerfully help you solve them—FREE.

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519 Mission St., San Francisco —Dept 1—C  
Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

.....Station.

Horse Power	Diameter in Inches
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{ Steam Engine.....	{ Driven Pulley.....
{ Gas Engine.....	

Kind of Drive

Cross.....

Straight.....

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Kind of Machinery Driven.....

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A pocket memo. booklet giving speed and power tables will be sent FREE to all who mail this coupon.

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## YOUNG MAN IT'S UP TO YOU TO MAKE YOURSELF BUILD YOUR FUTURE SUCCESS NOW

The demand of THIS AGE is mechanical skill. PERFECT YOURSELF NOW for that BIG PAY which demand makes possible. Learn Tractoreering, Automobileing, Repairs, Ignition, Self-Starters, Acetylene Welding, Vulcanizing, Machinist Trade in Western America's Oldest, Largest and Most Reliable Mechanical Trade School. Established 1905. Over 5,000 graduates. Write today for BIG 64-PAGE CATALOG, which may mean much to you. NATIONAL AUTOMOTIVE SCHOOL, Figueroa at 8th, Los Angeles.

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

## Facts for Farmers



**P**RESIDENT WILSON, in his address at Baltimore, opening the campaign for the third liberty loan of \$3,000,000,000, answered the challenge of the German military offensive on the western front in the following words:

"Germany has once more said that force and force alone shall decide whether justice and peace shall reign in the affairs of men; whether right as America conceives it or dominion as she conceives it shall determine the destinies of mankind.

"There is, therefore, but one response possible from us: force, force to the utmost, force without stint or limit, the righteous force which shall make right the law of the world, and cast every selfish dominion in the dust."

That is straight from the shoulder American talk. It must be backed by straight from the shoulder Americans. We farmers and live stock men of the Pacific slope are that kind of Americans and we've got to square our jaws, hump our backs and put that talk over in the only language Germany understands—guns and bayonets.

There is just one way to exert "force, force to the utmost, force without stint or limit." That is by skimping and scrimping and buying liberty bonds. In uttering that eloquent phrase our commander-in-chief of the American army meant bonds, bonds to the utmost, bonds without stint or limit.

Yes, there are lots of things wrong, probably—lots of "ifs" and "buts" in this war. Maybe we aren't getting what we ought to for our wheat, our sheep, our cattle, our fruit and our everything else. Suppose we are up against it for labor; supposing we are paying double for nearly everything. That doesn't alter the fact that we've got to win this war. There will be a lot more things wrong if we don't win.

And don't get the idea that it's going to be a short war. It isn't. Use your head on this war just as you use it every day running your ranch or

range. Figure on facts. When you figure on facts you can't get away from the big facts that right now Germany is traveling faster with her armies in France than she ever did since she first started for Paris. And she has more men and bigger guns than she ever had. Look at the facts in her last drive. Never mind the newspaper headlines. You don't want hope; you want facts.

Read your newspaper like newspapermen read it in these times of military censorship. When you read that the British are going to conscript in Ireland; when you read that our draft has been speeded up; that men are flowing to France faster than they ever were, use your head and draw your own conclusion that events are crucial, that more men are needed. If they weren't needed they wouldn't be sent. Let the dreamer flirt with hope. As for yourself look facts in the face.

A lot of perfectly good paper and good ink has been wasted in a misguided effort to single the farmer out as a separate class in this war. We aren't a separate class. We are just plain Americans making our living by farming. We have no more or no less responsibility in this war than any other A-1 American citizen.

"I appeal to every man and woman who resides upon the soil of free America and enjoys the blessings of her priceless institutions to join the League of Patriots by purchasing a liberty bond," says W. G. McAdoo, plain American and secretary of the treasury. That means us.

Of course this idea of bond buying is a new one. The only newness in it is the word "bond." Buying bonds is simply putting a little money in the bank every time you get hold of it.

Face facts again. The only reason that the government is floating liberty bonds is that it needs money. It needs money because we are in a war that eats up money and men like idle mules get away with the alfalfa. You can make a bet the government wouldn't offer 4½ per cent if it didn't need the money. Buy Liberty Bonds.

## The First Year of the Federal Farm Loan System

The federal farm loan system has completed its first year of actual operation. The first charter issued to a federal land bank is dated March 1, 1917, and the charters for the other 11 were issued during that month. Borrowing under the federal farm loan system is done through national farm loan associations, and the first charter granted to one of these associations is dated March 27, 1917; so that while most of the work of organizing the banks, systematizing their business, appointing and training appraisers and the like had to be done after the end of March, 1917, it may be said that the banks have just about concluded their first year of operation. A statement of the business done during this first year is therefore of interest.

Before the system was put in operation it was argued that our American farmers would not organize for co-operative borrowing. The answer to this seems to be found in the fact that up to March 31, 1918, 2808 national farm loan associations were incorporated, representing about four associations to each five counties in

the United States. These associations average about 20 members, representing a total membership of about 56,000 farmers.

The 12 federal land banks have received applications for over 120,000 loans, amounting to about \$300,000,000. Many of these applications have been rejected, reduced or withdrawn. About 80,000 loans have been approved, amounting to over \$160,000,000, and on over 30,000 of these loans money has been paid to the farmers to the amount of about \$80,000,000. Many of the loans approved were for reduced amounts which the borrowers declined to accept.

Notwithstanding the unusual expenses incident to the operation of new machinery and to the appraisal and determination of title on many loans that have not yet been closed, the expense of the banks in doing business has been within such limits as to justify the expectation of the farm loan board that these banks will easily be able to operate on a difference of one-half of one per cent between the loaning rate and the rate which they pay on their bonds. None of the banks, of course, received any appreciable income from their business during the first half of



the year, but during the last half the business of the Spokane federal land bank, for example, was sufficiently profitable to come within about \$10,000 of wiping out the excess of expenses incurred in the first half, and the volume of business on its books assures it a handsome surplus for the second year. Every borrower, when he takes out his loan, makes a sub-

scription which increases the stock of the federal land bank to the extent of five per cent of the amount borrowed. These stock subscriptions of borrowers, in the case of several of the banks, are now so large that, in accordance with the provisions of the act, the retirement of the original stock of the banks, which was principally subscribed by the government, will begin within a few months.

## Don't Be a Welcher

Do you realize that he who lends to Uncle Sam gives manyfold to himself, and that his interest is paid in dollars, in safety, in honor, in victory, in life itself?

Do you want, in the ultimate hour of America's monumental triumph, when she has restored peace to the universe and freedom to all peoples, to say to yourself, "I did nothing to help all this"?

Do you hope for the achievement of your country's aims and promises, ideals and pledges, yet hoard a few beggarly dollars at the same time?

Do you value a cold dollar more than the hot thrill of having done a citizen's full duty; struck a blow against abysmal tyranny; backed the

lads who are fighting for you; saluted Old Glory and kicked the kaiser?

Do you still look a fat bank balance in the countenance when every true American is ready to strip himself for the world's salvation on earth?

Do you experience any emotion when the "Star Spangled Banner" is played and can possession of a few hidden currency notes give you the same grand sizzle of pride, love, courage, hope, and exaltation?

Buy another Liberty Bond and swell your American chest—you have helped make world history; you have helped make world humanity; you have helped make world glory for a glorious world saved from butchery and kultur.

## The Working Farm Manager

Written for California Cultivator By D. J. Whitney

**Y**OU can talk about the farmer, the tenant, the hired man, the hobo, and the back to the lander, but one of the most important personages in the farming business in this section of country at least, is the working farm manager, which is probably as good a name for him as can be given.

By this term is meant the man on a salary who operates a ranch in the absence of the owner, who is usually a city man who some time or other got the idea he wanted to get back to the land or to show farmers how to make money in farming, or something of the sort; and so bought some orange or olive land, had it planted, and proceeded to pay the bills while another man ran the place.

### A Neighboring Example

Not far from here is a fine young orange grove just coming into good bearing. The working manager has a farm of his own, but the owner of the orange grove will not let him leave, simply because it is too difficult to get some one else in his place. He keeps a cow and chickens, supplied by the owner; all grocery bills are paid, and the monthly salary is a good deal nearer \$100 than \$75.

This working manager states that he would pretty near die if he had to be locked up in an office, that outdoor work suits him perfectly, but you will go far and search long before you will find an office man who will have the opportunity of putting away anything like half of what this man can save.

### Requirements

A man for this kind of a job must know how to care for orange trees. Any man with a good head and a taste for farming can learn this with a moderate amount of experience. Next, he has to be conscientious and work as well when the owner is away as when he is near.

This is where scores fall by the wayside. Sure, they are honest, in their own minds, but it is very easy to let things slide along and a good deal easier to do so when another man bears the costs. So first, with lots of fellows, some things are slipped over; then they are slipped over still more, and then more yet, until the place is in such a condition that a whole lot of work and expense has to be put on it to get it back into anything like real shape.

There is a neighboring orange grove where the owner has not been so fortunate and has changed managers about a dozen times. With few exceptions the men have started in with a hurrah. They meant well, all right, and worked fine for about two weeks; then did not work quite so hard, and soon things were gliding along as if it were half vacation. So, the most important thing of all is the inner worth of a man that keeps him

up to the mark all the way along. Most men cannot make a success when they are working for themselves, and they will make far less of a success when they are working for some one else.

On a place like the one referred to, there is about \$75 a month salary with cow, chickens and garden, yet most men will not make good on it.

### Woman's Work

What is a farm without a wife? There are more than a few persons within a few miles who are trying to back and farm at the same time, but it is a poor sort of a proposition. Neither living nor farming seems to be much of a success in most cases. So, also, in working a place on a salary, a wife is as much of a necessity as when working a place for one's self.

In the first ranch noted, it takes two men to keep things going. The second man has to eat, and no man wants to work on wages and board himself, so the manager's wife has to cook for, in this case, one extra at all times. Furthermore, at certain times, such as harvest, there is work for a crew of men, and they have to be fed. The standard method on most such ranches is to allow extra when men are fed, so when extra work comes for the farm woman extra pay comes also. The responsibility of seeing that things go right rests thus on the manager's wife as well as on the manager. Conditions on most such ranches, however, are exactly what a woman would face if her husband owned the place. In one respect they are a little more troublesome, for the owner of a ranch expects to show up once in a while and he has to be fed and sometimes put up.

An important feature about the working manager proposition on a small ranch is, therefore, that the unmarried man is nearly ruled out of it. Otherwise the qualifications are: knowledge of how to get things done, moral character that will keep from getting slack, ability to get along with an employer, and the ability to handle some hired help.

With these qualifications the demand is greater than the supply, though the supply of incompetents is greater than the demand.

### How to Land a Job

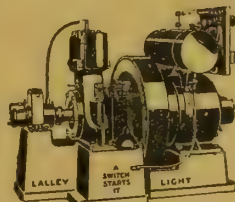
There may be requests to the writer from would-be back-to-the-landers to get them jobs like that. There is no use doing anything of the sort. No man with sense will hire an inexperienced man or one of whom he knows nothing. The only opening is to head back to a promising section of country and start in as farm hand, then with gumption and ability, to work along to the management of a small place, and then perhaps to renting, or working on shares; then to the purchase of a place, on a shoestring or otherwise.



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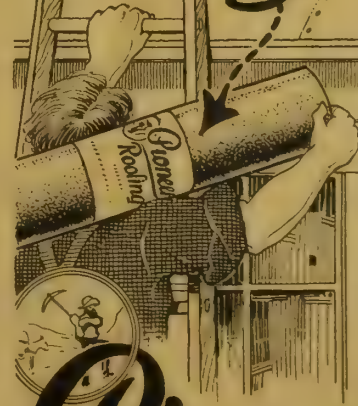
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Established 1877

Forty-first Year

## The California Cultivator

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
Combined with California Cultivator 1914.  
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Saturday April 20, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

The mammoth bronze bust of Frederick the Great, presented to this country by the kaiser and displayed in Washington, has been consigned to oblivion by order of the President. It never meant anything to this country, or if it did, it was a warning which was never heeded. On the other hand, Liberty Enlightening the World, presented to us by France, is loved more than ever and is one of the bonds between the two republics. We hope it will not be long before Liberty's arm will be lengthened and strengthened, and our forces, alongside the French and British, will stay the flood of Huns endeavoring to crush Liberty. We have used Liberty's torch on the cover of this issue because of its appeal to all true Americans. It must be kept alight. At this moment the effort to keep it alight is best advanced by the purchase of the third liberty bond issue. The country is answering nobly, and it now appears that the greatest over-subscription any bond offering ever had will be secured by this campaign. Farmers may feel that their effort is best given to the producing of crops and using of all possible means to that end, but in addition we may all have part in the liberty loan drive.

—LIBERTY BOND—

## TRACTOR WEEK

The producing interests of California will have their eyes on the University Farm at Davis this week. We feel perfectly safe in prophesying that the attendance at the demonstration will be immense and the display of tractors and tractor drawn implements will be an inspiration, especially in a year when the needs of our country appeal to all producers. We expect to pass on some of the lessons of the Davis demonstration to our readers next week.

## HONOR COUNTIES

Perhaps it is a little early to give the honor list, for it will be greatly lengthened when all of California's counties have finished their liberty loan campaign, but just for the one first week of the campaign, here are the counties which went over the top and subscribed their full quota in the first fourth of the campaign: Yojo, Monterey, Lake, Kern, Madera, Napa, Colusa, Trinity, Nevada, Stanislaus, Plumas. Some communities like Saratoga, Kerman, Johnsville, Del Rey and others are 100 per cent over.

—LIBERTY BOND—

## MORE CASTOR BEANS

The castor bean propaganda which began some weeks ago and which fell so flat because, as it now develops, it was used by unscrupulous promoters to advance selfish interests, has again been taken up by officials of the army, and the situation is now being explained to California. Although late, it is anticipated that 10,000 acres will be planted in this state within the next few weeks. The government urges that where a farmer is so situated as to produce food on his lands, such lands shall not be used in castor bean production. Five thousand acres has already been contracted for, and Henry S. Gane of Santa Barbara is pushing the campaign for the other 5000. Producers are to receive \$3.15 per 46 pounds, or \$6.85 per hundred.

—LIBERTY BOND—

## PEACE AT ANY PRICE

One of the strongest forces in the United States working for a successful conclusion of the war is the League to Enforce Peace. Its president is William Howard Taft who once remarked that he was in favor of peace at any price, and added; "The price of peace at this moment is war to a successful conclusion."

The League has now adopted as its slogan; "Win-the-war-for-permanent-peace" and; "Our object is to sustain the determination of our people to fight until Prussian militarism has been defeated."

It is either millions for defense or millions for tribute, and America's answer is being shown in the wonderful answer to the appeal to buy liberty bonds.

—LIBERTY BOND—

## IS IT NEEDED?

Why is a fish and game commission? There are times when we feel that this commission has served a purpose in preserving our wild life which adds much to the attractiveness of mountains and sea, but when it stands in the way of economical food production in times of stress such as the present, the question is pertinent, "Why this commission at this time?" Farmers are appealing for relief from the pest of rabbits, and consumers the state over are appealing for cheaper fish, the price of which has made it a luxury, even for the well-to-do. Fish should be the cheapest food on earth, and with the greatest ocean in the world on our western border let's have restrictions removed, at least sufficiently that the price of this healthful food may be brought within the reach of common folks.

—LIBERTY BOND—

## VALUE OF STATISTICS

The department of agriculture and many state agricultural institutions succeed in gathering a fund of information as to the normal production and as to the estimated production of crops, which is of immense

value to the entire country. The value of these statistics has been appreciated by many, but never as this year. The saving of a great portion of the world from starvation is made possible by knowledge of the world's shortage. There are not many years in the world's history when such value will be placed upon this knowledge as this year, but we hope especially that our own California board of agriculture will appreciate the need of some careful work along this line. The board has a competent statistician; his force should be increased and the state be given opportunity to know itself.

—LIBERTY BOND—

## THE SEASON'S CROPS

The apricot grower, and in fact every fruit grower, has a vital interest in knowing the coming season's output, and, unfortunately, it is not possible that he should know with any degree of definiteness, but he may at least know as much as the buyer with whom he has to deal. True, this question is not so vital since cooperative effort is securing more satisfactory marketing for the greater percentage of California fruit growers, but, at best, give us the facts so far as they can be determined. The Cultivator is much later in its campaign to secure this information than in former years. Some growers have felt that the season was from two weeks to a month later. Cultivator letters are out in all sections asking, and at this late season we expect a fund of information which will help everyone who has fruits to market. Some answers to our letters have already come back with indications that 100 per cent crop is possible. More next week.

—LIBERTY BOND—

## This Week's War News

The Turks are attempting to occupy Crimea.

Shipment of food supplies from the United States and Canada to the Allies during March aggregated 1,100,000 tons.

California's quota of the 150,000 men who are called to army cantonments, movement to begin April 26, is 4363. Oregon's is 293; Washington, 1593; Arizona, 470.

The Bolsheviks in Vladivostok are accused of sniping at Japs. Russians are protesting against Japanese troops remaining in that city.

It is rumored there is great activity at all naval German bases, especially at Kiel, and an important naval engagement is anticipated.

In Mesopotamia the British have been quiet along the Euphrates and have penetrated to a point 85 miles northwest of Hit, recently capturing in excess of 5000 Turks.

A British fleet of torpedo boat destroyers made a dash into the German mined zone in the North Sea and sank ten Hun mine layers and returned to the open sea without loss.

The British forces in Palestine have destroyed the Hedjaz railroad line. The raiding column has advanced over the Jordan 21 miles. The British have captured many prisoners and much war material.

In Finland the Red Guard has suffered reverses at the hands of the White Guard who are assisted by the Germans. Additional German forces are being landed, and it appears Germany will dominate in the formation of the government.

Answering the rumor that American soldiers killed in battle are stripped of their uniforms before burial,

Acting Quartermaster Goethals says: "I beg to say that there are no such rules and regulations and that such practice does not obtain."

Robert Goldstein, a Los Angeles promoter and exhibitor of a film which has been declared a violation of the espionage act, has been found guilty and is now subject to a 22 year imprisonment and heavy fine, sentence not yet pronounced.

The submarine sinkings reached the lowest level last week of any week since the submarine campaign was begun more than a year ago. The total was only four vessels of more than 1600 tons, two, less than 1600, and two fishing boats. Eleven other vessels were unsuccessfully attacked.

The present moment is witnessing America's greatest movement of troops. No announcements are made, but it is rumored that at least 150,000 Sammies are crossing the Atlantic monthly. The military needs have been so great that passenger traffic in many sections has been entirely suspended.

The mammoth collier Cyclops from a South American port coming up the Atlantic Coast has not been heard from since leaving a West Indian port, and speculation is rife as to what has become of the vessel. It was a 19,000 ton vessel and was loaded with manganese ore. She carried 293 men, several of whom were Californians.

Europe has been stirred by the revelations of the French government as to a letter from Emperor Charles proposing a separate peace in which the emperor asserts that France should retain Alsace-Lorraine and that Serbia and Belgium should be restored. This has created a situation between the Imperial German government and that of Austria which is decidedly strained. Emperor Charles denies having written the letter. Count Czernin has tendered his resignation as premier, which has been accepted by the emperor.

The response to the call for liberty loans is wonderful. Literally thousands of the towns of the country are already over the top with more than their quota. In the 12th district (Pacific and mountain states) alone nearly 200 towns and counties are entitled to the honor flag. Eleven California counties went over the top the first week of the campaign. San Francisco and Los Angeles are making a fine campaign. Los Angeles promises to go over the top long before the 30 day campaign ends. Some of these counties are entitled to special honors because of 100 per cent increase over their quota.

The world's greatest tragedy is still being enacted in northern France. The force of the enemy's drive has been diverted from Amiens far to the north, and the aim now seems to be to drive the Belgians and British entirely from Belgian territory and capture Calais. The most important point yet captured is Ypres. This point is a railway center and distributing point for the British forces. Every day shows a slight yielding on the part of the British lines, and at this writing (Wednesday) it appears that the Messines Ridge, which has been one of the strongest fortified positions the British forces have held, may be forced to give way. The American army appears to be taking part in the battle, but only in connection with the British and French armies. As the pressure has been lifted from the southern end of the line, the French have made counter attacks and retaken some valuable ground. South of Verdun the line has been inactive.



# Agricultural News Notes of the Pacific Coast

## Northern California

Have you an honor flag?

Meridian, Sutter County, reports activity in sugar beet planting.

Sutter County council of defense reports many purchases of war savings stamps by Hindus.

A state highway is to be constructed from Lake County into Sonoma through Railroad Gap.

The cannery at Oroville hopes to double its output of canned tomatoes during the coming summer.

A Williams farmer recently sold 1800 bags of barley, at \$3.80 1/4 per hundred, which was record price.

A complete farm labor and farm production survey of Nevada County has been made by volunteer enumerators.

Farmers at Ord, Glenn County, have applied for permission to incorporate a cooperative grain elevator company.

Prune growers around Cloverdale, Sonoma County, are being appealed to to stand by the Prune and Apricot Growers' Association.

A farm center has been organized at Guerneville, Sonoma County. The packing house at Grafton, Sonoma County, is being enlarged.

James Mills Orchard Corporation is now making a planting of five acres of jujubes and five acres of assorted persimmons for commercial purposes.

The irrigation system of the Anderson-Cottonwood irrigation district is nearly completed. One flume connected with this system has cost \$40,000.

Ladybugs are being forwarded by the state insectary to aphids infested points at the rate of about 150 quarts daily. Most of the shipments go to the Imperial.

Practically all of the asparagus canneries along the river are in operation. The wholesale market is running between four and eight cents according to quality.

Butte County reports record price on paddy rice, namely five cents per pound secured last week by the Pacific Rice Growers' Association. All warehouses are now empty.

Early April frost did serious damage to early potatoes and some vegetables in Butte County. Smudging is reported to have saved many an orchard which was heavy with bloom.

California Ripe Olive Company at Oroville, Butte County, is engaged in canning asparagus and other vegetables. This concern will soon be in operation 12 months of the year.

California produced in 1917 on 82,000 acres 280,000,000 pounds of rice, and it is estimated that the state will produce this year more than 400,000,000 pounds. The state is now producing more than one-sixth of the rice of the entire country.

The concrete merchant vessel, Faith, recently launched at a Pacific port, is to be given its trial trip on May day. It is seldom that a vessel of such tonnage has been constructed in such marvellously short time.

The United States food administration is calling a series of meetings of cattlemen throughout the northern end of the state. They are invited to cooperate with the forest service and the California Cattlemen's Association. A meeting was held at Oroville on the 16th.

Have you an honor flag?

## Central California

Have you an honor flag?

Kern County has 277 miles of improved highway.

Crows Landing oversubscribed and gets the honor flag.

Turlock, Stanislaus County, is to have a peach packing house.

Many large silos are being erected at Gilroy, San Benito County.

Woodlake, Tulare County, is shipping grapefruit of high quality.

Kings County bee keepers are organizing a county association.

Tulare County's output of Valencias will aggregate \$300,000 value.

Kern County's farm bureau is now conducting a silo-sorghum campaign.

Tulare County is going on the card system for distribution of wheat flour.

The Turlock cannery expects to handle between 1300 and 1400 tons of peaches.

The value of Tulare County's exports of foodstuffs for 1917 exceeded \$20,000,000.

The directors of the Turlock irrigation district are planning a drainage system.

Kingsburg, Fresno County, will have a 50 by 80 cannery exclusively for peaches.

Beekeepers of Kings County recently met at Hanford and discussed disease control.

Fresno County estimates that she will plant at least 2000 acres of long staple cotton.

Porterville, Tulare County is packing its Valencias. The output will be about 150 cars.

Oakdale, Stanislaus County, will plant 1500 acres to rice. Growers are being guaranteed \$4.10.

Many California towns have already gone over the top and are entitled to the honor flag.

Milo, Gyp and other kinds of substitute flour are being sold in practically all markets of the state.

The Milk Producers' Association of Central California recently convened in Modesto, Guy Miller presiding.

The California Peach Company, Inc., has decided to spend \$50,000 in advertising the coming season's output.

A band of sharpshooters at Hanford is using jack rabbits for targets, and the members recently returned with 200.

A road extending westward from Modesto to the San Joaquin is to be greatly improved, and new bridges will be built.

Prune growers who are profiteering at the expense of the association members are not in good form with loyal fruit growers.

Stanislaus County farm bureaus are appealing for a revision of grain prices which will put barley and other grains on a basis of equality with wheat.

The San Jose Grange of Husbandry goes on record "as opposed to the many frivolous amusements and extravagances now practiced by the public."

An expert in cotton culture and connected with the department of agriculture, is in the San Joaquin Valley giving advice to prospective cotton planters.

Have you an honor flag?

## Southern California

Have you an honor flag?

San Bernardino County is fighting the squirrel pest.

Coachella Valley, Imperial County, is marketing string beans.

There are 163 acres of bearing almonds in Ventura County.

Redlands is giving out packages of free seeds to home gardeners.

One cantaloupe grower in Imperial Valley has over 1000 acres.

Riverside County has organized a branch of the California Alfalfa growers.

The Oxnard center of the Ventura County farm bureau is discussing crop rotation.

Farm Adviser Paschall of Riverside County reports fruit outlook at Hemet exceptionally good.

El Cajon Valley, San Diego County, is offering prizes for the best squirrel catching school.

Victor Valley, San Bernardino County, is planting extensively to table and raisin grapes.

Some San Diego County ranchers are complaining because of depredations by mountain lions.

The annual farm bureau picnic of Riverside County will be held at Fairmount Park, Riverside, May 11.

Over 350 hogs have been signed up for the fat hog auction which takes place at El Centro this week.

The Yucaipa Apple Growers' Association now has over 80 per cent of the growers of the valley in its membership.

The Orange County Produce Growers marketed 32,836 lugs of tomatoes between the end of September and January 15.

Ventura County has an output of about 2700 tons of dried apricots, besides about 1074 tons of green fruit shipped out.

Directors for Ventura County fair association have been elected and will meet on Saturday of this week to select officers.

The campaign for deep well water supplies at Victor Valley, San Bernardino County, is resulting in several fine wells being developed.

The San Fernando Valley tractor school attracted many pupils, several being women who are perfecting themselves in tractor driving.

Silos are springing up everywhere, and it is expected that by the close of the present season Imperial Valley will claim 400 or more silos.

A seed survey of Riverside County has been made by its farm bureau. The farm bureau monthly has issued a list of seeds held by farmers and for sale.

"Riverside County is planning for the best fair in its history" is the claim of the farm bureau which is aiding in the campaign for next fall's event.

Large quantities of sweet sorghums are being planted in the Imperial Valley, this year. Peter Bartmus of Calipatria will plant 160 acres for forage purposes.

Hemet business men are building suitable quarters for workers in canneries and dry yards, who will be required for the coming season's pack of apricots.

Have you an honor flag?

## The Coast and General

Have you an honor flag?

Idaho has made an appropriation for its coming state fair.

The principal crops of Algeria, Africa, are wheat, barley and oats.

Sheep raising industry is being greatly extended in eastern Oregon.

Utah experiment station is encouraging a campaign against squirrels.

The farm bureau movement is growing every day in Arizona.

Melon distributors of the Middle West meet this week at Evansville, Indiana.

Walnut growers of Yamhill, Oregon, have organized a cooperative marketing association.

Vancouver, Washington, has a kiln drying plant which will handle 10,000,000 feet of spruce a month.

A 50 ton per day capacity starch factory has been erected in the potato district of Beaverton, Oregon.

District Forester Cecil of Washington is making a campaign against the serious fire losses of that state.

Practically all large markets of the East are now receiving large quantities of Southern grown vegetables.

Boys and girls clubs of Arizona held 137 meetings last month. New clubs organized during the month, 45.

The Great Northern Railway is boosting war garden work along its right of way in the state of Washington.

"Corn meal and other wheat substitutes must come down in price," is the demand of the public in all sections.

The seventh annual Oregon irrigation congress recently met and elected Jay Upton of Prineville, president.

A bank at Coquille, Oregon, is advancing money to boys who are members of pig clubs, at the rate of six per cent.

One whaling company at Bay City, Washington, is shipping frozen whale meat to nearly all sections of the United States.

Texas peach growers are contracting to deliver Elbertas on board cars at 75 cents per bushel, the buyers to furnish baskets.

The government is investigating wool prices, and it is declared that it will take a hand in controlling its use and future price.

Irrigators of the Northwest say that the mountains are well supplied with snow and a good irrigation season is promised.

The potato market at Seattle, Washington, which has been depressed for several weeks, is showing much better conditions.

Sheepmen at Boise, Idaho, are paying 12 and 12 1/2 cents per head for shearing and with an additional allowance to men who board themselves.

The post office department is now accepting women mail carriers and the first examination for women eligible to these positions will be held on April 27.

Consumers are appealing for government restriction on manufacturer's profits on cotton goods. Many garments are now costing three times pre-war prices.

Have you an honor flag?



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Established 1888

Wholesale Growers of  
**High-Grade  
Nursery Stock**

DECIDUOUS AND CITRUS  
FRUITS

OLIVES AND GRAPE VINES  
SHADE AND ORNAMENTAL  
TREES

Twenty-nine years of continuous  
and consistent service to the West-  
ern fruit growers.

There is a shortage of trees this  
year. To make sure of getting just  
what you want, place your order  
now.

Address Main Office

**2522 Tulare Street  
Fresno, Cal.**

# GARBAGE TANKAGE

9 Units Nitrogen  
7½ Units Phosphoric Acid  
3 Units Potash

All for \$60.00 f. o. b.  
Los Angeles

Write for Free Fertilizer Booklet C

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FERTILIZER CO., INC.**

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Is cheap, durable and  
quickly put on the tree.  
It prevents rabbits from  
destroying your trees. A  
sure protection against  
frost, sunburn, grass-  
hoppers, or dry winds.  
Can be easily removed,  
will last for years. Send  
for samples.

## Prices

	Per 1000
10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.00
18 in. long, 7 in. wide....	14.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

**Yucca Manufacturing Co.**  
1380 Willow Street, Los Angeles, Cal.

At the bottom of your letter to advertisers just say  
"California Cultivator" and prompt reply is assured.

## Carbon Bisulphide as a Fumigant



**A**N ORGAN devoted to fire in-  
surance interests is com-  
plaining because farm pa-  
pers recommend fumigation  
of beans and seeds with car-  
bon bisulphide which is an extremely  
inflammable gas and there is some-  
times carelessness in its use. The  
same objection can be raised as to  
the use of dynamite or gasoline or  
many other agents which are most  
beneficial in farming operations.  
Farmers must be careful in handling  
any of these deadly chemicals. They  
must also produce clean seed and  
clean beans if they will farm at a  
profit.

When one takes charge of dynamit-  
ing operations it is presumed he  
knows the deadly nature of the agent  
he is using. With carbon bisulphide,  
every farmer understands that it is  
not only inflammable but extremely  
explosive when the fumes are mixed  
with air. No lantern or fire must be  
brought near it; neither may it be in-  
haled without injury. This is also  
true of hydrocyanic acid gas which,  
while not explosive, has been the  
cause of deaths to humans in the or-  
chards of California, and this because  
of momentary thoughtlessness.

In using carbon bisulphide bear in  
mind that it is much heavier than air.  
Place it over the grain in the bin in  
shallow pans or containers, and as the  
gas fumes rise they will settle through  
the stored grain. If there are 100  
cubic feet of space in the bin use  
about three pounds of the liquid bi-  
sulphide, or four pounds will treat  
about 100 bushels of grain. The best

results are secured at about 70 de-  
grees Fahrenheit. Before distribut-  
ing the bisulphide all cracks should  
be made gas tight, and as soon as  
distributed the door should be closed  
and its cracks caulked. Leave expos-  
ed to these fumes about 24 to 36  
hours. Permit no lantern near it  
when doors are open and allow to  
air out for some time before human  
beings enter.

Regarding the quantity of bisul-  
phide to use Mr. Swain of the entomol-  
ogical division of the university sta-  
tion at Riverside writes:

"That a dose of less than three  
pints of bisulphide to each 100 cubic  
feet of space is not efficient was  
learned through conversation with Dr.  
H. B. Frost of the plant breeding de-  
partment. Personally I have no di-  
rect information along that line, but  
Dr. Frost has done more or less fumi-  
gation in connection with his work on  
the breeding of varieties of beans,  
and he finds it true that at least three  
pints to each 100 cubic feet of space  
is necessary to obtain a good killing.  
This he claims will not kill every wee-  
vil or egg, but if a stronger dose is  
used the germinating power is apt to  
be seriously impaired. For beans for  
consumption, however, a stronger  
dose, say of four pints to each 100  
feet, can be used."

Fumigation of stored grains is  
treated very fully in a leaflet issued  
by the agricultural experiment sta-  
tion, University of California, Berke-  
ley, "Fumigation of Stored Grain,  
Dried Fruits and Other Products" by  
E. R. de Ong.

## Weekly Report on Condition of Truck Crops

By United States Department of Agriculture, Bureau of Estimates,  
San Francisco

Condition of truck crops for the  
week ending April 6, 1918:

### Southern California

Cantaloupes are making an excel-  
lent growth of foliage and are setting  
well. Reports continue to predict an  
early season for shipments, and a  
heavy yield per acre.

Asparagus. The situation is report-  
ed satisfactory with shipments in-  
creasing and the season much the  
same as last year. Shipping will  
probably continue three weeks longer.

Potatoes have been planted very  
heavily the past two weeks. Present  
indications are that the acreage will  
be normal, though not as large as  
last year's, which totaled 15,000  
acres for the southern portion of the  
state. The first car was rolled last  
year May 10, but the main plantings  
did not mature until June, July and  
August. While the general planting  
is about three weeks late, the crop is  
now growing very rapidly and carlots  
are expected from Orange County the  
first part of June and from Los An-  
geles County the latter part of June.

Cabbage is the principal vegetable  
shipping from Los Angeles and Or-  
ange Counties, but shipments will be  
much heavier the last of the month.

Peas. Shipments to Eastern mar-  
kets have stopped for the season.

Lettuce continues to be poor in  
quality and the supply is small. Plant-  
ings for spring shipments are also  
short.

Celery seedbeds are starting well,  
but estimates of acreage which grow-  
ers intend planting are much shorter

than last year's. Celery for mixed  
cars is going out of cold storage.

Tomatoes. Preparations are being  
made for planting a larger acreage  
than last year. Some damage has been  
done to seedbeds by flea beetles.

The condition of truck crops is re-  
ported as follows for this week and  
the week ending March 30, respective-  
ly: Asparagus, 89 per cent, 90 per  
cent; cabbage 65 per cent, 65 per  
cent, 65 per cent; cantaloupes 92 per  
cent, 92 per cent; cucumbers 89 per  
cent, 88 per cent; lettuce 65 per cent,  
65 per cent; onions 95 per cent, 75  
per cent; potatoes 92 per cent, 91 per  
cent; strawberries 84 per cent, 84 per  
cent; tomatoes 83 per cent, 83 per  
cent; watermelons 90 per cent, 91 per  
cent.

### Central California

Asparagus came on so rapidly the  
early part of week that the labor sup-  
ply was inadequate to handle the  
large supplies and large losses of the  
product resulted.

Weather turned cold on the second  
and subsequent frosts have destroyed  
all green grass above the ground.  
Shipments are expected to be resum-  
ed about the eighth. Canneries opened  
this year on scheduled time: April 1.

Artichokes are being shipped East  
at the rate of about ten cars per day.  
Present indications are that supplies  
will continue through May and ship-  
ments will proceed if transportation  
and markets are satisfactory.

Rhubarb shipments to Eastern mar-  
kets have been discontinued, closing  
a very short shipping season.

# 1918 Catalog

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FOR

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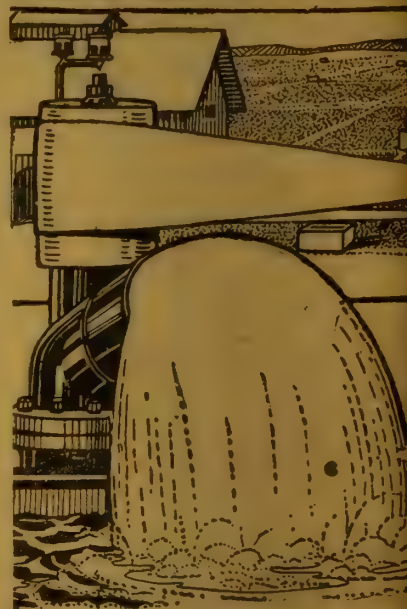
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**We Pay the Freight**



## Layne & Bowler Turbine Centrifugal PUMPS

have capacities ranging from  
180 to 4500 gallons per minute.  
Our catalogue No. 30 gives full  
information.

**Layne & Bowler Corporation**  
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## PIPE-PIPE

100,000 feet New and Second-hand Pipe and  
Casing.  
Pipe—½, ¾, 1, 1½, 2, 2½, 3, 3½, 4, 4½,  
5, 6, 7, 8, 9, 10, 11, 12, 15 inch.  
Casing—3, 3½, 3¾, 4, 4½, 4¾, 5, 5½, 6, 8,  
10, 11, 12, 14 inch; 2000 feet 6½-inch 20-lb. ten  
thread.  
Riveted Pipe—4, 5, 6, 8, 10, 12, 14, 16, 18 inch.  
All above pipe and casing is practically as good  
as new, with good threads and couplings on  
each joint. We also carry valves and fittings,  
gumps, engines, boilers and rail. See our stock  
and get prices before buying elsewhere.

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nia Cultivator will convince you that their articles  
will save you money.



Potatoes are reported slightly damaged from frost. An increased acreage in the Colma districts will produce the first potatoes for shipment. Sacramento started shipping in carlots last year the first week in June.

Cantaloupes. A special reporter states that frost destroyed 25 per cent of the cantaloupes at Turlock on April 4. Soil conditions are favorable and planting is proceeding, but is said to be 15 days later than last year.

Spinach canning is in full blast and the large crop has taxed the canners' ability to handle the product.

Strawberries. No frost damage of consequence is reported, but it is not expected that the crop will equal last year's record production. It is estimated that 30 to 35 per cent will go to canneries.

The condition of truck crops is reported as follows for this week and the week ending March 30, respectively: Asparagus 87 per cent, 87 per cent; artichokes 70 per cent, 72 per cent; cabbage 90, per cent, 90 per cent; lettuce 90 per cent, 90 per cent; onions 92 per cent, 92 per cent; potatoes 76 per cent, 78 per cent; strawberries 89 per cent, 89 per cent.

—LIBERTY BOND—

**WAR GARDEN BOOK**

"War Vegetable Gardening and Home Storage of Vegetables" is the name of a 32 page booklet filled with valuable information for the war gardener. It is in two parts, Part I, War Gardening Manual, and Part II, Home Storage Manual. It is published by the National War Gardening Committee, Merrill Building, Washington, D. C. Copy of this manual may be obtained upon request to the committee.

# Cutting Gladiolus Bloom

By H. E. Meader in The Flower Grower

Of four different lots of Gladiolus America the first lot was cut with no foliage left on the plant with the exception of the two bottom leaves, the second lot with four leaves, and the third with six. On the fourth lot no flowers were cut, as no buds were allowed to form.

When the bulbs were dug, those with two leaves were very poor, in no case was the new bulb larger than the old one and in most instances the plant had died before maturing. There were very few bulblets.

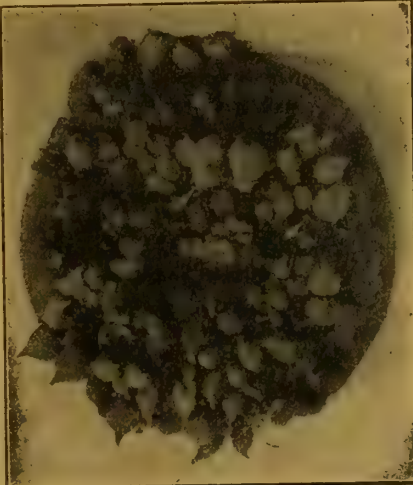
Those with four leaves were very good and seemed well ripened and of normal size, with a good yield of bulblets.

Those with six leaves perhaps averaged a little higher quality, and slightly larger but not a great deal.

The fourth lot were in no way better than the third.

This proved to my satisfaction that no less than four leaves should be left on the plant for best results. However, in most cases the flower stem

Insert the knife with edge pointing down at "1" following down the leaf to "2," turn the edge against the



Corm of Gladiolus

Large corm showing method of reproduction by use of little corms formed each year around mother corm.

flower stem and cut same not quite through.

The stem may be bent sharply towards the cut and will snap off and pull out of the leaf socket, making a neatly finished job and allowing the greatest possible length of stem.

—LIBERTY BOND—

## THE SQUIRREL CAMPAIGN

As an inducement to the schools of the state to enter into the spirit of conservation and aid in the squirrel campaign, State Horticultural Commissioner Hecke is offering prizes to high and grammar schools.

The sum of \$100 is to be divided among the high schools as follows: \$50 first prize; \$30 second, \$20 third. Grammar schools: \$50 first prize; \$30 second prize and \$20 third.

In addition to these prizes the chambers of commerce and other commercial bodies in the respective counties of the state will offer additional prizes which, put together, will amount to a considerable sum.

—LIBERTY BOND—

## TOMMY'S HARD LUCK

Tommy came crying out of a room in which his father was tacking down carpet.

"Why, Tommy, what's the matter?" asked his mother.

"P-p-papa hit his finger with the hammer," sobbed Tommy.

"Well, you needn't cry at a thing like that," comforted his mother.

"Why didn't you laugh?"

"I did," sobbed Tommy, disconsolately.—Kirsch Sales Booster.



Method of Cutting Gladiolus Blossom Stalk

should be plenty long enough, if cut to leave five or six leaves.

I have taken the liberty of explaining my way of cutting as it allows two or three more inches of flower stem without taking an extra leaf than the method of cutting sometimes advocated.



**A Size for Every Engine and Motor**

Piston rings prevent escape of gas and power. They must fit exactly or there is compression leakage, excessive carbon, and power loss. The scientific construction of

**McQUAY-NORRIS LEAK-PROOF PISTON RINGS**

assures equal pressure all around the cylinder walls. They are made in all sizes to fit every model and type of engine, automobile, tractor, etc.—every size accurately gauged to fit the particular model of motor.

Your local dealer or garage has—or can get—our data book of piston ring sizes of practically every engine and motor made. This will tell exactly what rings you need. Complete size assortments are carried by more than 300 jobbing and supply houses all over the country from which you can be quickly supplied. Over 2,000 unusual sizes and oversizes—all widths and diameters—are kept constantly on hand at the factory ready for prompt shipment anywhere.

**McQUAY-NORRIS Superoyl RINGS**

A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris **LEAK-PROOF** Rings in lower grooves to insure maximum compression and fuel economy.

SEND FOR FREE BOOKLET "To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.

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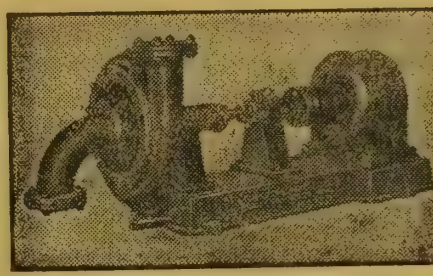
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**No End Thrust Possible**

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**No Set Collars Used**  
**THE NO TROUBLE PUMP**




**Krogh Direct Motor Driven Pump**

**Fitted with Ring Oil-ing Bearings**

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We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.



AWARDED GOLD MEDAL



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Where in Western Canada you can buy at from \$15. to \$30. per acre good farm land that will raise 20 to 45 bushels to the acre of \$2. wheat—it's easy to figure the profits. Many Western Canadian farmers (scores of them from the U. S.) have paid for their land from a single crop. Such an opportunity for 100% profit on labor and investment is worth investigation.

Canada extends to you a hearty invitation to settle on her

**FREE Homestead Lands of 160 Acres Each**

or secure some of the low priced lands in Manitoba, Saskatchewan or Alberta. Think what you can make with wheat at \$2. a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed Farming and cattle raising. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature and particulars as to reduced railway rates to Supt. Immigration, Ottawa, Canada, or to

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# THORNLESS Blackberry

Free from thorns as a grape vine. Fruit of enormous size, delicious flavor, few seeds, very productive, earliest berry to ripen. Our descriptive price list tells you all about it. Send for it.

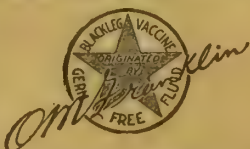
**Ekstein Nurseries**

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This seal is our word of honor and your protection. If it is not on the label of every bottle don't use it. Only the original carries this signature.



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Los Angeles, Cal. The Kansas Blackleg Serum Co.**

**Made by Dr. O. M. Franklin, Originator**  
Holds the record of immunizing more than a Half Million Calves against Blackleg with

— only one handling of each calf — has stood the test of time—easy and safe to use—cannot give the disease to calves or spread it in pastures.

Leading cattlemen use it exclusively and recommend it to their friends—ask any of them or write to the nearest office for references and free Booklet on Blackleg.

## Big Meeting of Big Cattle Men

Written for California Cultivator By C. A. Briggs



THE California Range Cattlemen's conference at Davis, April 8 and 9 was largely attended. Many able papers and addresses along the line of the need of better feeding methods and improved marketing conditions, together with the all important foundation of better cattle, made every session of value.

On the evening of the 9th the Pacific Coast Hereford Cattle Breeders' Association held a banquet, and every one got into a good condition for the first annual sale on the 10th. The officers elected for the ensuing year were those of last year: President, H. H. Gable of Esparto; vice president, W. D. Duke of Likely; secretary-treasurer, W. R. Madden of Dixon.

Sale day brought a goodly crowd with brisk bidding the special feature,

Fred Reppert of Decatur, Indiana, acted as auctioneer, Ord L. Leachman of Orland and Frank Hatch of Modesto assisting as ring men.

Forty-five head of registered Herefords were sold at an average price of \$350 per head. The top animal was a fine bull, Reuben 645572, bred and consigned to the sale by J. H. Cazler & Sons of Wells, Nevada, sold to W. D. Duke of Likely for \$1350. Buyers were present from a number of states, ex-Governor Packard of Arizona being one of the purchasers. As a first annual sale it was an unqualified success and placed a fine lot of animals in the hands of the stock men of the state.

The consignors to the sale were Cazler & Sons, Wells, Nevada; D. O. Lively, San Francisco; H. H. Gable, Esparto; W. D. Duke, Likely; W. J. Bemmerly, Woodland, and the Simon Newman Company, Newman.

## The Hereford Sale

Written for California Cultivator By W. D. Johnston

The total for the 46 head sold was \$16,215. The average price for the whole lot was \$351 with the bulls averaging \$352 and the cows \$350.

The most consistent buyer at the sale was S. R. Crowe, Hayward, who purchased 11 head, paying \$2640 for the lot.

The largest consigner to the sale was W. J. Bemmerly, Woodland, who sent 14 lots.

### Red Cross Donations

The Hereford bull calf, Our Folly,

which was donated for the benefit of the Red Cross, brought \$512.

The calf was donated by W. D. Duke, a Hereford breeder from Likely. The selling of this calf was one of the features of the sale. Dr. DeWitt, who is president of the American Hereford Breeders' Association, was the first buyer. He paid \$260 for the animal and then turned it back for auction again. The next buyer was H. T. Liliencrantz of Hollister, and he bought the calf for \$200. Donations from other breeders brought the total for the Red Cross benefit up to \$512.

## First Spring Sale of Shorthorns

Written for California Cultivator By C. A. Briggs

On April 11 in San Francisco the California Shorthorn Breeders' Association held a most successful sale of 63 registered Shorthorns from 11 herds, Fred Reppert, Decatur, Indiana, acting as auctioneer with Ord L. Leachman of Orland and Frank Hatch of Modesto assisting in the sales ring. Consignors were: Alexander & Kellogg, Suisun; Wm. Bond, Newark; W. M. Carruthers, Mayfield; H. M. Elberg, Woodland; A. W. Foster, Hopland; T. S. Glide, Davis; London Estate, Glen Ellen; Ormondale Company, Redwood City; Pacheco Cattle Company, Hollister; Paicines

Ranch Company, Paicines; and the University Farm.

The offerings were of very high quality, prices good and bidding went without a drag. A strong feature of the sale was that no consignor bid on the stock sold, all the animals going into the herds of other stock men. The average price on 29 females was \$476; on 34 males, \$307; total average, \$391.50. Top price went to W. M. Carruthers of Mayfield, three cows in his consignment going for \$1200, \$1450 and \$1500 and a bull which was the highest priced animal in the sale going for \$2000.

## Field Notes from the Live Stock Men

One of the most disastrous accidents that has happened to the Hampshire breed occurred at the Llano Vista Rancho last week when Sioux Queen, the famous old grand champion sow at the San Francisco world's fair, died. She had just farrowed a fine litter of pigs, 17 perfect belts, which were by Langdon's Choice, an excellent Hampshire boar. They have many other fine prize winning animals left in their herd, including the first and second prize winners at San Francisco, and many others of equal merit. They also have about 250 spring pigs.

Roy Dawson of Gardena has a splendid junior yearling Hampshire boar that is siring some extra fancy pigs. It is time well spent to visit his ranch.

F. L. Hall, the pioneer Berkshire

breeder of Perris, has added some excellent mature sows to his already famous herd. Mr. Hall is fitting a splendid herd for the Los Angeles Liberty Show.

Tom Blodger of Gardena has two fancy boars by Director, which has recently been placed at the head of the Denker herd at Sagus. He was a winner at the world's fair at San Francisco.

Chas. Shattuck, a well known architect, and also breeder of Jersey cattle, of Los Angeles, has branched out into the pure bred hog business, having recently bought some of the best sows to be obtained at the Conejo Ranch. He purchased two under year sows and two junior yearling sows bred to Duke's Allen, grand champion boar at Sacramento. Duke's Allen is directly related to E. N. Manley's

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He Cost Me \$500

Uneeda King The Col

**DUROC JERSEYS**

Sired by that great boar, King the Col. 39533 ("The King is dead") a brother Algo's Giant was Junior Champion at National Swine Show. King of the Col. sired more 1000 pound boars and 800 pound sows than any other boar in the world. I am breeding his son, Uneeda King the Col. to my best sows.

GET ONE OF HIS PIGS

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Willows, California

## A Sale of Extraordinary Character 150 REGISTERED HOLSTEINS

Sacramento, June 5-6, 1918

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Machinery and Repairs: Baker, Hamilton & Pacific Co., San Francisco; Dixon & Griswold, Los Angeles.

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. F. I. E.

513 Hearst Building  
San Francisco

CARRUTHERS FARMS  
Mayfield, Cal.

When writing advertisers, mention The Cultivator.



April 20, 1918

\$5000 Senator, grand champion at Omaha.

Ex-Vice-President Fairbanks has just recently purchased a full herd of Hampshires from the Llano Vista Rancho. His herd boar is by Langdon's Choice and out of Sioux Queen, and his sows are from very prominent families of the breed.

Clayton N. Slocum of H. P. Slocum & Sons of Willows, reports 78 inquiries for sows in the last 30 days. He is much pleased with his advertising in the Cultivator. The \$1000 sow, Model Lena 294004, which Mr. Slocum brought out in his last importation from the East, farrowed 11 fine pigs, and two of the boar pigs are spoken for already.

Butte City Ranch, Butte City, breeders of Berkshire hogs, has offered a silver trophy cup for Duroc-Jersey swine to be shown at the Glenn County fair at Orland, September 16-21, 1918. The breeders of registered swine of all breeds in Glenn County work in the closest harmony. All are interested in better hogs and there is none of the hard feeling that is sometimes manifested.

Hogs to the value of \$18,000 were sold at auction at Porterville and direct to packers who were called to the sale by the large offering of strictly first class stock. One report is that the farmers benefited by the plan to the extent of at least \$900 over prices which might have been received under old method of marketing. There were nine cars in the lot, two of which, purchased by Los Angeles buyers, netted the producer \$17.05 per hundred. The auction method is proving a winner.

The exhibit of sheep at the Ft. Worth fat stock show was the largest ever made in Texas. The grand champion wether sold for 25 cents per pound, and the grand champion car of lambs sold at \$18.50 each, the top for the day.

Clydesdales are selling at unheard of prices in Scotland. A four year old gelding recently sold at auction at \$1000 and a three year old filly, at \$5145.

The bureau of animal industry has quarantined the counties of Mendocino, Sonoma, San Joaquin, Stanis-

laus, Fresno, Merced, Madera, Tulare, Kings and Kern in this state because of sheep scab. Several counties in Texas, Louisiana, and other states are under the same quarantine.

The Milking Shorthorn is increasing in popularity in all portions of England and some most satisfactory sales of the milking strain have been made in this country.

At the sale of the Central Shorthorn Breeders' Association in Kansas

City early this month 191 head averaged \$282. One hundred and sixteen bulls averaged \$227, and the females, \$369.

The sale of 107 Herefords at Hutchinson, Kansas, by the Bowman Company netted \$33,485, an average of nearly \$315.

A recent sale of pure bred drafters in Chicago netted only \$330 each. Values ranged from \$50 to \$775. They were Percherons, Shires, Clydes and Belgians.

## Treatment for Worms in Hogs

The popular opinion that soda lye possesses preventive and remedial properties against worms and other intestinal parasites has, by a recent experiment carried out by the United States department of agriculture, been proven false. Hogs were fed soda lye for a period of two and one-half months and according to the report the extent of infestations increased during the course of the experiment.

The department further points out that since soda lye has no effect on parasites in the comparatively simple digestive tract of hogs, in the complex alimentary canal of cattle and sheep its opportunity to influence parasites is further lessened.

A safe and effective hog tonic and worm remedy is offered by the University of Missouri college of agriculture: Sal soda, three pounds; Glauber's salts, three pounds; copers, three pounds; sulphur, one pound; charcoal, four pounds; and common salt, three pounds.

Mix thoroughly and keep in a trough in a conveniently dry place. When the herd is seriously infested with worms it is well to use santonin six

grains, calomel four grains, per hundred pounds weight of hog. Feed in a thin slop after hogs have had no food for a day or two.

In the event that santonin cannot be obtained, satisfactory results may be expected from finely powdered copper sulphate, at the rate of a level teaspoonful to the hundred pounds weight of hogs, given in the manner recommended for the use of the santonin and calomel.

It is advisable to confine the hogs for a period of two days following the administration of the drug, in rather limited quarters apart from the regular hog lots. After the hogs are released from the pen the live worms and eggs expelled by the treatment may be destroyed by a strong stock dip solution or a coating of freshly slacked lime to prevent reinfestation.

It is a good practice to plow the hog lots and sow to rape or other forage crop at least once during the season. An abundance of wholesome forage is thus procured and the fresh soil surface furnishes conditions almost equal in cleanliness to that of a new hog lot.

## Calf Clubs

One of the most important movements in improved stock husbandry is that of organizing boys or boys and girls calf clubs. These clubs, usually limited to a local community, have accomplished wonderful results in the way of stimulating interest in live stock improvement. As a rule some enterprising bank in a community assumes the responsibility of organizing the club and advances the money for the purchase of the calves. When the calves are assembled they are appraised by breeders of experience and distributed among the members of the club by lot.

As a rule a sale to which all of these calves are consigned is set for a date from six to 12 months following the beginning of the contest. Every member of the club takes personal care of his or her calf, and when sold the difference between the purchase price, plus interest, and the selling price becomes the gross profit of the club member. We have one instance in mind where registered Shorthorn calves were used where the average gross profit on the entire offering was a little over 100 per cent.

One Illinois bank has adopted a three-year plan, and instead of buying calves, bred heifers are secured, and

at the end of the three-year period the produce from these heifers is to be offered. This places the operations on a breeding basis and will give the club members a practical experience that could not be obtained upon a short period plan. It makes practical breeders of them and insures to them a much larger margin of profit.

The American Shorthorn Breeders' Association and various state Shorthorn breeders' associations are cooperating extensively with banks and county agents in organizing these calf clubs, and through their efforts registered calves have been selected almost without exception.

—LIBERTY BOND—

### CONSERVING SHEEP

The University of California farm at Davis is conducting an experiment which may enable California to add considerably to the production of meat and wool, two commodities greatly needed by the nation. The object of this experiment is to determine the cost of producing one more crop of lambs from ewes too old or "mouth-broken" to withstand another winter on the open range. Such ewes can generally be purchased at a reasonable price by the farmer and by proper care and the utilization of waste feed made to produce very cheaply a final crop of lambs before being sold to the butcher.

Prof. R. F. Miller who has charge of sheep affairs at the University Farm at Davis says that within the last two weeks he has had over 50 letters asking for Circular No. 184 entitled "A Flock of Sheep on the Farm." Also many are asking what to do with orphan lambs.

## Our Country Needs Livestock and Poultry



## Kreso Dip No. 1

for  
FARM SANITATION

will keep Livestock and Poultry healthy.

## KRESO DIP No. 1

EASY TO USE.  
EFFICIENT. ECONOMICAL.

Kills Sheep Ticks, Lice and Mites;  
Helps Heal Cuts, Scratches,  
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PREVENTS HOG CHOLERA.

WRITE FOR FREE BOOKLETS ON  
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Animal Industry Department of  
**PARKE, DAVIS & CO.**  
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## Shorthorns

Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

Visitors welcome — information cheerfully given.

**T. T. Miller**

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## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duches and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.

Careful attention given to mail orders.

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## Brighton Farm Herds

Registered Shorthorns

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Berkshires—Both Sexes

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## BAG BALM

MADE BY THE KOW-KURE PEOPLE

The great healing ointment that thousands of dairymen swear by. Used with quick effect on Caked Bag, likely to occur when a cow freshens; also splendid for all udder sores, cuts, chaps, bruises, cracks, bunches or inflammation. Bag Balm protects, penetrates and induces quick, normal healing. Keep a box on hand constantly.

Sold in big 50c. packages by feed dealers and druggists. Write for free booklet, "Dairy Wrinkles." DAIRY ASSOCIATION CO., Lyndonville, V.

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

## Holstein Bulls

SIR PIETERTIE ORMSBY CANARY heads the herd. He is by Sir Pietertie Ormsby Mercedes and out of a dam that made 382.38 pounds butter in one year as a three year old, and she in turn out of a 1009.87 pound cow. His three nearest dams average 19,498.7 pounds milk and 877.29 pounds butter in one year. A few of his sons for sale.

**The McCloud River Lumber Company**  
McCloud, California

## Two Choice Hampshire Boars

by Director the Frisco Winner  
1 Yearling and 1 Fall Boar \$75—\$100

Tom Blodger, Gardena, Cal.  
Uneda Hampshire Stock Farm

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## 50 REGISTERED HOLSTEINS 50

North San Joaquin Breeders' First Consignment Sale

Modesto, California, Thursday, May 9, 1918

Twenty A. R. O. cows and heifers; show ring winners; bred to 30 pound sires and sires that have sired 30 pound daughters; a choice offering in every respect. Catalog free on request.

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**California Breeders Sales and Pedigree Company**

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## Elliott-Brant Rancho Guernseys

We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.

We have calves from A. R. cows with different sized records up to 750 pounds of butter fat. Our prices are reasonable and are based on breeding and records. Write and tell us your needs and we will tell you how we can fill them.

**Elliott-Brant Rancho - Owensmouth, Cal.**  
**D. O. Brant, Mgr.**



California Wonder

## KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets.

Jacks and Jennets for sale at all times. Come and see them.

**John Burrell**

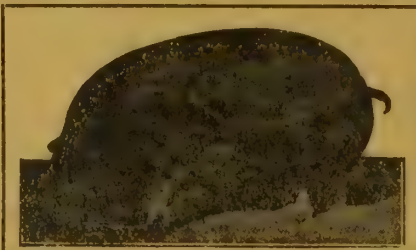
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Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

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We are selling a hog that a farmer will want to buy at a price a farmer can afford to pay.

Write for illustrated booklet telling about our Berkshire herd and

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Raising the Standard of California Bacon

## MONTELENA HERD

### Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

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## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT.

**Hauser Packing Co.**

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SAVE YOUR HOGS

The U. S. Is Calling For More HOGS  
Save Yours By Giving Them  
**Economy Powder**

Send for Free Sample and Stock Book

**Economy Hog & Cattle Powder Co.**

Hearst Bldg. - San Francisco, Cal.

## Churning

**T**HE agricultural experiment station at Pullman, Washington, refers to dairy made butter as scarcely ever appearing on the market now and discusses why so much farm butter is undesirable, stating most emphatically that there is no need for low quality in dairy made butter. In the matter of churning, here are some suggestions which will be of value:

### Preparing the Cream for Churning

It is difficult to lay down hard and fast rules for churning because there are so many factors that will change conditions. The principal points to observe in preparing cream are as follows. As soon as the cream is ripe, which can be determined by the glossy appearance when stirred, or when the acidity has reached about 0.5 per cent, it should be cooled to the churning temperature and kept at least eight hours before churning. This holding period gives the fat globules time to contract uniformly so that they will churn completely, thereby minimizing the loss of fat in the buttermilk. It is customary to ripen one day and cool down in the evening for churning the next morning. The cooling temperature varies with the conditions of the cream and season, and should be from 50 degrees in the summer to 60 degrees in the winter.

### Churning Temperature

This varies from 55 to 65 degrees

Fahrenheit. The exact temperature to use depends on a number of conditions. Use a low churning temperature, first, when cream is very sour; second, when cream is rich in fat; third, when the fat globules are soft, due to laxative feeds fed to cows; fourth, during hot weather when the temperature is likely to rise while churning.

Use high churning temperature, first, when the cream is thin; second, when cream is rather sweet; third, when the fat globules are hard, due to dry feeds fed to cows; fourth, during cold weather.

Cream is at the proper temperature when the butter comes in 30 to 40 minutes. Too high a churning temperature is undesirable as it causes the butter to come in the form of soft lumps rather than in the granular form. This often results in a greasy butter of poor texture, and one that has a high buttermilk content, causing it to deteriorate rapidly.

Too low a churning temperature is undesirable although this fault is not so serious as when the temperature is too high. When the temperature is low, the butter churns slowly. A low churning temperature may result in a butter that will not gather rapidly, the amount of moisture taken up may be below normal, and the butter may be brittle.

## American Jersey Cattle Club to Celebrate Golden Anniversary

The fiftieth annual meeting of the American Jersey Cattle Club will be held in New York City on May first, 1918.

This golden anniversary of the club marks 50 years of success in breed improvement, the object for which the club was organized in 1868. The original number of 40 members has been increased to 722, and new members are now being admitted at the rate of 100 per year. The fiscal year just ended on March 31, 1918, shows that the club has not been marking time in the first year of the country's part in the great war. The registrations and records of transfer have shown a marked increase over all previous years, and the present yearly registration of pure-bred Jerseys is 40,000 as compared with 400 in the first year of the club's existence. To date 93 volumes of the Herd Register have been published, and they include the names of 543,500 animals.

The Register of Merit work, which was commenced in 1903, has proved the value of year's tests of butterfat, and the progress of the work in this department has not yet been greatly hampered by the labor shortage or the high cost of feed. Breeders seem more determined than ever to select their breeding animals by production standards. A change effected in the 1917 Register of Merit volume makes this valuable information more accessible than ever. The total number of cows now having completed year's tests is 8990. Their average production is 7842 pounds of milk and 421 pounds of butterfat. The average percentage of fat in these tests is 5.27.

While there is need in these times for close cooperation among all branches of the dairy industry, the outlook from the viewpoint of Jersey breeders is deemed very satisfactory.

## Feeding Kids

**I**N A SERIES of articles written by Irmagarde Richards of San Mateo County in "The Goat World" we note the following suggestions as to feeding kids from three weeks old to weaning, and pass them on for the help of our subscribers.

There is doubtless a wide range of possible programs for feeding kids, almost any of which would give successful results with care and watchfulness. For the sake of beginners I will give the plan followed in our herd. It will at least have the merit of definiteness, and it has been tested by several years of experience. For the other breeders, with their own years of experiment behind them, it may serve as a basis of discussion. For it is not offered as a final or perfect program, and suggestions or crit-

icism based on experience would be of value to us all.

For the first three weeks the kid is left with the mother, or, if fed by hand, is given milk five times a day, about eight ounces at a feed. From three weeks on we feed three times a day, beginning with a pint at a feed and increasing to one and a third pints. Alfalfa hay and a little rolled barley are accessible at all times, in boxes so arranged that the feed cannot be soiled or wasted. At two and a half months the feeds are reduced to two a day, night and morning, and the kid is allowed to take its fill up to a quart apiece at each feed. Hay is kept always supplied, and an abundance of freshly cut green feed of some sort, and a regular feed of rolled barley or oats is given at noon, a scant pint for each kid. At three and



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**Gombault's  
Caustic Balsam****Has Imitators But No Competitors****A Safe, Speedy, Positive Remedy for**

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diphtheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address The Lawrence-Williams Co., Cleveland, O.

## SANTA ANITA RANCHO

Anoakia Breeding Farm

**Arabian-Thoroughbreds**

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

**Mammoth Jacks**

We have for sale a number of two and three year old Jacks, big, growthy fellows of exceptional breeding and quality.

**Poland China and Berkshire Boars**

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita Calif.  
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# TAGUS

## Duroc Jerseys

Home of California  
Defender, World's  
Champion Boar.

**Special offer:**  
**\$100 each for his  
Sons**

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Pacific States Corp.

TULARE, CAL.

H. C. MERRITT, Jr, Manager

## Duroc-Jersey Hogs AT IRELAND

Ranch at Owensmouth  
City Office: 1219 Brockman Bldg., Los Angeles  
Spring Boars by Orion Cherry King V  
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**MACHINERY**  
OF EVERY DESCRIPTION  
**BOUGHT and SOLD**  
**BUTTRESS & McCLELLAN**  
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a half months old the evening feed of milk is omitted, and the kid is given instead a mixture of feeds which we call "weaning meal," composed of one part light bran, one part middlings, and one part milk substitute. This "milk substitute" is a mixture recommended by the University of California for raising calves without milk. Its formula is as follows: wheat flour, 30 pounds; nutrium 20 pounds; coconut meal, 25 pounds; linseed oil meal, ten pounds; dried blood, two pounds. The nutrium is explained as a dried skim milk product. The price is very high. Last spring I paid 16 cents a pound for a 50-pound tin. As for the dried blood portion of the formula it has never been convenient to obtain it, and I have omitted it. Having mixed the milk substitute meal, I take equal parts of this mixture, and of bran and of middlings, mix well, and sack up enough to last for some time. When the kids have been put on one feed of milk a day, in the morning, I feed them at night a pint apiece of this meal, adding at first a little barley, as they do not like the fine meal at first, but soon grow fond of it, and are as eager for it as for their rations of milk. As soon as they are eating it well, I discontinue the barley, and at four and a half months, I discontinue milk entirely, and feed the weaning meal, a pint apiece, in the morning, and a pint apiece of rolled barley or oats at night. By the time the kid is five and a half months old, I discontinue the weaning meal and the kids go on to the regular rations of the rest of the herd.

The use of this program of feeding has produced for us excellent results. As the milk rations are reduced, the kids suffer no loss in growth, they are not troubled with scours, they finish their change of coat rapidly, and they present, when fully weaned, a thrifty, well rounded body, and a smooth, glossy coat.

Wishing, however, to submit this program to the test of the science of food values and scientific rationing, I

## Duroc-Jersey Get-Together

The National Duroc-Jersey Record Association, with offices at Peoria, and the American Duroc-Jersey Swine Breeders' Association, with offices at Chicago, have agreed to consolidate, at least committees duly appointed have canvassed the situation and decided that the only sensible thing to do is to effect the consolidation as quickly as possible.

To that end the managements of both associations sent out sometime ago ballots on which members are to express their opinions as to consolidation; as to which city, Chicago or Peoria, should be used as permanent headquarters; if Peoria is chosen, should the new association use the National Association Building constructed there; if Chicago is chosen, should the present offices of the American Association be used; and other points of minor importance will be balloted upon.

The committee in making its report suggests that both Secretary J. R. Pfander of the National and Secretary R. J. Evans of the American be retained as secretaries of the new consolidated association. Each association is to contribute \$25,000 or more to the treasury of the consolidation. The board of directors is to be composed of nine members; five of whom shall be selected from stockholders west of the Mississippi; four

sent it to Professor Voorhies, of the department of animal husbandry at the university farm.

He says: "Although we do not feed as often as you do, we know that it would probably be the best thing to do. It might be well to mention in your discussion that in case a person cannot provide five feeds per day at the start, three feeds will do. All of our animals have been raised with only three feeds per day for the first couple of weeks.

One matter which I scarcely agree with you on is the keeping of rolled barley before the kids at all times. It seems to me that this is rather unnecessary, and I would prefer to feed a little after each feed of milk, especially as rolled barley comes at such high prices at the present time. However, it does not do them any hurt and I merely looked at it from the expense side. The only other suggestions which I might have would be the concentrate feed which you give the kids when you are feeding only one feed of milk per day. The mixture which you have is a splendid one, except that the part of meal which has been recommended as a milk substitute by us, at the present time, is rather expensive. It seems to me that a mixture of ground oats, ground barley, middlings, two parts each, and linseed oil meal one part, would be just as efficient as the mixture which you mention, and I am sure it would be considerably cheaper. This is really, I believe, in the long run, an improvement on the mixture of bran, middlings and the milk substitute, because bran and midlings are really about the same in composition, although their physical makeup is different, I believe that nature takes care of this when you state that the kids seem to like a little barley with this fine mixture which you feed.

"You will find that either barley, milo maize, or oats would answer this purpose, preferably oats, because oats are known the world over as a feed for young growing stock."

from those east of the river. The annual shall be held in Chicago during International week.

—LIBERTY BOND—

**USE PURE BRED BULLS**

One of the most startling statements about the cattle industry in California was brought out recently by an inspector representing the California Cattlemen's Association. It was to the effect that the percentage of calves dropped from range cows in his section of the state was only 52. This meant that only about half of the cows running in the range are dropping calves. In the range cattle sections of Texas and New Mexico, anything less than 75 per cent is considered poor management.

If the inspector who brought in this report could have gone farther and shown the average cost of the bulls in use, it would have demonstrated that the majority of them were little better than scrubs.

A very pronounced movement is on foot to pledge the range cattlemen of California to the purchase of pure bred bulls at least. A further movement on foot is to list the number of registered and pure bred bulls in California that are available for service. These and other topics of equal importance and interest were discussed at Davis on April 8 and 9, preceding the auction sale of registered Herefords.

**Cutter's***Germ Free***Blackleg Filtrate**

and

**Blackleg Tissue Aggressin**

**The New, Safe  
and Efficient Agents  
for Protecting Calves  
from Blackleg.**

Cutter's Blackleg Filtrate positively protects against Blackleg.

Cutter's Blackleg Aggressin, made directly from animal tissues, affords even greater protection and is recommended for Pure Breeds.

Neither the Filtrate nor the Aggressin can possibly produce Blackleg in even the most susceptible animals since both are germ free.

Both have given 100% protection wherever used.

**Prices—**  
10 dose pkge. Filtrate....\$2.00  
50 " " " " " " 8.00  
100 " " " " " " 15.00  
10 dose pkge. Tissue Aggressin ..... 4.00

N. B.—Cutter's Filtrate (a "cultural product" aggressin) is full 5 c.c. to the dose, as we believe that smaller doses, whether concentrated or not, afford less protection.

Write for booklet telling what germ free vaccines are and wherein "cultural product" Aggressin differ from Cutter's Aggressin made from animal tissues.

While these new "germ free vaccines" have advantages that should be known to every stock raiser, we see no reason for a quick change to them by stock raisers who have had satisfactory results from the use of

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**"California's Favorite"  
for nearly 20 years**

Year in and Year Out they have given better satisfaction than any other vaccine made, and as far as price and convenience of administration are concerned, they have all the advantage.

**Prices:**  
10 dose pkge. Single pills \$1.00  
50 " " " " " " 4.00  
10 dose pkge. Double Pills 1.50  
50 " " " " " " 6.00  
Cutter's Pill Injector.... 1.50  
Insist on Cutter products. If unobtainable, order direct. We pay shipping charges.

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**CHOICE BREEDING STOCK FOR SALE**  
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## WAR-TIME RATIONS

Continued from Page 495

which the expectation of reducing the production price of the milk must be based. It is well known to all that feed prices are, in general, 100 per cent above the average figures that prevailed a year or two ago. Barley used to sell at \$1.00 or \$1.50 a hundred and is now \$3.50 a hundred or more. The average San Francisco market price of alfalfa hay was \$10.50 a ton for the years 1913-16, inclusive. During the past season it has sold at \$25.00 a ton or more. The average price of wheat bran up to 1917 was \$27.00, now it is \$34.00 to \$35.00—if you can get any. Mill feeds in gen-



Back the Tractor Up and Shell the Corn  
Corn sheller is becoming more common in California.

eral have increased less in cost than any other class of feeding stuffs because of the action of the food administration in fixing the price which millers may charge, at 38 per cent of the average cost to the mill of one ton of wheat, a very wise move that may save our dairymen more money than the entire cost of the food administration to the state, and will be likely to affect the price of all other concentrates as well. If farmers can buy bran under \$40.00 a ton, they are not likely to buy large quantities of other concentrated feeds costing \$60.00 or more, which careful trials and feeding experience have shown to possess only a slightly higher feed value for the purposes intended.

One way of decreasing the production price of milk is to pay less for the feeds bought. This can be accomplished by eliminating the middleman. Cooperation in purchasing feed stuffs is now a regular feature of the activities of the farm bureaus in several counties, and in many communities neighbors are combining in buying feed in carload lots. Just now it is more a question of getting grain feeds at all than of the price to be paid, but this condition is only temporary. High prices are, however, likely to continue for years, and by cooperative buying these may be appreciably reduced. Cooperation is the watchword of the age, and our farmers are gradually coming to appreciate its importance which extends in other directions than that of saving some money in buying, desirable as that is.

There are special reasons why dairymen should study the feed market these days and acquaint themselves with the characteristics and feeding value of the available feeds. Values have been turned about during the last year, and in the case of many feeds the market price does not represent an equivalent feeding value. The number of available feeds in this state is at best very limited. We do not have the glucose, starch, or hominy-factory feeds, nor the by-products from the distilleries and breweries that are available to the Eastern farmers, and only a few of the flour-mill and oil-mill feeds; nor other hay crops than alfalfa and grain hay. It is an easy matter, therefore, to become familiar with the feeds that are available for cattle feeding, and it is the duty one owes both to oneself and our country to adopt a system of feeding that will produce the best results at as low a feed cost as possible.

Ordinarily in dairy sections hay is fed to cows without the addition of grains or concentrates of any kind. While direct experiments with dairy

cows have shown that the production of the cows can be increased at least 12 to 15 per cent through the addition of grain to the hay ration, it is doubtful whether this increase will mean a direct net gain except in the case of high-producing cows. Grain feeding will not be likely to pay under war conditions with dairy cows of the ordinary run that do not produce over a couple of gallons of milk a day at their best, or only slightly above one-half pound of butter fat per day, and the corrals are full of them. It is, in fact, evident that smaller amounts of concentrates and only of the cheaper kinds ought to be fed to dairy herds, as to farm stock in general, at the present time than formerly, in the best interests of our country, and to save food that is needed to supply the wants of man at home and abroad. No one would advocate feeding good

dairy cows a smaller allowance of digestible nutrients per head daily, for they are entitled to all they get, but these may be supplied in other materials than has hitherto been the custom, such as have no value as human food or cannot be exported. The dairy cow is the most economical producer of human food among our farm animals; 100 pounds of digestible organic matter will produce, on the average, 18 to 20 pounds of milk solids, and 2½ pounds of edible solids in a beef steer, showing that it takes only about one-seventh as much feed to produce a pound of milk solids as of edible beef solids. The cow cannot be expected to, however, nor will she make such a production, unless fed a palatable ration and a liberal supply of nutrients in the ration.

In the choice of feeds, market conditions and the matter of feed equivalents should receive consideration. Roughly speaking, corn, wheat, barley, milo and wheat middlings have a similar value as feeds for dairy cows, and wheat bran, oats, dried beet pulp and cocoanut meal possess about a ten per cent lower feeding value, while linseed meal and cottonseed meal have about ten per cent higher value than the cereals. This being the case, why feed barley at \$3.60 a hundred, with wheat bran at less than \$2.00, or shorts or middlings but slightly higher than bran. Furthermore, by feeding other concentrates in place of barley, we release more of this for human consumption and help to keep down its price to that of other wheat substitutes.

Again, since hay has an approximate feeding value of one-half that of grain, why feed grain or concentrates at all, except to the best cows in the herd, when grain feeds sell at two and one-half to three times the price of hay. But it should be emphasized, as already suggested that, in war times as well as in peace, heavy-producing cows must be fed liberally and preferably a variety of feeds to reach their maximum production and to yield a maximum profit, and a portion of their feed must be in easily digestible, concentrated form in order to reach this end. Cows that do not come under this category may receive coarse roughage only, and under present conditions we may be justified in withholding concentrates to all but those yielding over a pound of butter fat a day. For such, a general rule of feeding at least a pound of grain feed per five pounds of milk produced may still be followed to advantage, but for others grain may be either excluded or largely reduced in the interest of economy of production.

Good milch cows fed hay only will not reach the production that they would on rations of roughage and grain feeds, and neither will it be advisable to feed such cows feeds of lower feeding value than hay, but dry cows and young stock may be fed a part of their roughage in the form of corn stover or milo stalks, or wheat, oat, barley, or rice straw, and similar materials of relatively low nutritive value that generally are abundant in grain sections or can be obtained at a low cost.

An experiment at the University Farm last fall illustrates the value of these feed materials. Two lots of animals, 18 calves and young heifers in one, and 12 dry cows in the other, were fed rations of alfalfa hay and barley straw, as much of both as they would clean up, during a period of 50 days. During a subsequent period of four weeks, milo stalks and alfalfa were fed, ad libitum. The young stock ate, on the average, 12 pounds of hay and about three pounds of straw a day per head, and the dry cows ate 15 pounds of hay and six pounds of straw, both lots making an average gain in body weight of 1.2 pounds a day for the whole period. The young animals did not eat enough straw with the hay to be of much importance, but the dry cows saved at least three pounds of hay per head daily, by being allowed what straw they would eat in addition to the hay. If the allowance of hay had been limited, the amount of straw eaten by either class of stock would of course have been materially increased.

In the second experiment, the young stock ate about 12 pounds of alfalfa hay per head daily and 8 pounds of milo stover, largely leaves and tender stalks, making an average daily gain of .6 pound per head during the feeding period, while the dry cows ate 13 pounds of alfalfa hay and 15 pounds of milo stalks—gaining on the average .5 pound per head a day during the feeding period.

It is possible, therefore, as has in fact been established long ago by European feeding experience, to save high-priced hay by feeding moderate amounts of materials of minor importance, like cereal straw and corn stover, stalks of grain sorghums and numerous now more or less neglected or despised waste products. Circular 167 of our college gives a somewhat full discussion of these potential feed materials and should prove interesting and profitable reading for any stockman in this time of scarcity of feed and high feed prices.

During the past few years silos have become common on the dairy

roughage, in nearly as large amounts as when grain feeds are fed. Outside of dairy sections in the extreme southern portion of the state where green feed is available practically the year around, silo building pays well and is a good patriotic move. There is no investment that a dairyman can make, except in good cows, which will yield larger returns and will enable him to produce more milk. Our dairy farmers are especially favored beyond their brethren to the north and east of us through the fact that they can grow two silage crops in a year on the same land and thus make both land and silos do double duty. The college of agriculture, through its extension division and farm advisers, stands ready to help intending silo builders. All you have to do is to let them know that assistance is wanted.

What has been said about silage applies, in some respects, to root crops as well, in sections where large yields of these can be produced per unit of land. In either case the necessity of grain feeding is largely done away with under present conditions, except as suggested, for high-producing cows.

During the last decade, the tendency of teachings relating to the feeding of farm animals has been away from fixed formulas and specific combinations of feeds, but it is helpful, in a general way, to offer some concrete examples of the best feeding practices under given conditions, and for this reason I give below a few sample dairy rations that are justified by the special conditions brought about by the war, and would recommend these to your careful consideration.

For cows producing less than ¾ pound of butter fat a day, or not over two gallons of milk per head: (1) 30 pounds alfalfa hay (or all they will eat); (2) 18 pounds alfalfa hay, 30 pounds silage (from Indian corn, milo, or sweet sorghum).

For cows producing over ¾ pound butter fat daily: (1) 25 pounds alfalfa hay, 1 pound of concentrates for every 5 pounds of milk produced. The following grain mixture is suggested: wheat bran, dried beet pulp, cocoanut meal, in the proportion of 2:1:1 by weight; (2) 12 pounds alfalfa hay, 25 pounds silage, the same grain mixture as above in a somewhat smaller proportion, say 1 to 6 pounds of milk.

Other grain mixtures that will prove economical at present prices are:

Wheat bran and dried beet pulp, equal parts by weight.

Wheat bran, cocoanut meal, 3:1 by weight.

Wheat bran, shorts (or middlings),



Scene in a Corn State

In other words this is California, for California is becoming one of the corn states. It is going to take some years to convince the world of it, but it seems as if the above photo helps the work along. This photo was taken not far from Stockton. Lots of the good yellow corn is now being made into the finest human food.

and stock ranches in many sections of the state, and according to all appearances, we are at the beginning of a great era of silo building in this state. This is in the line of economy, for the silo enables the farmer to preserve field crops for stock feeding at a minimum cost and a maximum nutritive effect. Silage is preeminently a dairy feed. The universal experience of dairy farmers goes to show that it increases the milk flow over and above that reached by giving corresponding amounts of dry feed materials. When a man has a silo, he grows crops to fill it with, and secures an ideal feed from the standpoint of palatability, nutritive effect and convenience of handling, that will enable him to produce milk as cheaply as possible, and when fed with good dry

ground mild (or rolled barley) and cocoanut meal, equal parts by weight.

If grain hay is fed to cows and not alfalfa, either of the above grain mixtures will be improved by adding about a pound of cottonseed meal or linseed meal, since it is necessary in this case to supplement the low protein roughage with a grain mixture containing some high protein concentrates; linseed meal is too expensive to be fed to dairy cows in any but small amounts, but cottonseed meal furnishes more protein for the money and with either of the mixtures given, makes a palatable and effective grain feed. If it cannot be obtained, wheat bran and cocoanut meal mixed in the proportion of 2 or 3:1 by weight, will make a satisfactory supplement when grain hay is fed.



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To help make this war a VICTORY for Democracy and world freedom we urge you to

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you supply them with fuel. Every man of your army is a cog in the great fighting machine of the Allies. His efforts depend on the power you supply him. If *you* don't come through, *he* can't.

Stand *back* of our army. It is standing in *front* of you. Those fighting men over there are your partners. They are your brothers. They are delivering your message to Kaiserism. They are fighting for you and your family.

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Go to your bank and make the biggest purchase of Third Liberty Loan Bonds that you possibly can. Your rural mail carrier will give you full particulars.

This page is donated by the following patriotic firms and individuals who want to see the farmers of California become a strong factor in the success of these bonds:

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Petaluma, California  
Everything for the poultryman

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WITH Moline Haying Machinery you can put your crop up in less time and with less labor than by any other method, and at the same time you will get a better quality of hay.

After your grass is cut rake it into loose, fluffy windrows with a Moline Cylinder Side Delivery Rake and Tedder. In this manner it will cure rapidly, retain its natural green color and nutritive value because it is not exposed to the direct rays of the sun in curing. In case you desire to ted the hay before putting it up you can do so by simply shifting a lever on the Moline Cylinder Side Delivery Rake and Tedder which reverses action of the cylinder.

Then straddle the windrow with a Moline Hay Loader attached to your wagon and

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Moline Hay Loaders are built in two types, gearless and cylinder. Either one of these will take care of your work.

In addition to hay loaders and side delivery rakes, we build a complete line of haying machinery including mowers, sulky rakes, sweep rakes, swinging rakes and overshot hay stackers.

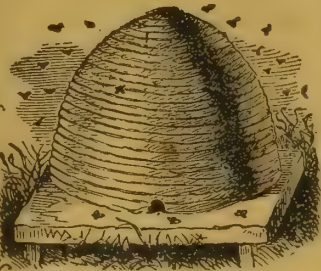
The Moline Line of Harvesting and Haying Machinery is complete in every respect and no matter what your requirements may be we can supply you. Write for booklet entitled "The Moline Way of Making Hay" and name of your nearest Moline dealer. Address Department 49

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Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Salient Six Automobiles.

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MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

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or bee gum was the original method of housing bees, honey collected in these crude homes was impossible to remove without sulphuring, which destroyed the colony of bees.

## The Modern Bungalow

was built to comfortably accommodate these industrious workers and enable the bee man to remove the honey without discomfort to the bees. The



### Miller Hives

are models of convenience and built of Redwood or Cedar with fragrant white pine frames.

Cedar hives prevent moth infesting the bees, as Cedar chests prevent moth in clothes.

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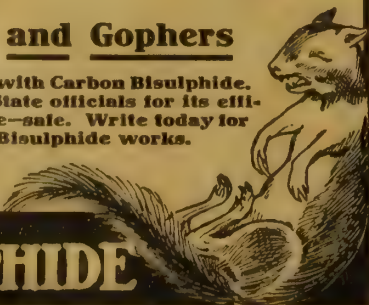
Rid your place of squirrels, gophers, prairie dogs, etc. Do it now when the young of these crop-destroying pests are being born. It's easy and cheap—when the ground is full of moisture to

### Exterminate Squirrels and Gophers

and other rodent pests. Just gas them with Carbon Bisulphide. Used and recommended by U. S. and State officials for its efficiency and economy. Simple to handle—safe. Write today for prices and folder telling how Carbon Bisulphide works.

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**CARBON BISULPHIDE**



## The Small Farm



THE Cultivator has tried to preach the truth in the gospel of the small farm for the man or the family with limited capital. Intensive farming, which means intensive experience and intensive work, may in large part make up for the lack of capital. The peasant gardeners of France, likewise those around the markets of London, and even the Chinese gardener who is tilling the lands which his forefathers began tilling more than 4000 years ago, all are proof that once we are driven to it the human being can make a small plot of land return wonderfully.

But this truth has been used as the foundation for an amazing mass of misinformation. Many city people, or so-called "back-to-the-landers," have an idea that success is easily secured if one confines his energies to an exceedingly small parcel of land. Many of these people have learned at serious cost that intensive farming means intensive experience, but still the writers with little personal experience of farming, but with sufficient control of the English language to make a most attractive story from their imaginations, are causing much loss and suffering.

A subscriber of the Cultivator, in one of the rich valleys near the Colorado, questions the relative merits of intensive and extensive farming: She writes:

May I suggest the question which I submit, as suitable matter for a leading article at some time in the near future. It seems to be one of general interest, especially in California, and especially important to prospective purchasers of farms, or those newly acquiring land.

Being ourselves novices at ranching, and the owners of something over 300 acres, only a small portion of which is, as yet, brought under cultivation, my husband and I are being told upon all sides that 40, or at the most 80, acres are all that a man can own to advantage; that ranches of this size pay better than bigger ones; that all the larger ranches are losing money.

The people who made this state-

ment are all, I believe, owners of 40 and 80 acre tracts — these being the greater number of land owners in this district. No opportunity to talk with larger landowners has presented itself thus far. I believe they are, for the most part, absentee owners.

It does not seem to us to stand to reason that there is more money to be made out of 80 acres—let us say—than out of 160, but being novices at ranching we do not like to seem opinionated in opposing the usual view.

Would it not be reasonable to believe that the question is chiefly one of the funds available for bringing the land held under cultivation?

If a man has homesteaded 160 acres and has no capital, he would, of course, do much better by selling 80 or even 120 acres of his land to get money for putting the amount he retains in perfect shape than if he tried to struggle along with poorly improved, or a good deal of unimproved land.

But if a man has both a homestead and a desert claim—320 acres—(and a certain amount of capital besides, perhaps—which is our personal case) if he disposes of so much of his land as to give them money enough to put the remaining part in good shape, will he not be safe in retaining say 160—or possibly 180 acres?

I cannot make it seem even simply good arithmetic that the man who owns 40 acres in perfect condition will get more net income than the man who owns 160 acres in equally good condition. Yet this is what we constantly hear. And if we suggest the possibility of counter arguments we are treated as inexperienced folk who will have to learn their lesson by hard knocks, and the "big ranches which don't pay"—are pointed out to us—though one wonders why if they do not pay, their owners continue to hold on to them. We are prepared to admit that proportionately 40 acres many yield larger returns than 160—other things being equal.

As this 40 acre conviction seems to be a very prevalent one I am sure that an article from some authoritative source would be of wide interest.

## Everybody is Responsible

Secretary McAdoo sends the following message: To the rural residents of America it is a matter of supreme national importance that the treasury of the United States shall be supplied at all times with the amount of money needed to furnish the food, the clothing, the guns, the ammunition, required by our soldiers to fight successfully for the safety and liberty of America, and to pay the allowances made by the government to the dependent wives and children of these soldiers and to pay the life insurance which the government permits every soldier to buy from it. The treasury must also have the necessary money to extend credit to the valiant Britons, French, Belgians and Italians, who are fighting alongside American soldiers on the bloody battlefields of France, Belgium and Italy.

Those who can only buy thrift stamps should buy thrift stamps, those who can buy only war savings stamps should buy war saving stamps, those who can buy liberty bonds should buy liberty bonds. Always they should buy as many stamps and as many bonds as they can instead of as few. The government has

now put these loans in such convenient form that there is no citizen in the land who cannot help to some extent if he is patriotic enough to do so.

The farmers of the nation traditionally are freedom loving people. One hundred and forty-three years ago on the nineteenth of this month, the farmers at Lexington and Concord fired the first shot for liberty, and it was heard around the world. I know that the American farmers of today are just as liberty loving as their heroic ancestors. I know that they will join with other Americans of every business and profession in providing the money which will enable their government to fight to a victorious conclusion this great war for liberty, justice and America's sacred rights.

—LIBERTY BOND—  
**COUNTY IN TEXAS PLEDGES ITSELF TO USE NO WHEAT FLOUR**

The people of Grimes County, Texas, have pledged themselves to use no wheat flour until after harvest. They have already turned over to the government one car of wheat flour and will deliver others in transit. These are being diverted to an Atlantic port for immediate shipment to the Allies.



## Caution Regarding Squirrel Poison

Commissioner Hecke writes:

"During the squirrel eradication campaign in Lake County, one of the questions most frequently asked was: 'Will poisoned barley injure cattle, hogs and sheep?' Poisoned barley will not injure cattle if scattered according to directions instead of placing it in little piles near the mouth of the burrows. The same applies to hogs, although somewhat more care should be taken than with cattle. It is known that hogs in very poor con-

dition if eating several of the poisoned squirrels will be affected. If the hog is in good condition or fat, the danger is greatly minimized. With sheep you must be careful, as sheep will pick up poisoned barley as easily as the squirrels will. For this reason in sheep pastures when poisoned barley is distributed, care should be taken to place poisoned barley within the burrow and, if possible, always stuff up the hole with old newspapers."

## Seed Inspection Under the Horticultural Law

Does the county horticultural commissioner's law provide for seed inspection? The answer is in the affirmative.—Section 2322f compels the holding of all shipments of plants or plant products or orchard appliances or seeds for inspection "which the county horticultural commissioners or the state commissioner of horticulture may consider liable to be infested or infected with dangerous insect pests, plant diseases or noxious weeds."

The law leaves it optional with the commissioner whether he shall inspect seeds or not. In general the state office has urged the inspection on field seeds such as alfalfa, oats, barley, clover and others as there is great danger of spreading Johnson grass, dodder, morning glory, yellow star thistle, etc., with these seeds. We do not recommend the inspection of garden and vegetable seed unless

there is reason to doubt their purity. The machinery for inspecting is at present too inaccurate to do this work with justice to all. We have also recommended that manifests be not required at least on small seed shipments because of this same lack of inspection.

The county law does not authorize the commissioners to judge the viability of seeds, or their quality in any way except in relation to pests. A great deal of educational work can be performed by the inspectors, and those who are buying seed may be informed as to its quality. The state needs a good seed law and the time is nearly ripe for such legislation. Uniformity should be our watchword and united action our password. Cooperation in all these matters will be the key to our future success in the horticultural quarantine work of the state.

## Egyptian Cotton History in United States

Written for California Cultivator By G. O. Thrailkill

**T**WO varieties of Egyptian cotton are now being grown in the United States, the Yuma and the Pima. From seed of the "Mit Afia" variety, imported in 1901, these new varieties have been developed at the government experiment stations in Arizona.

The Yuma variety was established and quite uniform in type by 1907, but not until 1912 was it recommended for commercial production; that year's crop of 375 bales was grown on about 480 acres. From the 3800 acres planted in 1913 there were 2135 bales picked. Late planting prevented some fields from fully maturing.

The profits from this crop caused quite a sensation and everyone planted as much cotton as he could in 1914. Much of the 1914 acreage was planted late on poor soil which had been hastily prepared and by men who knew little about cotton culture or the requirements of the cotton plant. Also most planters were not properly financed. The natural result was a low average yield, and only 6187 bales were picked from the 12,000 acres planted. Many farmers, however, who understood cotton and gave it proper care produced over a bale to the acre, and a few nearly a bale and a half.

When the war caused the price for cotton to drop to 50 per cent of what was expected it caused many failures among those who were insufficiently financed, but there were no conspicuous failures among those who had raised good crops and some even made a profit.

It is interesting to note that even

with the low prices prevailing during the planting season of 1915 there were 3700 acres put in, as compared to 3800 in 1913, which indicates that those familiar with cotton growing and marketing had confidence in the future success of this crop.

That this confidence was warranted is proved by the profits of this and the 1916 crop and the rapid increase in the cotton acreage. There were about 35,000 acres of Egyptian cotton grown in 1917, and it is estimated that this year over 100,000 acres will be devoted to Egyptian cotton.

Pima

In 1910 a superior plant was selected from a field of Yuma cotton grown at Sacaton, Arizona, and from the seed of this plant the government experts have developed the Pima variety. This variety produces better, has fewer vegetative branches, stronger fruiting branches, and has a finer quality and longer staple than the Yuma variety. The Pima with a staple of 1½ to 1¾ inches is equal to the Sakalleredes variety, which is the best cotton grown in Egypt.

The Yuma staple of 17-16 inches to 19-16 inches is equal to the average Egyptian cotton imported from Egypt. The Pima seed secured from the first commercial crop of 275 acres grown near Tempe, Arizona, in 1916 was planted under government supervision on 5000 acres in 1917. Owing to the strong demand for Pima seed this year the supply has been allotted to the different cotton growing areas of the Southwest. Many were late in reserving seed for this year's planting, but there will be an ample supply next year and it is quite probable the entire 1919 planting will be of the Pima variety.



### EXTRA TESTED

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**For Sale.**—Valencias, Washington Navel and lemon trees, 2 years old, size ¾ inch to 1 inch up. Thirty thousand trees altogether. M. Matayoshi, P. O. Box 4, Baldwin Park, Cal.

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### SPECIAL

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**Alfalfa Seed.**—Others come and go. We have been in the alfalfa seed business, growing and selling, for forty years. We handle vast quantities of it. We make it a specialty. Our customers dot the entire globe. Practically, if you want reliable stock, seed that can be depended upon, either alfalfa or other seeds, write or wire us for quotations, samples and advice. V. A. Peterson Alfalfa Seed Co., Arbuckle, Cal.

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**For Sale.**—Amber Cane Sorghum seed in lots of 100 pounds and over. For prices write P. O. Box 507, Atwater, California.

**R-O-S-E'S** 50 cents per dozen. Write for Catalogue C and special prices. Kavan Nurseries, San Bernardino, Cal.

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**For Sale Cheap.**—Stallions, Jacks and Jennies. 1 registered Belgian Stallion; 1 registered Percheron, both weighing over a ton; 3 young Jacks; 6 young Jennies. Among them several exceptionally fine animals weighing over 1150 pounds. Address Newport Estate, Perris, California.

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**For Sale or Exchange** for land near coast, large black registered Jacks and Jennies, good as can be found in California. Address A. L. Allen, Perris, California.

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**Buy Land Where They Raise the Prize Crops,** in Snohomish County. 40 acre farms, \$25 per acre. Ten yearly payments, 6 per cent interest. Visit our offices and see the great exhibit of PRIZE WINNING Vegetables, Fruits, Grains, Alfalfa and other Grasses raised on adjoining farms. They prove our claims that this is the best land in Western Washington. Paved roads. Four passenger trains a day. Graded School, Cannery, Creamery, Cheese Factory. Plenty of work for the laboring man in the mills and camps, where 75¢ a DAY in asking for our illustrated literature.

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**For Sale.**—Have 40 acres, well located, good land, "Dairy land" Colony. Cannot handle it all. Will sacrifice my equity, 20 acres, \$1050 for \$300.00. Will take Ford in good condition or good milk cow to apply. A. F. Rice, Chowchilla, California.

**For Sale or Exchange.**—4 acres in city of Santa Cruz, for Los Angeles or Orange County acreage. William Richard, Santa Cruz, Cal.

**40 acres choice level land,** improved, at sacrifice. No trades. J. L. Buck, Chowchilla, California.

### WANTED

**Wanted.**—Farm superintendent for a large ranch under the Roosevelt Project in Arizona. Must be well qualified for the position, active, intelligent, able to handle men and produce maximum crops. Experience with Holstein dairy cows. A good opening for a capable man. State age, experience, references and salary expected. Address L. Care of the California Cultivator.

**Mixed Eggs or Thoroughbred Eggs Wanted.**—We want to buy eggs of any kind that will produce stock suitable for table use. Color or breed of chicks immaterial. We pay 10 cents per dozen above select market price and can use in large and small lots. What have you to offer? Give full details. F. Lehman, 320 South Spring St., Los Angeles, California.

**Wanted.**—Position with working interest as manager of large ranch. Have had wide experience in all branches. Part salary, balance in percentage of profits made. Lock Box 220, Oakland, California.

**Wanted Goose Eggs, Turkey eggs, Duck eggs,** and all kinds of hatching eggs or baby chicks, ducks, geese, etc., in large or small lots. Write us what you have to offer. Pioneer Hatchery, 320 S. Spring St., Los Angeles, California.

**Wanted.**—To hear from owner of farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

**Wanted by Rancher,** (American) about forty acres suitable for dairy. Prefer lease for term of years. Box 3, Waukena.

### RABBITS

**Go Into Business For Yourself.**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**If You Want to Raise Rabbits,** you need "The Western Rabbit Book" a guide to success. Mrs. C. A. Richey, 616 North Benton Way, Los Angeles, California.

**For Sale.**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

### MISCELLANEOUS

**For Sale.**—Tractor plows. One 4-disc, one 5-disc, and one 6-disc; all practically new. They are good ones. Room 1120 Merchants National Bank Building, San Francisco.

**To Reduce the high cost of living,** send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

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**For Sale.**—300,000 Single Comb White Leghorn chicks during April, May and June. Heaviest laying, Hoganized stock only. Broilers in ten weeks; pullets lay at five months. We guarantee safe arrival of all chicks to destination, you pay only for chicks received in good condition. Shipped safely anywhere West of the Rockies. Price \$10.00 per 100; \$95.00 per 1000. No money in advance; pay on delivery. Finest hatchery in the world. Established over twenty years. Must Hatch Incubator Co., 418 Seventh St., Petaluma, California.

**For Sale.**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 15. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Ancona Chicks** from my vigorous heavy-laying strain of First Prize winning Anconas, \$15 per 100, \$70 per 500. Hatching eggs \$1.50 a setting, \$8.00 per hundred. Kaj. Paulsen, Route F, Fresno, California.

**"Barclays Barred Beauties"**—Grand exhibition cockerels, cocks and eggs. G. S. Barclay, R. A. Lindsay.

**Famous Tom Barron White Leghorn** eggs \$2.00. El. F. Barclay, Lindsay, Cal.

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**At Last a cure for the dreaded disease White Diarrhoea** which has been one of the greatest draw backs in the poultry business. Get the cure and wait for the disease; instead of getting the disease and waiting for the cure. I absolutely guarantee this cure under directions, to be perfectly satisfactory or your money refunded. Sold in dollar bottles only. Worth five to any poultry man. This cure has been discovered by actual experience and it is a sure cure. EARL E. SANDERS, R. D., Modesto, California.

**White Leghorn Baby Chicks.**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. Chicks ordered now for May delivery will be \$10.00 per 100. Lyon Hatchery, Gardena.

**Your Opportunity.**—Half price eggs sale. Big profit now raising our 200-250 egg Leghorns, Wyandottes, Anconas, Red Rocks, Minorcas, Orpingtons, Brannas, ducks, geese, turkeys. Thousands chicks, eggs weekly, reasonable. Laying pullets hens. Males half price. Many repeat orders. Hundreds customers making money. One cleared \$617 on 110 hens last year. James Beeson, Pasadena, Cal.

**Thorough Barred P. Rocks** exclusively. Hen record 190 eggs in 40 months. Trap-nested, pedigreed matings for 1918. Pen 1, \$2.50; two \$1.50 per 15 eggs. Baby chicks, March and April 25 cents, limited number. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

**Baby Chicks and Eggs.**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, Cal.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wrior spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Model Poultry Farm.** White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

**Baby Chicks.**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbs, Campbell Poultry Ranch, Campbell, Cal.

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**Baby Chicks, Ancona, Rhode Island Red,** \$16.00 per 100, Barred Rocks, \$17.50. MacFarlane Quality White Leghorn, \$12. Many other breeds hatching every week. Eggs for hatching, write for prices. D. E. Doke, 743 So. Los Angeles St., Los Angeles.

**For Sale.**—Anconas the most popular breed today. "There's a reason." Small eaters and heavy layers of large eggs. Five breeding pens. Eggs of guaranteed fertility \$1 per 15; \$6 per 100. A. E. Nelson, El Monte, Cal.

**Baby Chicks.**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders** for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery, Watsonville, Cal.

**Headquarters for Baby Chicks** of standard breeds. Shipped to all points within 40 hours' travel from Fresno and on Freemarket. Phone 2544W, Hall & Rohrs, cor. Clark and Belmont, Fresno, California.

**White Leghorn Baby Chix** from heavy-laying (Hoganized) stock; \$10 per 100. We guarantee safe arrival. The PIONEER HATCHERY, 409 Sixth St., Petaluma, California.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

**White Rocks, White Leghorns, "Quack-less" White Muscovy dux, White Embden goslings, eggs and babies.** White Star Hatchery, Kerman, Cal.

**"Eastman's Bred-to-Lay"** Hoganized, trap-nested Barred Plymouth Rocks; April chicks, March eggs. Fairmead Poultry Farm, Fairmead, California.

**Black Orpingtons Lay, Weigh and Pay.**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

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**Trapnested White Leghorns.**—Official 200 egg records, also eggs from above \$3 per 15, \$3 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

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**White Wyandotte eggs** for hatching from fine breeding pens. Can't be excelled for winter layers. J. W. Nicholson, Warco.



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**BERKSHIRES — GUERNSEYS**  
—GRAPE WILD FARMS—

At present the oldest boars we have to offer are of September and October farrow. They are by Royal Superbus and Fashion Longfellow 27th. We also have a limited number of gilts to offer, bred for May farrow.

A. B. HUMPHREY,  
Escalon, San Joaquin County, California.

Poland-Chinas—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or L. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

The Billiken Brand of Chesters—The easy feeders and the money makers. The future outlook for hogs was never so good before. Am offering a few fall sows, bred to farrow their second litters in May. Some extra nice spring gilts bred to farrow in June. Fall pigs, both sexes. Write now for prices; immediate delivery. C. B. Cunningham, Mills, Sacramento County, Cal.

Poland-Chinas—A few very fine young boars, October litters, out of Darkness C. by I. B. A. Wonder. Take 'em within 30 days at \$30 each. Now booking orders for spring farrow from Big Bone Bob, Golden Gate King, and Big Kover, from our own prize winners and the fine sows we have recently purchased in the East. W. A. Young and J. A. Clark, Lodi, California.

Improved Jerusalem Artichokes produce twenty tons to the acre. The great hog feed for the winter months—the hog does the harvesting. 18 pounds for \$1.50 postpaid to and including third zone. 98 pounds for \$5.00 f. o. b. Niles. 1000 pounds and over at 4 cents per pound. California Nursery Co., Niles, Cal.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

We Pay Cash for Hogs of All Sizes, weigh's and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

Copro (Made from cocoanuts)—Best hog-feed. Your dealer, or Lee Chamberlain & Co., Los Angeles, Cal.

Bernstein's Reduction Sale of Registered Poland-Chinas, Hanford, April 17. 60 head will be sold consisting of four herd boars, 18 bred sows and gilts, six fall boars and 32 fall gilts.

Duroc-Jerseys—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

Pork Production Campaign Supply—Quantities of thorough bred sows, boars and weaned pigs. Holmes Date Gardens, Indio, California.

Tamworth Gilts, bred to Tamworth boar Weight 150 to 200 pounds at 20c pound. Crated, f. o. b. Monte Vista Ranch, Spring Valley, San Diego Co., California.

Large Type Poland-Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

Rancho Rubio Durocs all sold out except some choice fall boar pigs. Write for prices. Elmer Lamb, Ceres, Cal.

Duroc-Jerseys—We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

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HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, Cal.

Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. E. Exposition, Mayfield, Cal.

Poland-Chinas—A few good breeding boars. S. F. Williams, Orland, Cal.

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SAVE YOU HALF  
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Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

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Mammoth Geese—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alpaugh, Cal.

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## CHOLERA INFECTION CARRIERS

Pigeons, sparrows, crows and buzzards are active hog cholera infection carriers, according to the University of Missouri college of agriculture. Crows and buzzards are especially dangerous because of their habit of feeding upon the carcasses of dead hogs. By smearing their bodies with the blood or tissue juices, they carry this infectious material to healthy hogs and set up a new outbreak of cholera. The only effective method by which crows and buzzards can be kept away from the premises is by avoiding those things which attract them to the place. Carcasses or other food material should not be left exposed to them.

The dog likewise is an infection carrier. Since by nature he is a meat eating animal, he feeds upon the carcasses of dead hogs and when his immediate appetite is satisfied, he almost invariably gathers up pieces of the diseased meat and carries them to his home. It is of utmost importance therefore if cholera is in the immediate neighborhood to confine the dog and undertake to prevent strange dogs from trespassing on the farm.

Human beings are carriers of infection. The person who understands the possibility of infections on his shoes and clothing will refrain from visiting the hog lots of his neighbors where there are or have been sick hogs. He will also see that persons visiting his farm for any purpose whatsoever stay out of his hog sheds and pens when there is any hog cholera in the community. In exchanging labor with neighbors or in transferring farm implements, farmers sometimes unwittingly carry infections home to their hogs.

## —LIBERTY BOND—

## MONEY IN EWES

"Purchased 65 Merino ewes fall of 1916 and bred them to one of my Dorset rams. In March, 1917, the 65 ewes dropped 70 lambs and raised all of them. In November I sold them at 16 cents per pound and they averaged 87 pounds and brought \$974.40. Sold the wool from the 65 Merino ewes for \$375, making a total of \$1,349.40 from the sale of 70 lambs and 500 pounds wool."—Dorset Bulletin.

## —LIBERTY BOND—

The man who grows more food adds to the wealth of the world; the man who grows dollars may be adding only to his own wealth.

## NATIONAL MILK AND DAIRY FARM EXPOSITION

New York will be the Mecca for thousands of dairymen and others directly interested in the milk industry who will come from all parts of the country to attend the National Milk and Dairy Farm Exposition which is to be held in Grand Central Palace the week of May 20. Interest in the affair is running high for the exposition will serve to show all that is new and interesting in the industry and its allied interests in a most comprehensive way.

Three floors of the huge building will be devoted to the exposition, during which a series of important conferences will be held. There will be exhibits and practical demonstrations of all forms of milk foods and milk products, processes of milking, handling, machinery and equipment, and all manner of things relating to the dairy farm and its allied interests. One of the chief purposes will be to demonstrate the fact that milk is one of nature's valuable as well as one of the cheapest of foods.

## —LIBERTY BOND—

## INOCULATION OF ALFALFA

Inoculation for alfalfa may best be accomplished by scattering over the area to be seeded surface soil taken to the depth of four or five inches from another field upon which the crop has been previously successfully grown. The soil should be broadcasted, at the rate of from 250 to 500 pounds per acre, and harrowed in immediately. The spreading should take place on a cloudy day or late in the afternoon, as the sun's rays are destructive to the germs. Soil from the roots of sweet-clover plants also will inoculate alfalfa. Care should be taken to avoid introducing noxious weeds or fungous diseases.

## —LIBERTY BOND—

## MUTUALLY MISTAKEN

"As I was going over the bridge the other day," said an Irishman, "I met Patsy O'Brien. 'O'Brien, I says, 'how are you?' 'Pretty well, thank you, Brady!' says he. 'Brady?' says I, 'that's not my name.' 'Faith,' says he, 'and mine's not O'Brien!' With that we looked agin at each other, and sure enough it was nather of us!"—The Furrow.

## —LIBERTY BOND—

## A STRONG PROVIDER

"Is your husband much of a provider, Malindy?"

"He jes' ain't nothin' else, ma'am. He gwine to git some new furniture providin' he gits de money; he gwine to git de money providin' he go to work; he go to work providin' de job suits him. I never see such a providin' man in all mah days."—The Furrow.

## —LIBERTY BOND—

## THE SHORTHORN MAGAZINE

The April number of "The Shorthorn in America," published by the American Shorthorn Breeders' Association, is now in the mails. It begins the third year of its publication and will be generally regarded as one of the most interesting and informing numbers yet issued.

## —LIBERTY BOND—

The federal government is asking very seriously of California as to its situation in the matter of live stock diseases, especially with reference to hog cholera and its prevalence. State Veterinarian Keane has been asked to canvass the situation and report as to number of animals infected, location of infection centers, and such other information as may be of value in the organizing of a campaign to control these diseases. In other words, the state must be cleaned up.



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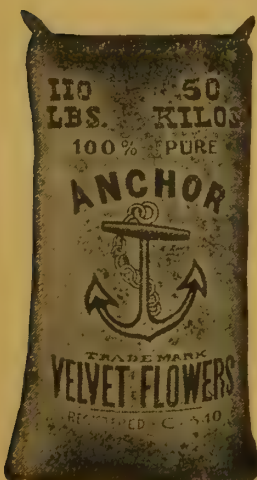
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## Bad Bugs of the Hen Yard

Written for California Cultivator By Jean A. Koethen



HERE are no good bugs in the hen yard. They are all bad, hopelessly bad. Not only are they all bad and always bad, but they are at their worst when everything is at its best, in the spring when hens are laying for all they are worth, when young stock is pushing forward for all the world like the potatoes and cabbage plants and fruit buds. When the perfect June days come with their wonderful flood of life, then, along with that flood come the pests of the hen yard, the vampire mites that suck and hide and cling and wallow in the blood of their victims. Lice were there before them, but lice are always with us unless we get rid of them. Ticks, once in are in for keeps. Sticktight fleas, like mites, come with the warmer weather. There you have them, the whole pestiferous crew, mites, lice, ticks, fleas, but worst of all are the mites.

He has a lovely Latin name, the common red mite that makes us so much trouble. Dermanyssus Gallinae, scientists call him. This mite is about half a millimeter long. The female is a little larger than the male. Both are gray when they are empty. When they are gorged from a night's feeding they are a dark red. They visit the fowls only to feed and spend the rest of the time on the under sides of the roosts, in cracks and crevices, under collections of droppings or other filth, and in the nest material. Here they breed, and in spring and summer they reproduce with astonishing rapidity.

One of the reasons for early hatching in California is the great care which must be employed to keep red mites from the coops and brooders of the young chicks after April. Mites may be found at any season in houses that are not sprayed, but if coops and brooders are carefully cleaned and disinfected when the chicks are put in them, and are at a reasonable distance from the houses of the older stock, mites seldom find them before the usual April hot spell. After this time they must be watched constantly.

One of the best disinfectants for keeping mites away from the poultry house is cresol. This may be bought in any quantity in the form of commercial cresol and is diluted with water in proportion varying from two to five per cent cresol with 50 to 20 per cent water. It is generally used as a spray but may be applied with a brush. In using this or any other liquid disinfectant, remember that mites live in the cracks in the wood and that every inch of the walls should be soaked. If even a few are left for breeders the work will have to be done over again. If there are many cracks mites may easily be driven through the wall, hence it is wise to spray both inside and out.

Another disinfectant that is as efficient in many cases as cresol is a mixture of crude carbolic acid and kerosene (one part acid to four or five of kerosene.) If the acid is full strength this is just as good as the cresol solution, but it is not dependable. On this account cresol is preferred at Berkeley and other poultry experiment stations.

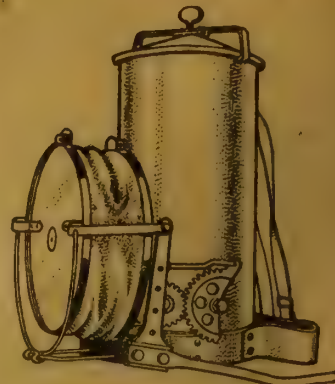
All houses should be sprayed once or twice a month whether there is evidence of the presence of mites or not. Once you know the mites are

there only a thorough housecleaning and most frequent spraying will exterminate them. Their presence may often be detected by little white flaky looking scales on and under the roofs. These look as if they might come from the fowls, but they do not. They are the cast-off skins of young mites which molt several times before they attain adult size. When you see these cast skins, you may know that mites are present and are breeding.

The louse problem is considerably simpler than the mite problem. It may usually be taken for granted that lice are on the bodies of the fowls unless they have been powdered or greased occasionally. Mediterraneanans are an apparent exception to this rule. Some Leghorn breeders dust their birds once or twice a year; others declare that they do not find it necessary. Whether this is because Mediterranean feathers are closer than those of the larger breeds or because of their greater activity I do not know, but the fact seems to be that fowls are infested with vermin in exact proportion to their size. A dust bath in moist dirt helps some and is a great comfort to the birds, but it does not rid Orpingtons or Brahmas of their unwelcome guests. Such a riddance can only be effected by dusting with a powder that poisons or smothers the lice, or both, or by greasing with lard or some specially prepared ointment. What is known as "blue" ointment is recommended by many experts. This is mixed with an equal quantity of vaseline, and a very small amount rubbed about the vent, where lice always breed. As this ointment might poison the bird if it succeeded in reaching it with its bill, most poultry keepers prefer a dry powder. There are a number of excellent proprietary powders on the market, of which those which contain most tobacco seem most efficacious. For a large flock the Lowry powder can be prepared at home. Take three parts gasoline and one part crude carbolic acid or cresol, mix and add gradually, stirring constantly, enough plaster of Paris to take up all the moisture. This makes a pinkish and rather lumpy powder which should be put through a sieve before it is used. For young chicks Persian insect or buhach powder is safer than the stronger preparations used for adult fowls. In warm weather the heads of the chicks may be greased. In chilly weather it is better to keep the hen thoroughly dusted and let the chicks alone. If she is perfectly clean they will not be lousy. Chicks in brooders should not need dusting for a month. After they reach this age an occasional dusting at night over their backs with Persian insect powder is safe and not much trouble.

It is hard to say just how seriously the presence of lice on hens affects egg production. Certainly they are very annoying, and it is hardly fair to expect hens to do their best when they must scratch night and day just to keep themselves comfortable. With chicks, however, they are a great menace to life and health. No chick can grow as it should when it is teased and tickled by lice. If it lives it will be a runt, and it is most likely not to live. When chicks a month old or more begin to stand around looking droopy and miserable, with rough feathers and humpy backs, the trouble may be laid with almost absolute

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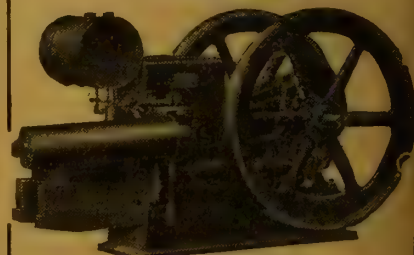
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certainly to either lice or mites. First give them all a thorough dusting over the back, about the vent, on head and under wings, then go for the coops. When chicks have commenced to show the effects of louse or mite infestation it may be too late to save their lives, but the chicks that are still well have a chance of escape. In warm weather coops in which mites have once been found should be washed every day with the hose and sprayed or painted with disinfectant twice a week.

There seems to be no treatment that is certain death to the tick, the

bedbug of the poultry house. Fortunately these pests are rarely found except in old and long-neglected houses. When they are once in, the only cure seems to be to burn the house.

Stick-tight fleas belong to very sandy soils. They are tiny black creatures which burrow into the combs and wattles of the birds and remain there until they are killed. The simplest method of killing them is by anointing with vaseline, which smothers the fleas. If a bird is badly infested, two or three applications of vaseline may be required.

## The Egg Situation

Do Not Kill the Hen That Lays the Golden Egg

All present indications point to continued high prices for eggs, with the possibility of newly laid eggs of prime quality selling next winter at prices considerably above those of last winter. Eggs are going into storage now at costs which necessitate a retail price of 40 cents or better next fall and winter in order to return a reasonable profit for handling and storing.

Whether the present shortage of eggs continues through next winter or not depends on what the farmers in U. S. do with their poultry during the next six or eight weeks. If they follow out their expressed intention of selling the greater part of the farm flock because of the high cost of feed, and the fowls which are sold are not replaced with pullets, fresh eggs will be as scarce next November and December as the proverbial "hen's teeth."

Because of the existing shortage in the egg market and the increasing demand for eggs due to the advancing cost of other livestock products, every farmer in the state should plan to raise as many good pullets this season as he has facilities to handle. They should be carefully fed so that they will be well grown and begin to lay before the first of November. For a profitable yield of eggs during the winter months, early hatched pullets are much more valuable than hens.

The older hens may be sent to market a few at a time as fast as they stop laying. All hens which remain in laying condition through the summer should be retained until fall. Those which continue egg production until October 1 or later should be retained for use as breeders. If properly handled, hens may be carried through the summer at a good profit in spite of the high cost of feed. If these hens are thrown on the market now, the market will have an oversupply greater than the storage houses can handle and prices will be forced down to a low level.

Don't kill laying hens; raise as many pullets as possible; have all chickens hatched before June 1; feed well and handle carefully. If these suggestions are followed, a good profit will result, and an egg famine will be avoided.

### Preserving Eggs

An abundant supply of eggs during the months of high prices can be provided by the preservation of eggs in a solution of water glass. The following method is practical for the housewife who desires to preserve a case (30 dozen) of eggs for winter use:

Obtain three pints of water glass (sodium silicate) at a drug store and mix it with 27 pints of cool boiled water. Place fresh, clean eggs carefully in a ten gallon earthenware jar.

Be sure that none of the eggs are cracked, old or dirty.

After putting the eggs in the jar, place a large plate over them and pour in the water glass solution until the plate is submerged under two inches of liquid. If one desires to preserve the eggs from day to day, the solution may be put in the jar and the eggs placed therein as gathered until the jar is full. Tie heavy paper over the top of the jar and move it carefully to a cool place where it may remain until one is ready to use the eggs. Remove them from the solution as needed and wash with cold water. If one desires to boil them, prick one or two small holes in each egg with a needle. This will prevent the contents from breaking the shell.

—LIBERTY BOND—

### THE POULTRY BUSINESS

Speaking of war conditions, figures show that the business of poultry raising is profitable in spite of the high prices of feed. Professor W. E. Lloyd of the poultry department at the University Farm made the following statement in regard to the above:

"Feed is now very high in price, and the ration which formerly cost \$1.35 to feed a Leghorn hen for one year, exclusive of labor, now costs approximately \$2.50, or an 85 per cent advance, which might frighten the producer were it not for the advance in egg prices. It is very probable that

eggs will average not less than 36 cents per dozen this year, and if this be the case it will take but seven dozen eggs to pay the hen's feed bill. If we add an additional two dozen to pay for labor costs it will take only nine dozen eggs to pay the hen's entire expenses, exclusive of depreciation and interest on investment. While that does not show a large return, it is at least holding our own while the war lasts, which is in itself quite an achievement, and any flock of fowls which cannot show an average of nine dozen eggs per hen per year should have been eliminated long before the war came along."—W. J.

—LIBERTY BOND—

### THE RELATIVE VALUE OF DIFFERENT VARIETIES OF COTTON SEED FOR OIL PRODUCTION

We call our readers' attention to the facts relative to the different varieties of cotton seed and the oil contents, as given by Prof. L. E. Rast, of the Georgia agricultural college. Prof. Rast has been working for several years on the problem of determining the relative oil contents of different staple varieties of cotton seed. It will be a surprise to our readers to learn that in a ton of seed there is a wide difference of 16½ gallons of oil, between the highest and the lowest, and that this 16½ gallons of oil at the present price of oil, \$1.31½ cents per gallon, makes the great difference of \$21.66 in the value of a ton of seed. Hence the farmer who grows the highest, lacks \$10 per ton of getting the value of his seed, while the one who grows the lowest is getting \$10 per ton too much for his seed, because the oil mills must pay on the average yield of oil per ton of seed.—Southern Cultivator.

—LIBERTY BOND—

The forest service furnishes protection from fire to hundreds of thousands of acres within or near the national forests, belonging to private individuals and organizations. During 1917 fire protection was furnished approximately 275 owners of private lands by the forest service in California. This protection is not given gratis, since the forest service has no authority to fight fire on privately owned lands, except where failure to do so would seriously threaten adjoin-

ing public property, but was furnished the land owners at a price based upon the cost to the government of protecting national forest lands of the same general character and condition of hazard.

Land owners cooperating with the government in fire protection are of all classes, ranging from the homesteader with a few acres to the owner of large tracts of timber, and municipalities or organizations owning large areas of valuable brush watershed. The sum paid the government by private owners of lands for this protection last year amounted to \$25,000 in round numbers. More than \$4,000 of this was from land owners for the first time cooperating with the forest service in fire protection.

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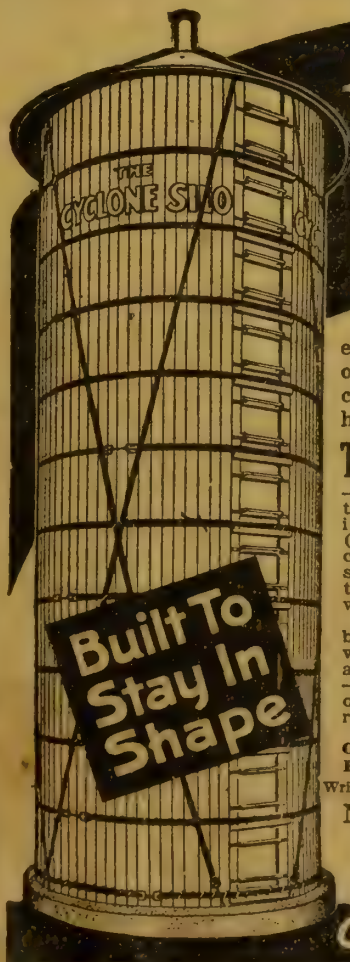
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NATIONAL TANK & PIPE CO. C. C.  
275-B Oak St., Portland, Oregon.  
Dear Sir: Please send me your Silo  
Feed Book.

Name .....

Address .....

Get our Feed Book - It's Free



# Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

## Tractor Engine for Pumping

Will a tractor rated at 12 h. p. at belt be as good and economical to pump water as a stationary engine of same size? The tractor is new but has not been a success as an orchard machine and can be purchased at about the same price as a stationary engine.—Subscriber, Fresno.

This question was submitted to

Prof. J. B. Davidson of the University of California, who answers:

"The tractor engine used for stationary purposes ought to give satisfactory service and at the same time not interfere with the use of the tractor, thus extending its field of usefulness. The exceptions would be where an extremely high speed motor is used, where no adequate provision is made for controlling the speed and where the design is of such a character that the heavier fuels cannot be used. It is entirely proper and good

business to purchase a tractor with the thought of using it for stationary work."

—LIBERTY—

## Bean Buyer

A subscriber at Wilcox, Arizona writes as to name and address of bean broker. This is not a question of general interest to our subscribers, and as the subscriber fails to sign his name we are unable to forward the information.

—LIBERTY—

## Coarse Rind of Oranges

If the subscriber who complained of rough rind and coarse oranges would use a good commercial fertilizer around his trees, say one-half pound for each year of age to each tree, he would find the fruit much improved in appearance and flavor.

My lemon trees bore very rough and lumpy fruit. I was advised to rebud them and was told my trees were more in the nature of shade than of fruit trees. I purchased some good fertilizer and used it carefully. In less than a year there was a decided improvement. Trees loaded with "the finest lemons that were ever in the packing house," so the foreman of the house told me.—Orange County, Subscriber.

## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

—LIBERTY—

## Broken Contract

A and B enter into a contract whereby B was to saw wood for A, and A sold three mules to B for which B paid \$50 on account and agreed to pay \$20 out of each carload of wood sawed. B shows up for work two weeks late at which time A cannot procure help sufficient to keep B busy; B cut one carload of wood and then took the mules and his saw away. Can B hold the mules and if not what is the way to proceed? —Subscriber, Lemon Cove.

The terms of the contract with respect to the passage of title to the mules is not stated. Unless a present sale and transfer of title and the date of the payment of the \$50 was made it would seem that A should be entitled to recover the mules through replevin action. It would also seem that A might have an action for damages against B for his gross breaches of the contract.

—LIBERTY BOND—

Any food consumed over and above the needs of the human body is wasted.

—LIBERTY BOND—

We have to put every ounce of effort behind the men behind the guns.

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"Feeds and Feeding", by Henry and Morrison, is the recognized standard authority on the feeding of dairy cows, beef cattle, calves, hogs, horses and sheep. The authors at great expense and with much time and labor, have compiled the most important findings of the investigators of both the Old World and the New in the science of animal nutrition, together with the vast number of feeding trials, conducted in California and the experiment stations of other states, the whole being rounded out by the practical experiments of many of the leading stockmen of America.

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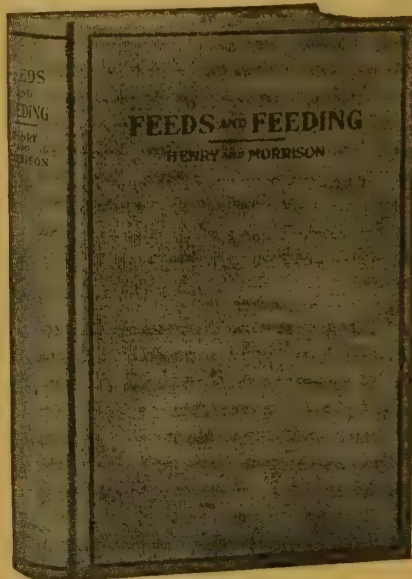
Full and complete information is given in regard to the feeding and feed value of California barley, how to obtain the best results, and giving the results of many barley feeding tests. (Pages 162, 303, 309, 360, 414, 454, 525, 590.)

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You can obtain one of these valuable books at no expense—just a few minutes' easy work. To any reader of California Cultivator who will secure for us only three new yearly subscriptions to California Cultivator at \$1.00 each—the regular subscription price, we will send a copy of the latest edition of "Feeds and Feeding" by Henry and Morrison. If you want to buy this book it will cost you \$2.25 anywhere. You know California Cultivator and how much valuable information you get from its columns each issue. You receive the best thought and experiences of many of the West's most authoritative writers, the results of many tests and experiments and the live stock, dairy and agricultural news of what is going on over the entire Pacific Coast at a cost of only \$1.00 per year. Your neighbor, if he is not already a subscriber, will be glad to have you show him a copy. You can get three new subscribers at \$1.00 each quickly and easily. Send us the \$3.00 and the subscribers' names and addresses and we will send the book to you postpaid. You may include your own subscription by paying a full year in advance of this date and including two new subscriptions at \$1.00 each. There must be at least two new subscriptions for one year.

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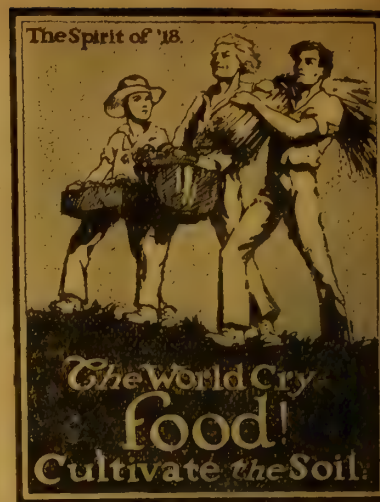
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## AUTOMOBILE TINKERITIS

A great many times, as records show, the first thing a new automobile owner begins to think about is whether or not the car, after having been run for a short time, needs something done to it, or in other words a little tinkering. If the malady known as "tinkeritis" were less common it might pass unnoticed, but unfortunately curiosity and uncertainty come in great big heaps even to well meaning ones. At least that is the determination of a tinker who writes for Successful Farming.

The plan and rule for all owners of machinery, from a watch up to an automobile, is to avoid tinkering with the thing unless absolutely necessary. You may be real sure you know what should be done; but it may be just as true on the other hand that you do not know. It is wonderful, but none the less reasonable for all that, how much damage the wrong kind of tinkering can do. One of the points of greatest interest for tinkers round an auto is the carburetor. A slight turn or two of adjustment nuts will quickly throw this apparatus out of adjustment. I have seen cases of men and boys spending whole hours at a time to see how they could make the motor perform by various adjustments of the carburetor when there was no necessity for it. The consequence in nearly every case was that some more experienced hand had to correct the mistakes of the tinkers. Then comes the regulator cut-out, that little device that cuts off battery from generator the instant the motor speed drops too low for charging the battery and so prevent the battery from discharging when the car comes to rest. The regulator cut-out is a delicate instrument at best, and all car owners who own electrically equipped cars should be absolutely sure it is left alone and touched only by persons who understand the nature of it. Usually, the factory has made the proper adjustment. In time undoubtedly, as heat from excessive speed charges the battery too much and too fast, there will be a fusion of the regulator contact points. In such an event be sure there is no tinkering done. Tinkering without actually correcting the defect will aggravate the trouble, but be sure the workman knows before he attempts it. A car came in one day with a discharged battery and I was asked to find out why the battery did not get any current from the generator. I found the regulator cut-out had been made a sort of experimental station for a number of workmen who had proved themselves mighty handy with pliers, as the marks showed. Result, there was nothing for me to do but tell the owner it was past repair and for him to buy a new one, but to be sure next time that it was not made the object of ignorant tinkering. Another fellow thought his battery needed a drink of something, but he did not stop to consider nor ask someone who really knew what should be done. He actually poured in some soda pop and later had to have a battery man take it all apart, clean it, rebuild and put in new solution. That bottle of soda really cost him \$12, but it is hoped he learned a lesson.

The habit does not seem to center itself so much on the larger mechanical parts as the smaller ones, and it is well that it does not. Once in a while you will find somebody who blames the valves and tries to get at them every time the motor misses fire. And so it goes.



The Cultivator Patterns



8738—Children's Coat. Cut in sizes 2, 4 and 6 years. The back and fronts of the coat are gathered at the neck and it is finished with a flat collar.

8522—Ladies' Slip on Blouse. Cut in sizes 36, 38, 40 and 42 inches bust measure. The blouse is to be slipped on over the head like a middy, and so it is made with deep opening at the neck.

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8311—Ladies' Waist. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The center front closing is stitched back to form a broad seam.

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8486—Misses' or Small Women's Dress. Cut in sizes 16, 18 and 20 years. The dress closes from neck to hem at center back and the neck is finished with a round collar.

8269—Ladies' One Piece Gathered Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. This one piece skirt has a fancy belt arrangement and slash pockets at the sides.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

Pattern Department  
California Cultivator  
Los Angeles

Household Department

A PATRIOTIC PIG TALE

This little pig went to market,  
And traveled from store to store,  
Buying all the white sugar  
Till the grocers had no more.

This little pig stayed at home  
And wished that Hoover were dead;  
While he gorged himself on wheatless  
days  
With dainties and whole-wheat bread.

This little pig had none,  
But a glutton nevertheless;  
For he hoarded his gold from the U. S. A.  
While he grunted his wail of distress.

This little pig said "Wee, Wee, Wee  
Send some other boy to France;  
The Germans might aim their guns to-  
ward me,  
And I don't want to give them the  
chance."

Our food administrators  
Urge farmers to raise more swine;  
But God protect our country  
From more of the human kind.  
—Mrs. Laura Mellinger, in Farmer's  
Guide.

NOTHING TO WORRY ABOUT—  
TOO MUCH TO DO

**N**OT a person living today in any civilized land is beyond danger of starvation. A few years ago it was stated as a truism that modern agriculture had rendered famine impossible

a dozen kinds of red-hot ruin that may flow from this war.

Assuredly there is plenty to worry over.

And yet — veritably it is a human miracle!—nobody worries.

This is not because men are insensitive to the discomforts of their current situation or blind to dangers ahead. The truth is instead that the generality of men are more alive than ever to the seriousness of conditions that daily twist tighter the pinch of difficulty and hardship.

But facing all these things, and quite conscious of their sinister meaning, humanity braces itself with a serene courage and quietly vows to take what comes without whining—regardless of cost.

The simple platitude practical philosophers have preached for ages without visible effect—that worry beforehand neither postpones an apprehended evil nor makes it easier to bear when it does befall—has at last been taken into common calculations.



Your Bond May Bring Him Home Again

anywhere in Europe and America at least. Nobody is saying that now.

Likewise, through all the present winter only a small proportion of people have had reliable assurance of getting from week to week enough fuel to warm homes and cook food.

In fact, quite apart from the supply of food and fuel, comparatively few families can feel secure against such failure or insufficiency of income as may soon subject them to severe privations. Already most homes have surrendered many comforts.

Above all else, there hang over unnumbered millions of households portents that threaten the direst of sorrows whenever the big guns boom on the battle-front.

And with those whose minds dwell on the larger affairs of humanity—the world's politics, education, and religion—optimism can not possibly be strenuous enough to shut out of view

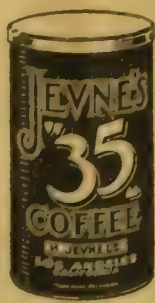
In the economical spirit of the times folks are honestly undertaking to eliminate the waste of attention and energy that worry diverts from work.

Accepting thus in advance the worst that can happen, folks find nothing that any longer looks unendurable. The habit grows on men of spending their imagination not in trying to picture how awful a disaster may be, but in framing to themselves a forecast of the alleviations and comforts which will enable them to bear it.

No man is going to worry much over what he is losing or about to lose (even though life itself is at stake) if his soul is centered on getting some great thing done—and he can see it almost accomplished.

Nobody is troubled over parting with his money if in exchange he is getting something that he wants more than dollars. Exactly so, any kind of

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spiritual or material sacrifice counts naught to the typical human if something big, fine, and enduring is to be obtained thereby.

Sacrifice pains only when, either because men can not see clearly or because there really is no good to be gained, the sacrifice appears useless.

But in this crisis everybody sees that if the nation gives, endures, and suffers all that's asked of it, the gain will be a world made safe again for the just, the generous, the innocent, the weak.

For that sake true-hearted men and women bind themselves by their own will not to flinch or complain at any requirement or any consequence.

That is why sickness seems in a hospital less a curse. It is likewise a big reason why people today are putting up cheerfully with inconveniences they would have railed against in mighty wrath a year ago, accepting restrictions in food and fuel that would at any time heretofore have driven them to rebellion, and thinking with entire calmness of eventualities in want and woe that lately would have cast them into fits of terror.

To go hungry, to go shabby, to pay exhausting taxes, to send loved ones into mortal danger! — if the whole mass of the people have to stand it, then one would be ashamed to be the weakling that first whimpered. And where everybody is unwilling to be the first to show the white feather, there will be obviously no white feather shown.

Always there is the saving thought: "What others can bear I can bear, too." And while that thought ties men together, their combined strength

carries giant loads without breaking.

So God intended. He made the race to bear burdens in common, to sacrifice lesser things for greater, and to live above worry.

And may mankind not forget, when peace comes again, the lessons they are learning now! — The Continent, Chicago.

—LIBERTY BOND—

#### PARCEL POST TO OUR BOYS IN FRANCE

Because of the great mass of candies, cakes, goodies of all kinds, tobacco, toilet articles, etc., mailed to our soldiers in France from the United States deliveries have been delayed and the service seriously embarrassed, and because it is now found that these things can be bought in France as cheaply and in some cases more cheaply than they can in this country, the war department has ordered:

"In future shipments to any members of the American expeditionary forces abroad will be limited to those articles which have been requested by the individuals to whom same is to be shipped, such requests having been approved by his regimental or higher commander. Parcel post shipments will be accepted by the postoffice authorities, and other shipments by freight and express companies only upon presentation of the above approved request in each individual case."

This order went into effect April 15.

—LIBERTY BOND—

#### FARM HOME DEPARTMENT OF IMPERIAL FARM BUREAU

The farm home department of Imperial County's farm bureau, under the direction of Mrs. Della J. Morris, is very enthusiastic and is doing excellent work. At present it is conducting the following campaigns: can-

ning, gardening, poultry, wheat conservation, and liberty pig. At a meeting of the chairmen of the 13 farm home centers at El Centro on April 6 the following were elected officers of the farm home department: Chairman, Mrs. Stuart Swink, Mt. Signal; vice president, Mrs. Wm. Moores, Seeley; secretary, Mrs. Walter S. Wilkinson, Meloland.

—LIBERTY BOND—

#### BULLETINS OF INTEREST TO HOMEMAKERS

Two bulletins which will be of interest to every homemaker in the land may be had for the asking. Write Department of Publications, U. S. D. A., Washington, D. C., and ask for Bulletin 927, "Farm Home Conveniences," by Madge J. Reese. It is a 32 page illustrated bulletin which will give many a homemaker ideas as to how she can secure labor saving helps. At the same time ask for Bulletin 955, "Use of Wheat Flour Substitutes in Baking," by Hannah L. Wessling. There are dozens of recipes for various kinds of breads, dumplings, grid-dle cakes, cookies, and almost everything that can be made from wheat flour substitutes.

—LIBERTY BOND—

#### NOT FOR RASTUS

"Eph, I think I'll go to war."

"Very well, Rastus, but whut branch am yo' gwinter jin—de Army, Navy or de aviation corpse?"

"De aviation corpse—whut dat?"

"Oh, dat am de flyin' department."

"You mean one o' dem airypplanes?"

"Yaas."

"No, suh! Lookaheah, niggah, when I dies I doan wanta dig ma grave wid ma head."—Ex.

#### OBSERVE RAISIN DAY, APRIL 30

Some Good Things to Help Observe April 30 and 364 Days Thereafter



RAISIN Day will be observed this year as in the years past. Especial effort is being made to extend the use of raisins in California. They are a home produced food; they can be used in an almost infinite variety of ways; they are wholesome, delicious, nutritive and a saver of sugar.

A Sun-Maid Raisin cook book may be secured free by writing California Associated Raisin Company, Fresno.

#### Lemon Sun-Maid Whip

Soak half a package of gelatine in three-quarters cupful of cold water for half an hour, then add one pint of hot water, one cupful sugar, the juice and grated rind of one lemon, and when it begins to set, beat in the stiff whites of two eggs and half a package of raisins. When cold serve with cream.

#### Baked Apple With Meringue

When baked apples are almost done, fill the centers with stewed raisins, cover with stiff froth made of the whites of eggs and powdered sugar, and bake for another ten minutes.

#### Raisin Tapioca

One cup raisins, one-half cup granulated tapioca, one-half cup sugar, one teaspoon salt, four cups water.

Wash and boil the tapioca until clear, add sugar, salt and raisins, which have been washed and dried. Pour into bowl, mold or put in individual cups, set in cold place until firm; turn out and serve with fruit sauce.

#### Raisin Biscuit

One cup chopped raisins, two cups flour, two teaspoons baking powder, one-half teaspoon salt, two tablespoons shortening, one-third cup milk.

Sift flour, salt and baking powder into bowl, add the shortening and rub in very lightly; add enough cold milk to hold together; add the raisins and mix. Place dough on floured board, roll or pat with hands until one inch thick, then cut with biscuit cutter and brush tops with cold milk; bake in hot oven 20 to 25 minutes.

#### Apple Sauce Cake

One cup of sugar, one-half cup of butter, one and one-half cups apple sauce, two teaspoons soda, almost level dissolved in sauce, one cup seeded raisins, one teaspoon cinnamon, one-quarter teaspoon cloves, one-quarter teaspoon nutmeg, two cups flour. Bake in a slow oven.

#### Candy Without Sugar

Two cups raisins, one cup chopped nuts, one-quarter cup honey.

Grind nuts and raisins in food chopper. Mix with honey. Pack under a weight for 24 hours. Cut into bars.

#### Oatmeal Cookies

Cream together one cup sugar, half cup honey, three-fourths cup lard or butter, six tablespoons milk, half cup Sun-Maid seeded raisins, two cups rolled oats, two eggs. Sift together two or more cups flour, half teaspoonful salt, two teaspoonfuls cream of tartar, one teaspoonful each of soda and cinnamon. Mix together and roll quite thick.

#### Raisin Chocolate Cookies

Two eggs, one cup brown sugar, one-half cup flour, one teaspoon baking powder sifted with flour, one-half teaspoon cinnamon, one-half teaspoon allspice, one cup seedless raisins mixed together with walnuts, citron, and candied orange peel, four tablespoons chocolate.

Drop teaspoon into pan and bake in moderate oven about ten or 15 minutes.

#### Raisin Marmalade

Two cups seeded raisins, one cup cooked and strained cranberries, one cup granulated sugar, one-half teaspoon salt.

Wash and dry the raisins; put through meat chopper; put in saucepan with two cups of water and the salt; boil slowly 30 minutes; add the cranberries and sugar, simmer until thick, about 40 minutes. This makes

## Styleplus Week the nation over



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& Co., Inc.

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**\$21 AND \$25**

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### America's only known-priced clothes

Styleplus Week is a national affair. What is the interest behind it? A big idea. Styleplus Week is a national exhibit of the distinctive style, fabrics, and tailoring, made possible at moderate price, by the Styleplus idea of concentrating a great volume on each grade.

Visit the Styleplus store in your town this coming week. This is the season to buy clothes with a reputation to maintain—a good time to get the Styleplus habit. If you do, you will satisfy your pride, get good quality and keep your outlay on the *thrift spirit* basis. The values in Styleplus Clothes stand out *better than their price*. You know the price *before* you go into the store.

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Styleplus distributors will sell **Styleplus Clothes \$17** (black label) as long as their supplies of this grade last.

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**HENRY SONNEBORN & CO., INC.**  
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a very tasty relish with cold ham or poultry.

#### North American Dish

Two cups yellow corn meal, one cup flour, one cup seeded raisins, one cup milk, two teaspoons baking powder, one teaspoon butter, one-half teaspoon salt, one egg.

Sift the flour, corn meal, salt and baking powder into bowl; add milk and well-beaten egg and the well washed raisins; mix. Pour into pan which has been brushed with melted butter, bake 20 minutes. This makes a very good wholesome and nourishing dish. Both the cornmeal and the raisins have good food value.

#### Rice and Raisins

Wash one cup of rice well, add one cup of seedless raisins, one quart of milk and one-half teaspoon of salt. Bake in a moderate oven until the rice is tender and the milk is absorbed. Serve hot with cream and sugar.

#### Raisin Pie

One cup seeded raisins, one cup sugar, one tablespoon flour, butter size of a walnut, one tablespoon vinegar, one and one-half cups boiling water, pinch of salt. Bake in a double crust.

#### Raisin Custard Pie

Line a deep pie tin with rich crust and bake; grind one-third box of seedless raisins, add a small amount of water and cook, thickening with a scant tablespoon flour and sweeten with one tablespoon sugar. When cool spread in bottom of crust. Make a custard of one pint of milk and yolks of two eggs, beaten together; as it is heated, add three tablespoons of sugar and one heaping tablespoon of cornstarch mixed. When cooked remove from fire and flavor with vanilla. Pour custard over the raisins in the crust and lastly cover with beaten whites of eggs. Brown in oven.

#### Rice and Raisin Pudding

One-half cup seeded raisins, one-third cup rice, one-half cup sugar, three cups milk, one cup water, two eggs, one-quarter teaspoon nutmeg (may omit).

Wash rice and place in double boiler with one cup water. Cook until water is absorbed. Add two cups milk, cook until rice is tender. To the remaining one cup milk, add the sugar, spice, and well-beaten eggs, combine with rice, and raisins, pour into pudding dish, set in pan of hot water and bake until custard is set.

#### Salad

To one cup of seeded raisins, add one cup of diced apples, one sliced banana, one shredded orange and mix lightly with a generous amount of sweetened and flavored whipped cream—or mix with mayonnaise. Sprinkle with chopped walnuts and serve.

One-half plumped raisins, two medium sized apples, one stalk celery, one-half cupful nutmeats, one-half cupful marshmallows, lettuce leaves, mayonnaise dressing.

Pare and core the apples and cut in small strips, chop the celery fine and quarter the marshmallows. Toss all together and serve on lettuce leaves with mayonnaise dressing.

—LIBERTY BOND—

#### ONE WEEK'S BUDGET FOR A FAMILY OF FIVE IN CANADA

This is what Canada asks of her people. Divide this allowance by five and compare it with what you are eating—and Canada is fighting our battles.

Milk—Seven quarts whole milk.

Fruit—Fourteen pounds according to season.

Fats—Two pounds butter or oleomargarine; one pound cooking fat.

Sugars—Three pounds of sugar; one pound corn syrup, molasses or honey.

Cereal Products—Ten pounds flour; ten pounds cereals in other forms.

Fresh Vegetables—Forty pounds potatoes; 14 pounds other fresh vegetables.

Meat and Meat Substitutes—Four pounds lean meat; two pounds fresh fish; one pound salt fish; one dozen eggs; one pound cheese; two pounds dried beans or split peas.

#### THE THRIFT STAMP ARMY

By Elias Lieberman

Out of the poor man's strain and stress,

Out of the rich man's fruitfulness,  
Millions and millions of little me  
Assert the might of democracy.  
We come in squads, platoons and files;

Our ranks stretch out for many miles;

Proclaimed by neither fife nor drum  
But sure as Loyalty we come!

We come! We come!

Our silent army plods ahead,  
Our bugles never blow retreat;  
Our ranks defy the whizzing lead,  
We fear not frost, we fear not heat,  
But grim as Death and like him dumb

We march ahead. We come! We come!

The rich man's feast, the poor man's crumb

Alike give life to us. We come!

We come! We come!

—LIBERTY BOND—

#### HOW HE GOT STAMPS

One of the Seattle dailies offered the school children a prize for the best essay on thrift stamps. A little fellow wrote this: "My muther give me 25c and told me to go to the barbur and have my hair cut. I went down town but I didn't have my hare cut I bought a thrift stamp. In a few days my gran paw give me 25c and told me I better get a hair cut. I went down town, but I didn't get a hair cut I bought a thrift stamp. Then my daddy give me 25c and said for pitty sake go down and have that red mop cut. I went down but I didn't go to the barbur I bought a thrift stamp. An if I can buy thrift stamps by lettin my hare grow I'll let it get as long as Rip van wunkles and I ain't no sissy either.

—LIBERTY BOND—

#### WEIGHTS AND MEASURES IN COOKING

One ounce flour, four level table-spoons.

One ounce butter, two level table-spoons.

One ounce ground coffee, five table-spoons.

One ounce cornstarch, three level table-spoons.

One ounce thyme, eight level table-spoons.

One ounce grated chocolate, three level table-spoons.

One ounce pepper, four level table-spoons.

One ounce salt, two level table-spoons.

One ounce mustard, four level table-spoons.

One ounce cloves, four level table-spoons.

One ounce cinnamon, four and a half level table-spoons.

One ounce mace, four level table-spoons.

One ounce curry, four level table-spoons.

One ounce chopped suet, a fourth of a cup.

One ounce olive oil, two table-spoons.

—LIBERTY BOND—

#### RUN BOATS WITH FISH OIL?

According to "Politiken," of Copenhagen, experiments have been made with motors for fishing boats to determine the practicability of using fish oils for operating motors. It is said that this has proved a success, and that it may be possible for the fishermen who now have boats equipped with kerosene motors to make some slight changes which will enable them to operate with fish oils. It is even proposed that the fishermen may make their own cod-liver oil while on the sea for use in their motors.

—LIBERTY BOND—

#### OUR LITTLE HIMMAHATE

We hope the Kaiser, when he dies,  
Will go to his sarcophagus  
With all his dirty, boastful lies  
Rammed down his blamed esophagus.

—LIBERTY BOND—

A single front, a single army, a single people.

## Superior Player Pianos

We handle the products of the famous Aeolian Co., the largest Piano manufacturers in the world, makers of the famous Pianola, the Stroud, Steck, Wneelock and Weber Pianos and the wonderful Aeolian Pipe Organ.

We offer as our lowest priced player the 'Aeolian Player Piano, which contains most of the features of the Pianola—it is a beautiful instrument, sweet toned, plays all the 88 note music. It will give much pleasure and render long and efficient service. Price \$480.

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The climax of the Player line is the Duo-Art—which is first a "straight" piano; secondly a player piano playing any roll, the motor being operated electrically enabling the player to devote his entire attention to the expression devices; and thirdly—with the special Duo-Art rolls, reproducing the actual playing of the world's great artists—Bauer, Gabrilovitch, Grainger, Saint Saens and scores of others. (We cordially invite you to hear this marvelous instrument).

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The House of Complete and Competent Home Furnishing Service



## Los Angeles Market

Los Angeles, April 17, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery ..... 38  
Dairy Exchange price past week on extras.  
April 10 11 12 13 15 16  
'18 ... 36 37 37 37 37 38  
Rets. wk. ending April 16, 263,300 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. .... 26  
Eastern Daisies ..... 28½  
Domestic Swiss ..... 40

## EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extras ..... 39  
Pullets ..... 36  
Case Count ..... 37½  
Dairy Exchange prices past week on fresh extras.  
April 10 11 12 13 15 16  
'18 ... 36 37 37 37 37 39  
Rets. wk. ending April 16, 4168 cases.

## POULTRY

We quote to producers:  
Food administration now allows sale of hens for eating.  
Broilers ..... 30@36  
Fryers ..... 34  
Roasters, 3 lbs. and up ..... 34  
Ducks, lb. .... 20@27  
Roosters, old ..... 16  
Turkeys ..... 30@34  
Geese, lb. .... 20  
Rabbits, live, 17@18; dr. .... 35

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, April 17, by the Cudahy Company.  
Cattle—  
Beef steers, av. 1000-1100 lbs. 10.50@11.00  
Heifers, good ..... 8.00@8.50  
Cows, good ..... 8.00@8.50  
Canners ..... 4.00@5.00

Hogs—  
Av. 125 lbs. .... 15.00  
Av. 150 lbs. .... 16.00  
Av. 175-225 lbs. .... 17.00  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers ..... 12.00  
Ewes ..... 10.00  
Lambs ..... 13.50@14.00  
Yearlings ..... 10.50@11.00

## POTATOES

Wholesale selling price:  
Oregon Early Rose ..... 2.25  
Northern Burbank, cwt. .... 1.85@1.90  
Idaho Russets ..... 1.40@1.50  
Locals ..... 1.20@1.25  
New, lb. .... 8  
Sweets, lug ..... 1.60

## ONIONS

Wholesale selling price, cwt.:  
Brown ..... 1.30@1.35  
White ..... 3.00  
Garlic ..... 7

## VEGETABLES

Wholesale prices:  
Artichokes, doz. .... 70@85  
Jerusalem, lb. .... 7½  
Asparagus ..... 11@13  
Beets, sk. .... 2.00  
Cabbage, lb., 3@3½, sk. .... 1.75  
Red, lb. .... 5  
Carrots, doz. .... 30  
Cauliflower, doz. .... 1.25  
Celery, doz. .... 70  
Cucumbers—Hothouse, doz. .... 75@2.50  
Egg Plant, lb. .... 25  
Horseradish, lb. .... 15  
Lettuce, doz. .... 30  
Leeks ..... 30  
Mint, doz. .... 40  
Onions, green, doz. .... 25  
Peas, Tel., lb. .... 8@10  
Peppers, Chili, lb. .... 30  
Parsnips, doz. .... 30  
Parsley, doz. .... 20  
Radish, doz. .... 20  
Rhubarb, C. W. bx. .... 1.25@1.35  
Strawberry ..... 1.50  
Romaine, doz. .... 40  
Spinach, doz. .... 30  
Squash—Crockneck ..... 70@75  
Hubbard, lb. .... 3½  
Summer, cr. .... 1.85  
Tomatoes, lug ..... 2.25  
Turnips, doz. .... 30  
Watercress, doz. .... 35@40

## FRUITS

Wholesale prices:  
Apples—Bellflowers ..... 1.75  
King David ..... 2.00@2.25  
W. W. Pearmain ..... 1.65@2.25  
Spitzenberg ..... 2.50@3.00  
Y. Newton ..... 1.60@2.25  
Bananas, lb. .... 5½@6  
Loquats, lb. .... 10  
Pears, Winter Nellis, lug ..... 2.25

## CITRUS

Lemons, packed, 5.50@5.75; loose ..... 4.50  
Juice ..... 3.50  
Oranges—Navels, bx. .... 3.75@6.00  
Valencias ..... 6.25  
Grapefruit ..... 3.00  
Limes, basket ..... 75  
Tangerines, lug ..... 2.25

## DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, ¼c less.  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 16½; extra ch., 17½; fy., 18½; pears, 12; peaches, ch., 11; ex. ch., 12; fy., 12½; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 15½; 40-50s, 14½; 50-60s, 13½; 60-70s, 12-7-8; 70-80s, 11½.  
Figs—Calimyrnas, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

## NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. .... 25  
N. P. U. .... 23  
Nonp. .... 26  
Peanuts, raw ..... 17

Pecans, lb. .... 20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. .... 20  
No. 2 Soft Shell, lb. .... 16  
Budded, Diamond Brand ..... 24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) ..... 21  
Prices delivered in East 1½c higher.

## RICE

See San Francisco rice market.

## BEANS

These are prices made by wholesaler to retailer.  
Lady Washington ..... 14.50  
Limas ..... 14.50  
Pinks ..... 9.25  
Manchurian Reds ..... 9.25  
Baby Mex. .... 9.00  
Garbanzos ..... 10.00  
Small Whites ..... 14.50  
Blackeyes ..... 10.00  
Tepary ..... 10.00@11.00  
Lentils ..... 25.00

## HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oats ..... 26.00@28.00  
Volunteer Oat ..... 14.00@16.00  
Wheat ..... 23.00@26.00  
Barley ..... 24.00@27.00  
Alfalfa ..... 20.00@22.00

The Alfalfa Growers' Association of Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where the \$1.50 freight rate applies, and \$29.00 f. o. b. where the \$2.50 freight rate applies.

## GRAIN AND FEEDSTUFFS

The grain market is yet entirely unsettled with no quotations whatever being made other than at moment of sale. It is thought another week will see definite quotations.

## San Francisco Markets

San Francisco, April 16, 1918.

## BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:  
Two-pound squares, parchment wrapper, ¼c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Extras ..... 39  
Prices on butter are practically 15 cents above year ago this date.  
Prices Extras past week and year ago:  
April 9 10 11 12 13 15  
'18 ... 39 37½ 37½ 38½ 39 39  
'17 ... 39 39 39 39 39 39  
Rets. wk. ending April 15, 633,200 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal. Flats, 26½; Y. Am. .... 27½  
Jack cheese, full cream ..... 26@27  
Half skim ..... 14@17

## EGGS

Dairy Exchange Quotations:  
Extras ..... 39½  
Firsts ..... 37½  
Selected Pullets ..... 37½  
Firsts ..... 36  
Prices Extra past wk. and yr ago:  
April 9 10 11 12 13 15  
'18 ... 37½ 37½ 38 38 39½ 39½  
'17 ... 30 30½ 31 32 31½  
Rets. wk. ending April 15, 17,065 cases.

## POULTRY

We quote to producers, lb.:  
The food administration now allows sale of hens for food. Prices are expected to come down.  
Roosters ..... 21@23  
Broilers and fryers: ¾ to 1½ lbs., 30@35; 1½ to 3 lbs., 35@40.  
Geese, lb. .... 27@30  
Hens, lb. .... 30@31  
Squabs, doz. .... 3.50@5.00  
Ducks ..... 32@35  
Belgian Hares, live, lb. .... 19@20  
Turkeys ..... Nominal

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.  
Steers, lb., 10½@12; thin, 7@10; cows and heifers, 8@10; thin, 6½@7½; calves, 8@11.  
Sheep—Lb. gross weight: Fat, unshorn wethers, 14½@15; ewes, 12@12½; lambs, yearlings, 16@17; milk, 14@14½; shorn sheep, 1¼@2 less.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 16; 140 to 300 lbs., 17½; 300 to 400 lbs., 17.

## POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks ..... 1.25@1.50  
River ..... 1.00@1.40  
Yakima Gems ..... 90@1.30  
Sweets ..... 5.00@7.00  
New, lb. .... 5@6½  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.50@1.75; high top, 1.50@1.75; Garnet Chile, 2.75@3.00; White Rose, 2.00@2.25; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

## ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown ..... 80@1.00  
Bermudas ..... 2.00@3.00  
Garlic, lb. .... 3@3½

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 20@40  
Asparagus, lb. .... 4@6  
Beets, sk. .... 75@1.00  
Beans, lb., String, 15@17½; Wax, 12½@15  
Carrots, sk. .... 85@1.00  
Cauliflower, doz. .... 30@50

Celery, cr. .... 2.00@2.25  
Cucumbers, bx. .... 2.00@2.75  
Egg Plant, lb. .... 5@15  
Lettuce, cr., Southern, iced ..... 1.25@1.50  
Uniced ..... 60@1.00  
Onions, green, bx. .... 65@75  
Parsnips, sk. .... 85@1.00  
Peas, lb. .... 4@6  
Peppers, Bell, lb., 10@12½; Chile, 12½@15  
Pumpkins, sk. .... 85@1.00  
Rhubarb, Straw, bx. .... 60@1.00  
Squash, Cream, lug ..... 75@1.00  
San Jose ..... 1.00@1.25  
Summer, cr. .... 1.40@1.75  
Spinach, cr. .... 50@75  
Tomatoes ..... 1.50@2.50  
Turnips, sk. .... 75

## FRESH FRUITS

Apples—Spitzenberg, 2.00@2.50; Red 1.00@1.50; Newton Pippins, 1.00@1.75.  
Pears—Winter Nellis bx., 2.00@2.25; winter pears, lug, 1.50@1.75.  
Avocados, doz. .... 3.00@6.00  
Bananas, Hawaiian, lb. .... 5@6  
Loquats, lb. .... 12½@15  
Pineapple, doz. .... Nominal  
Strawberries, cr. .... 1.50@1.75  
Citrus Fruits—Lemons, bx., according to size, fy., 3.00@6.00; lemonettes, 2.00@3.50; grapefruit, fy., 2.50@3.25; ch., 2.00@2.50. Oranges—Bx., navel, fy., 4.50@7.50; ch., 4.00@6.00; mandarins and tangerines, per half orange box, 2.25@3.00; cr., 1.50@1.75; seedless oranges, according to size, 2.50@4.50; Valencias, from 100s to 228s. 5.25@6.00.

## DRIED FRUITS

Not producers' prices but prices of wholesaler to retailer.  
Peaches—Unpeeled, bulk basis, standard, 10; ch. 10½; extra ch., 11; fy., 11½.  
Apricots—Bulk basis: Standard, 13½; ch., 15; extra ch., 15½; fy., 16½; extra fy., 17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8; 40s, 8½; 30s, 9½.  
Apples—In 50-lb. bxs., lb.: Fy., 10; extra ch., 15; ch., 15.  
Pears—Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 10-oz. cartons, 4.20 for 48s and 6.15 for 36s; fy., 4.20 for 48s and 3.15 for 36s; do, 12-oz., 45 to cs., 5.25; ch., 10-oz. cartons, 3.00 for 36s; do, 12-oz. cartons, 45 to cs., 3.10. In bulk: Sundried, 1.75; fy., 1.90; ch., 1.75.  
Sulphur-bleached Thompsons, ex. fy., 5.37½; fy., 5.12½; ch., 4.87½; soda-bleached, 4.75.  
Loose: One-crown, 4.15; two-crown, 3.40; three-crown, nominal; four-crown, 3.20.

## NUTS

Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. X. L., 19½; Ne Plus, 18½; Drakes, 16; hard shell, 11½.  
Chestnuts, Cal. lb. .... 10@20  
Peanuts, Va. .... 16  
Pecans, lb. .... 19@20  
Pine Nuts ..... 22@25

## HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

## BEANS

Jobbers' prices, cwt., recleaned:  
Limas ..... 13.90@14.10  
Bayous ..... 9.00@9.25  
Small Whites ..... Nominal  
Large Whites ..... Nominal  
Mexican Reds ..... 9.40@9.60  
Blackeyes ..... 8.75@8.90  
Pinks ..... 8.00@8.15  
Red Kidney ..... Nominal  
Cranberry ..... Nominal  
Teparies ..... 10.50@11.00

## RICE

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

## HAY

Under date of April 13, Scott, Magner & Miller says:  
Receipts past week, 993 tons. Although there is a considerable decrease in the receipts the demand has been very light and it has been difficult to move arrivals to advantage. Large quantities of alfalfa have been offered during the week. Demand for stock hay is particularly lax owing to the abundance of pasture. The car situation has not shown much improvement of late and it is difficult to get cars in many places. The cutting of first crop alfalfa on the river will commence shortly and advices are to the effect that it has already started in the lower San Joaquin.  
Fancy Wheat Hay (light five wire bale) .... 27.00@28.00  
No. 1 Wheat or Wheat and Oat Hay ..... 24.00@26.00  
No. 2 Wheat or Wheat and Oat Hay ..... 21.00@24.00  
Choice Tame Oat Hay ..... 24.00@26.00  
Other Tame Oat Hay ..... 21.00@23.00  
Wild Oat Hay ..... 20.00@22.00  
Barley Hay ..... 20.00@23.00  
Alfalfa ..... 19.00@21.00  
Stock Hay ..... 15.00@17.00  
No. 1 Barley Straw ..... 50@80

## GRAIN

As to grain and feed prices see note under Los Angeles grain prices.  
SEEDS  
Prices in round lots, lb.:  
Millet, recleaned ..... 5@5½  
Alfalfa, lb. .... 20@21  
Flax ..... 7@7½  
Hemp ..... 5@5½  
Rape ..... 2½@3

## Citrus Fruit Market

Los Angeles, April 17, 1918.

Valencias are beginning to go forward and are receiving good prices. The earliness of the season is not yet realized by the Eastern market which is still somewhat doubtful of the sweetness of the fruit, and its principal demand is still for Navels and seedlings. The heavy run of small seedlings, Sweets, St. Mikes, and Bloods is lowering prices on these varieties. Shipments of oranges from Southern California have been averaging 85 cars daily; from Central California 20 cars.

The lemon market is lower but very satisfactory. Foreign lemons sold in New York have been of poor quality. Pickings in the La Habra, Whittier and Ventura County districts are heavy.

Shipments  
Cars of citrus fruit from California since November 1, 1917: Southern California, oranges, 7441; lemons, 1925; total, 9366. To same date last season: Oranges, 18,371; lemons, 3151; total, 21,522. From Central California: Oranges, 2297; lemons, 115; total, 23,085. To same date last season: Oranges, 4059; lemons, 164; total, 4223. From Northern California: Oranges, 203; last year same date, 844.

## AT THE AUCTIONS

April 10

New York: 16 cars. Navels, 3.80-6.40; Seed, 4.80-5.55, Sweets, 4.90-5.30, Bloods 5.25-5.45, St. Mikes 5.20-5.45, lemons 4.60-4.80.

Philadelphia: 3 cars. Nav. 4.95-5.95, Val. 7.15, St. Mikes 6.25-6.70, Bloods 6.10-7.55.

Cincinnati: 4 cars. Nav. 3.95-6.05, lem. 5.65-6.80.

St. Louis: Nav. 2.75-5.05, Sweets 3.25-5.65, Jaffa 3.35-3.40.

Pittsburg: 8 cars. Nav. 2.95-6.10, Val. 5.75-6.60, lem. 2.95-4.70.

Cleveland: 5 cars. Nav. 3.60-6.40, Sweets 3.65-5.20, lem. 4.90-5.45.

Boston: 9 cars oranges, 1 lem. Nav. 2.15-6.35, Seed. 4.80-5.65, lem. 1.85-4.75.

April 11

New York: 14 cars oranges, 1 lem. Nav. 3.75-6.70, Val. 5.65-6.95, Sweets 4.75-5.90, lem. 4.35-4.80.

Boston: 12 cars. Nav. 2.00-5.85, Val. 3.95-6.50, Bloods 4.55-5.90, lem. 2.10-4.10.

Philadelphia: 2 cars. Nav. 3.90-5.80, Sweets 5.00-6.15.

April 12

New York: 9 cars oranges, 2 lem. Nav. 3.35-6.40, Seed. 5.00-5.95, lem. 3.45-3.85.

St. Louis: 3 cars. Nav. 3.55-4.10, Val. 4.35-4.90, lem. 5.35-6.10.

Boston: 6 cars oranges, 1 lem. 3.10-5.90, lem. 3.30-4.10.

Pittsburg: Val. 5.60-6.35, Nav. 4.65-6.65, lem. 2.70.

Cincinnati: 7 cars. Val. 6.15, Nav. 4.80, lem. 4.05-5.65.

Cleveland: 3 cars. Nav. 4.10-6.95, Jaffa 2.80-3.65, lem. 5.05-6.20.

April 15

New York: 32 cars. Nav. 3.40-6.85, Sweets, 4.45-6.20, Seed 4.75-5.30, Val. 4.45-6.80, lem. 2.75-4.95.

Pittsburg: 8 cars. Nav. 5.05-6.15, Val. 6.05-6.70, lem. 4.20-5.05.

Boston: 12 cars. Nav. 3.10-6.55, lem. 2.65-5.05.

Cincinnati: 5 cars. Nav. 3.25-5.20, lem. 4.75-6.25.

Cleveland: 7 cars. Nav. 4.00-6.80, Sweets 2.45-3.90, lem. 4.15-5.10.

April 16

New York: 20 cars oranges, 5 lem. Nav. 3.00-6.60, Val. 4.60-6.00, lem. 2.90-4.45.

Philadelphia: 3 cars. Nav. 3.40-6.20.

Boston: 7 cars. Nav. 3.50-5.50, Sweets 5.30-6.05, Bloods 4.15, lem. 3.30-5.00.

## MARKET NOTES

Los Angeles markets have been so filled with potatoes that almost disastrous prices have obtained, but it is now predicted that the bottom has been reached and recovery will soon be made. Northern Burbanks are now quoted around \$1.35 and some even as high as \$1.65, the latter figure being a material advance. Northern potatoes are not now coming into market though many Idahos are arriving.

The strawberry has been very slow in appearing in market this spring and the fruit has been in need of liberal sugaring. However, arrivals are more frequent, and another week will see immense quantities in the market. Imperial fruit has been the principal early fruit, and the Gardena section will not begin until next week.

Shipments of cabbage will be very heavy for the remainder of this month and probably all of May. There has been serious loss in the cabbage fields this year because of going to seed. Lettuce quality has also been under normal this season.

Southern California celery shipping has practically ceased for this season. Early cucumbers are in bloom.

The exceptionally high price which has obtained with cotton finally broke, and \$4.00 per bale has been cut off from New York prices. One cause of the break has been the conference at Washington of cotton manufacturers and the possibility of the government taking a hand in price fixing. Brokers have ceased handling to a large extent, and the manufacturer buys only from hand to mouth.

For the year preceding April 1, 1917 the local inspection office of Omaha handled from Wyoming, South Dakota, Nebraska and Montana 768,029 range cattle.

All butchers and retail meat dealers in Boston have adapted the "cash and carry" plan, though some who have conducted a credit business for years continue, but add three per cent to all prices.

Wheat on farms March 1, 1918 was esti-



mated to be 111,272,000 bushels. This is slightly greater than the amount in 1917 and less than half that of 1916. The average covering a period of years is 150,000,000 bushels, or 22 per cent of the entire crop.

During the month of February the prices paid to producers of the United States increased 6.3 per cent on the principal crops; on March 1 prices were about 39.9 higher than a year ago, or 108.4 higher than two years ago.

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

#### —LIBERTY BOND—

#### PARTIAL LIST OF CALIFORNIA SHIPMENTS

From post card reports to the bureau of markets, United States department of agriculture, Miss Hoey makes report of the following shipment of cars of products from California for the week April 8 to 15: Apples, 4; artichokes, 24; asparagus, 56; cabbage, 56; cauliflower, 8; celery, 1; dried apples, 10; dried apricots, 2; dried beans, 8; dried peaches, 9; dried prunes, 27; lettuce, 41; mixed vegetables, 64; mixed fruit, 6; mixed fruit and vegetables, 1; mixed dried fruit, 2; onions, 11; potatoes, 15; raisins, 23; rhubarb, 9; Mexican tomatoes into state, 34; dried olives, 1; green olives, 1; dried corn, 1.

#### —LIBERTY BOND—

#### HINTS FOR TRACTOR USERS

Some reasons for loss of compression:

1. Valve not seating due to improper adjustment of tappet rods.

2. Carbon between valve and seat, or pitted valves.

3. Broken piston ring.

4. Worn pistons or cylinders.

What to do:

1. Adjust tappet rods to thickness of plain business card.

2. Clean and grind valves.

3. Renew piston rings.

4. Renew pistons.

Why the motor misses:

1. Broken porcelain in spark plug.

2. Broken wire from magnet to plug, or broken battery wire.

3. Magneto points pitted or improperly adjusted.

4. Distributor brushes dirty.

5. Improper adjustment of carburetor.

6. Oil level too high, foul plugs.

Why the engine knocks on a hard pull:

1. Carbon deposits in cylinders which becoming hot pre-ignites.

2. Carburetor adjustment too rich.

3. Sparks up too high.

4. Loose bearing.

What to do:

1. Clean out carbon and it is well to grind valves at the same time as there will be a carbon deposit formed on seat.

2. Shut off carburetor until motor spits back on open throttle, then open very slightly.

3. On hard pulls it is best to run motor with a slightly advanced spark, getting more power as it is desired by feeding more gas. Spark is speed, gasoline is power.

#### Motor Starts Hard

This may be due to weak spark.

Where batteries are used, keep them dry. If machine is standing out of doors keep the magneto covered as a damp or wet magneto grounds and will not produce a spark strong enough to ignite the mixture. Air adjustment on carburetor may be set to allow too much air to enter. If you have no way to choke the carburetor cover the air intake with a cloth until motor warms up. This will allow the motor to draw in a rich mixture which will start more easily. If you have the position of the needle valve marked it will sometimes help to open the needle valve just a trifle until the motor is warm, then it can be closed again to the former position. As a rule a motor starts harder in cold weather, due at the present time to the low grade of gasoline, which will not vaporize as readily as when the

weather is warm. In cold weather it is good policy to have a hot tube connected from an exhaust line to the air intake on the carburetor. This will insure a much better mixture and give a smoother running motor.

#### Motor Stops Suddenly

Causes to look for:

1. Broken porcelain on spark plug.

2. Broken wire to plug.

3. Float valves stuck, caused by dirt in float chamber.

4. Water in gasoline. Drain carburetor for water.

5. Obstruction in feed line to carburetor caused by waste or other foreign substance in gasoline line.

#### Motor Runs Hot, Water Boils

A low or retarded spark will cause a motor to overheat almost as rapidly as lack of water in the water system. Always work the motor with as high a spark as will pull the load to best advantage. Watch your motor and you will find that at a certain position of your spark lever it will run smoother and do better work than in any other. As you wish to run slower or faster feed the gasoline for the difference in power or speed.

An obstruction in the water line from old hose closing up, or dirt in the radiator caused from sediment or rust will retard circulation. Drain your radiator or renew your hose as the case may be. By watching your cooling system and being sure that the water is circulating you will find that your motor is much more efficient and uses less gasoline. Internal combustion engines are most efficient when the temperature of the water in the cooling system is just below boiling point.

Oil is another factor that is to be taken into consideration. Poor oil is expensive at any price. It will not only cause a motor to heat but will burn out bearings and form carbon deposit in the combustion chamber; in fact it would be a source of grief from start to finish. Good oil not only prolongs the life of the motor but helps to keep trouble out.—Successful Farming.

#### —LIBERTY BOND—

#### WHY KEEP SHEEP

Why the average American farmer should keep at least some sheep upon his premises.

1. The initial investment in foundation stock is small.

2. Expensive buildings are not necessary.

3. Expensive machinery is not required.

4. Less productive land can be utilized.

5. Sheep will eat and relish almost every class of weeds.

6. By cleaning out the fence rows sheep destroy the winter protection of many injurious insects.

7. Due to the fineness of the mastication of their food, very few weed seeds are found in sheep droppings.

8. Sheep are of great value in clearing brush land.

9. Sheep are dual purpose animals.

10. Crop yields are increased by the constant and uniform distribution of rich manure.

11. The excreta of sheep is rich in nitrogen and potassium.

12. Less plant food is removed from soil by sheep than by grain crops.

13. The cost of maintenance is small.

14. Sheep make profitable use of fodder left in corn fields after corn is harvested.

15. Sheep can be made marketable without grain.

16. Wool and lambs are more easily transported than grain crops.

17. Rapid and frequent monetary returns.

18. Reasonably large percentages of profits under normal conditions.

19. Wool and mutton advanced in price before the war and a sudden drop in value is not to be expected.

20. Less labor is required on a sheep farm than on a grain farm.

21. Labor on the farm is more evenly distributed throughout the year.

22. Sheep require little care except during the usual slack periods.

23. Children as a rule like sheep and this is a good time to develop future shepherds.

24. A flock of sheep on the farm furnishes a fresh supply of meat at any time of the year.

25. Because of the comparatively low cost per animal, sheep are more easily improved than most other types of live stock.

26. Sheep are more prolific than horses and cattle.

27. The Western sheep ranches are rapidly disappearing and it is up to the small farmers to make up the deficiency.

28. The population of the United States is increasing, while the number of sheep is steadily decreasing.

29. As a patriotic duty in the present world crisis, we must produce more wool and mutton.

#### —LIBERTY BOND—

#### BURN WOOD AND SAVE COAL

The United States food administration is appealing to every home in the land to burn wood for heating, and so far as possible for cooking purposes. California is not wooded as much as many Eastern states, but we believe it has done more towards growing its own fuel than any other state in the Union. On account of this thousands of trees will be planted this spring. Every eucalyptus tree planted means a saving of coal and possibly a more valuable service.

#### —LIBERTY BOND—

#### INVESTMENTS FOR FARMERS

"The investments of the farmer which may pay the largest interest are the investments in fertilizers, in good live stock, in good machinery and other forms of equipment." —Dean F. B. Mumford, University of Missouri.

#### —LIBERTY BOND—

Sour orange trees of the Seville district of Spain were seriously injured by frosts last spring. The crop of the

whole of Andalusia for the past season was only 60 per cent of normal in consequence. Practically the entire crop goes to Great Britain for government use, being made into marmalade for the soldiers.

#### —LIBERTY BOND—

A survey of the soft-corn situation is being made by the department of agriculture throughout corn producing sections of the Union. Speedy handling of the large supply of soft corn in the country is necessary if the crop is to be saved.

#### —LIBERTY BOND—

Experiments are being made in manufacturing "leather" from fish skins. The United States bureau of fisheries reports that considerable success has been attained along this line. What next, we wonder! But let 'em come.

#### —LIBERTY BOND—

#### A PIECE OF GOOD FORTUNE

In these days of high prices it is refreshing to find one article of nationwide demand that costs no more now than it did before the war.

The Youth's Companion subscription price, \$2.00, will not be increased nor will the contents of the paper be diminished. The 52 issues of 1918 will be packed full of the best stories by the most popular writers. The editorial page, the boys' page, girls' page, family page and all the departments will continue to bring a vast amount of cheer, good entertainment and information for every reader in the family circle.

By special arrangement new subscribers for The Companion can also have McCall's Magazine—the fashion authority—for 12 months, both publications for only \$2.25.

Beginning with the issue of April, 1918, McCall's Magazine is doubled in volume, its page being now the same size as The Youth's Companion's. For the present there is no advance in price, and the offer of the enlarged McCall's and The Youth's Companion for \$2.25 is an unparalleled bargain.

Send all orders to The Youth's Companion, St. Paul Street, Boston, Massachusetts.

#### —LIBERTY BOND—

#### FEATURES OF SAMSON SIEVE-GRIP TRACTORS

The Model S-25 Samson Sieve-Grip tractors have several exclusive and patented features which place them among the foremost of light farm tractors on the market today. The outstanding features of this effective machine are; the Sieve-Grip wheel, lubricated roller pinion, No-dust-Moist-Rizer, automatic control.

Every farmer who is in reach of the great demonstration to be held in Davis next week should be on hand and ask the Samson man regarding the details of these valuable features.

#### —LIBERTY BOND—

#### INDEPENDENT IRRIGATION

Mrs. M. Salque has leased her 60 acre ranch south of Los Angeles and, to be sure of a water supply, has purchased a Layne & Bowler 40-foot 12 inch pump, to be driven by a 20 horse power G. E. motor.

#### —LIBERTY BOND—

#### WEATHER CONDITIONS

San Francisco, Cal., April 13, 1918.

STATIONS	Rainfall			Temp.
	Wk.	Season.	Norm.	
Eureka	.93	29.26	40.58	66 36
Red Bluff	.88	16.80	22.29	74 28
Sacramento	1.04	12.41	17.91	72 42
San Francisco	.60	15.72	20.47	68 46
San Jose	.44	12.39	15.38	76 42
Fresno	.00	6.87	8.47	82 42
San Luis Obispo	.04	22.46	18.44	74 44
Los Angeles	T	14.85	14.54	86 50
San Diego	T	8.81	9.17	80 52

## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

**BRENTWOOD IRRIGATED FARMS, In Contra Costa Co., 63 Miles from San Francisco**

**BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco**

#### STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, MARCH 21, 1916.

of California Cultivator, published weekly at Los Angeles, Cal., for April 8, 1918.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Frank H. Thomas, who, having been duly sworn according to law, deposes and says that he is the publisher and business manager of the California Cultivator and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

NAME OF—  
Publisher, Cultivator Publishing Co.  
Editor, C. B. Messenger  
Managing Editor  
Business Manager, Frank H. Thomas  
Los Angeles, Cal.  
Los Angeles, Cal.  
Los Angeles, Cal.

2. That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)  
Cultivator Publishing Co.  
Frank H. Thomas  
R. M. Teague  
Los Angeles, Cal.  
San Diego, Cal.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)  
None.

4. That the paragraphs next above, giving names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is—  
(This information is required from daily publications only.)

Sworn to and subscribed before me this 26th day of March, 1918.  
M. E. STORRS, Notary Public in and for Los Angeles County, California (SEAL)  
(My commission expires March 22, 1921.)



# Facts Versus Claims

## As Good as Eight Horses

"We have done just as much work with our 10-20 Model J as could be done with eight head of horses.

"We broke 40 acres of sod, pulling two 14-inch plows; harvested 300 acres pulling two binders without a horse in the field.

"We threshed 400 acres of wheat, using a 20x36 separator; plowed about 250 acres of stubble land, with three 14-inch plows; disced about 70 acres, and drilled 310 acres, pulling two 12-disc drills and hauled the hay loader.

"During all this time we used \$140.00 worth of kerosene, including a small amount of gasoline, and \$40.00 worth of lubricating oil.

"Even if eight head of horses could be fed on \$180.00 the same length of time, the tractor is the cheapest, because the next eight months it doesn't cost anything while the horses are still eating their feed. Our farm power will always be 'The Little Fellow With the Big Pull.'"

Your tractor friends,  
VICTOR JOHNSON & SON.

(Address upon request.)

## How to Choose Your Tractor

There are certain fundamental principles upon which you can judge a tractor and its adaptability to your particular requirements. You can base your opinion upon facts and reduce to a minimum any element of uncertainty or gamble.

Claims, coupled with so many different types of tractors, are no doubt confusing. Everyone has the "best." Mere claims, however, mean nothing to you.

### STUDY THE SPECIFICATIONS

There are no restrictions on rating a tractor. By studying the motor specifications, method of power transmission and drive, together with the weight and traction surface, you can figure out the reasonableness of one claim as compared with another. And isn't it wise to lean toward the tractor which has been tried and proved over a period of years, conservatively rated and backed by a reputable manufacturer rather than the one for which unbounded claims must be made in order to find a market for it?

Price per pound is a poor basis for comparison. Cast iron requires heavier though cheaper construction than steel. Even steel castings are heavier though less costly than drop forgings. Bearings and bearing metals vary in cost from a few cents to more than a dollar a pound—STUDY AND COMPARE THE SPECIFICATIONS!

Sandusky Tractors are not built to meet price competition. There are many places wherein it would be possible for us to reduce the cost of manufacture without changing the appearance of these machines. They would no doubt work just as satisfactorily at the beginning. Is it reasonable to assume, however, that they would last as long? That they would be as dependable? That they would be as cheap in the long run? You can answer these questions yourself.

### SATISFACTION GUARANTEED

We guarantee The Sandusky Tractor to do satisfactory work on your farm. We demonstrate its ability to fulfill our liberal operation guarantees and then stand back of every machine, not only with a full year's guarantee, but also with the only Guaranteed Free Service plan in existence.

### WRITE FOR BOOKLETS

Write for a free copy of "Power On The Farm," issue J-76 covering the Model J, or issue E-76 covering the Model E. They fully cover design, construction and ability of both machines, besides containing worth while information for the man considering the purchase of a tractor.

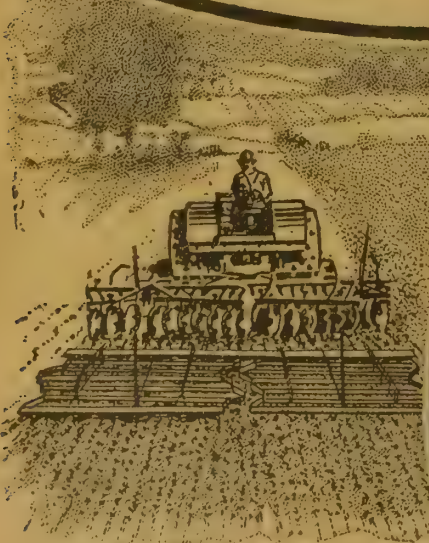
The Dauch Mfg. Co., Sandusky, Ohio, U. S. A.

Los Angeles, Calif., Branch:--126 N. Los Angeles St.

Principal Factory Branches, equipped with efficient service organizations, and carrying complete stock of parts: Bloomington, Ill.; Lincoln, Neb.; Fargo, N. Dak.; Sioux Falls, S. Dak.; Lewistown, Mont.; Wichita, Kans.; Los Angeles, Calif.; Sacramento, Calif.; Dauch Mfg. Co. of Texas, Dallas, Texas; Export office, 42 Broadway, Rooms 1001-1010, New York City.



**THE SANDUSKY TRACTOR**  
"THE LITTLE FELLOW WITH THE BIG PULL"



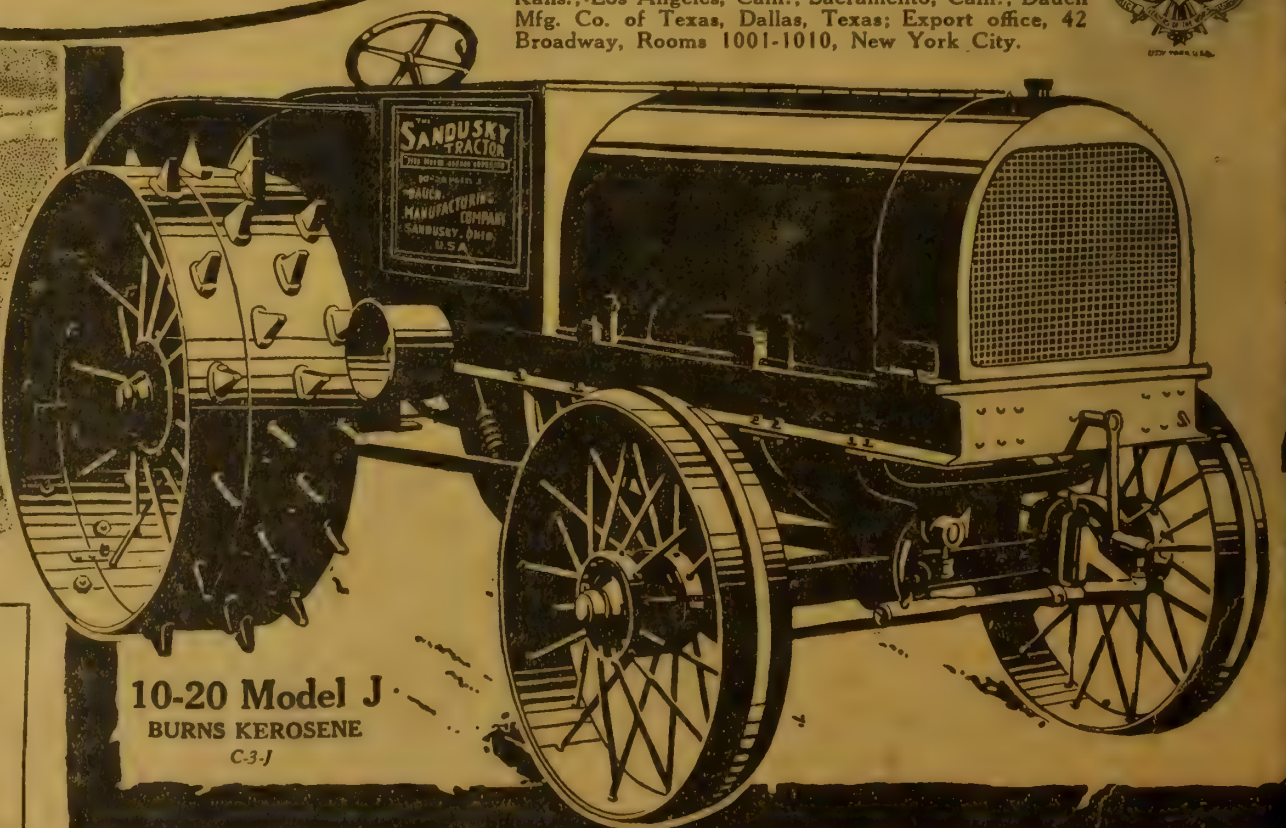
#### 10-20 Model J

Sandusky 4 1/4 x 5 1/4 four cylinder motor. Sandusky three speed transmission, equipped with Hyatt Roller and SKF Swedish Ball Bearings. Famous Timken Worm-and-Gear-Drive—direct on low. Wheel base 76 inches; weight, 4080 pounds. Protection throughout against sand and grit. Guaranteed Kerosene or Distillate Burner.

#### 10-20 Model J

BURNS KEROSENE

C-3-J





# CALIFORNIA CULTIVATOR

and *LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

April 27, 1918

SAN FRANCISCO

## *Beginnings of the Tractor Epoch*

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WENTY-FIVE YEARS ago Myron W. Reed, a pulpit orator, said the world had been fit to live in only fifty years, or since the invention of the shear plow.

We are wondering if some pulpit orator will not say fifty years from now that the world has only been fit to live in since the invention of the farm tractor.

Horse power and forces of wind and water have been used. Today the farmer says: "let gas do it." While the boys are going to the trenches to save human beings from barbarism and to save the world's liberties the farmer is turning every way to find the "hand" to take the place of the patriotic boys and be equally patriotic himself. The "hand" is now presented in the form of the gas engine and the tractor.

The replacing of the crooked stick with chilled iron or steel, and the scythe and cradle with the reaper, mark epochs. Children of today will tell the kiddies of a half century later of the wonder days of world war when civilized liberty loving people banded themselves together to save the world and "about that time came the tractor, product of the world's best brains, and it bore a large part in the saving of mankind."

\* \* \*

*One outstanding milestone in the beginnings of this epoch is described on the next two pages of this issue. Turn over the leaf.*





**Steel Mule**  
Orchard type of tractor handling triple bottom Deere plow. This was the newest tractor on the grounds, arriving on last day.

**A Made-Over Tractor**  
The Los Angeles tractor pulling a single Knapp disk. Only chassis of a Ford, together with the Los Angeles attachment, used in construction.

**The Avery, One of the Big-Wheelers**  
"There is a size Avery tractor to fit every farm," in fact, it is built in six sizes.

# Man Power Must be Increased on Farms

The World is Hungry—How May It be Fed? An Answer—a Partial Answer at Least—Given at the Great Tractor and Implement Demonstration Last Week. 30,000 People See Power Farming Exemplified. California Cultivator with Two Cameras and Three Observers Brings Some of the Inspiration of the Great Event to Its Readers. Other Illustrations on Page 550.

Editorial Correspondence

**T**HE Tractor and Implement Demonstration was a complete success. It began Wednesday morning, April 17, and ended officially at sunset, April 19. In reality it continued during the University Farm Picnic, and even to a limited extent on the following day. It was held on lands near the University Farm some 15 miles out from Sacramento.

There were thousands of autos, everyone filled, each day of the demonstration. The daily attendance is known to be in excess of 10,000. A disagreeable wind blew the first two days. One of the tents housing the truck and general exhibits was nearly destroyed, and dust was everywhere. Friday's weather was perfect. The official opening event was the banquet held on Wednesday evening. A royal good time was given to every attendant.

The officers of the association are W. H. Gardner, of the Yuba Manufacturing Company, president; C. E. Witherell, Samson Sieve-Grip Company, vice-president; G. M. Walker, Holt Manufacturing Company, secretary-treasurer; Eugene Smith, business manager.

There were 24 tractor companies and seven implement companies exhibiting and 41 different makes or sizes of tractor and 126 implements exhibited.

The three days demonstration gave the open-eyed farmer opportunity for adding liberally to his education.

\*\*\*

Two hundred million men have  
Continued on Page 527 Col. 4

By C. A. Briggs

**T**HE tractor demonstration seemed to me to be the biggest ever in California in attendance, in contestants for the farmer's favor in fine tractors and most of all in tractor tools. Every tried, tested and proven tool was there. To name them all would read like a catalogue, and anyway no one would want to read it for every one was there from Shasta to Calexico. All the old timers, and many new ones were there; "No, John, I tell ye ye'r wrong; John Deere for me." "Oh pshaw Bill, you know the Oliver is better, only ye'r so dern stubborn ye won't admit it." The Casaday "Easy way" engine gang had its admirers, the P. and O. was doing good work, McCormick and Walter A. Wood were still names to charm, while the Giant Killers, disks, chisel cultivators and heavy duty subsoilers had an easy job on the 260 acres of fine soil when they would have welcomed the hardest of hard pan. Holt's disks and plows were used by the caterpillars. Knapp's tractor plow didn't take a nap for three days, Sanders disks did good work. The Light Draft Harrow Company and spring tooth harrows were liked. The Clark Cutaway disks, the land rollers and clod crushers were in evidence, while Schmieser's gigantic land levelers, checkers, ditchers and harrows had a crowd around them all the time. Everybody wanted either an Avery motor planter, cultivator or a Cleveland special of similar type, disks in and out throws, cutaways, engine gangs of every description, hitches to handle any kind of outfit, tractors plowing with all of the best plows, harrowing with all of the best harrows. Thousands of farmers were looking, listening, talking, learning, buying. It was some demonstration and means much for our state of California and the crops that are to help feed a hungry world.

By J. B. Neff

**E**DITOR CULTIVATOR: Replying to your request for information as to my success with a tractor and my views concerning the good and bad points of farm tractors. Perfect tractors are not on the market yet, neither is the perfect automobile, but like autos some are better than others, especially for a particular use since a man would not buy a tractor for a grain farm and expect it to work equally well in an orchard. I wanted a tractor for orchard work which would run under the branches of walnut trees and close to the orange trees, so looked at those suitable for this work. Then I wanted one which would pull its load and keep on top of the ground; which would turn in the smallest possible space; which was strongly built, of good workmanship and with the best of facilities for keeping all the working parts well lubricated. I also wanted one which was economical of fuel and would burn almost any fuel and keep going, as well as having the fewest possible intricate parts.

I thought it best to have the tractor on hand in advance of the time it was needed for work, so bought it early in the winter and had my operator (whom we will call Chester) put in spare time hauling brush or harrowing so as to get accustomed to its management before the heavy work began. I had been using three mules to farm 60 acres of orchard. This was too much for the team, so wanted the tractor to do the work of four or five  
Continued on Page 547

By M. C. Holman

**T**HE California Tractor and Implement Association under the direction of Eugene Smith pulled off the most successful tractor meet ever held in California and the largest in the number of separate entries ever held in the world. And the thrill of it all, the excitement of the friendly contest for individual supremacy, the great strips of earth being turned over at a single trip, the dust, the wind, the hunger and thirst will always be remembered by those whose good fortune it was to be present. And there were thousands of people in attendance. I cannot fail to believe that hundreds of tractors will find places on California farms as a result of the demonstration.

From the first "dip" on Wednesday morning till the last "lift" on Saturday night, there was a constant stream of tractors plowing up various sections of a large field that was placed at the disposal of the association.

You will undoubtedly agree that tractors divide themselves quite naturally into four divisions.

The analysis places them in two classes. They are either the wheel type or the tracklaying type. Again they are either the large field tractor or the small orchard tractor. And for every purpose there is a tractor. One has but to know his needs to discover that some manufacturer has anticipated those needs and the tractor is ready to purchase. No one need forego the benefits of having a tractor on the ground that "It isn't



**Some Harrow**  
This is not a make-believe harrow, but one arranged for field service. It is exhibited by the Schmeiser Manufacturing Company.

**De Laval Sales Force**  
Nearly a dozen Pacific Coast representatives and salesmen required to give information as to the Lauson and other exhibits of the De Laval people.

**Interior of One of the Tents**  
Every form of truck was exhibited. Some of the trucks were used to demonstrate usefulness on the farm.





#### Powerful Implements

The Killefer Manufacturing Company sales force in the midst of its exhibit of the "strongest and biggest in the world."

#### Watching the Bean Grow

From left to right, E. N. Richmond, vice-president Bean Manufacturing Company; J. F. Ramirez, distributor in Philippines; John D. Crummey, manager; J. H. Delaney.

#### Both Interested in the Cleveland

The Cleveland tractor. The man standing with three checks in his hand is F. H. Stow, northern representative. In center is Mr. Briles, Los Angeles representative.

suited to my needs." It is just a matter of seeking farther and the right one will be found.

The admirable arrangement of the tents and exhibit grounds gave ample opportunity to see one's favorite tractor at work, and every farmer has a favorite, even though he may not actually possess one.

Each exhibitor shared equally the large field and secured about 100 by 1200 feet. That space was used for private demonstration. The large general space, occupying about 100 acres, was located about two miles from the private demonstration grounds. This was an objectionable feature as it required an auto to travel back and forth. As a consequence many did not get out to the large field. The individual field was quite large enough to give a complete and prolonged demonstration. Let us see, if we can, the several tractors in action and picture in the mind's eye the large and small machines that played so important a part in that successful demonstration.

A particularly amusing feature accompanied the opening of the demonstration. In an adjoining field were some 15 or 20 horses and mules that had been put to pasture. They stood upon an embankment with ears pricked up and peered inquiringly into the tractor field as if to say; "You are taking my job away."

Among the smaller tractors the Bean proved of special interest, performing stunts in an improvised orchard, dodging trees and turning corners at a very sharp angle. It handled its plows and cultivators with remarkable ease. The Bean is a six horse power machine with a speed of two and one-quarter miles per hour. It weighs 3100 pounds and is 102 inches long.

The Lauson 18 proved to be a tractor of special design. It is new to the Coast and was given its first tryout. A good feature of this tractor is the fact that the engine is enclosed, somewhat after the fashion of an automobile, preventing dirt from getting in. The Lauson has a 15-25 rating,

weighs 5000 pounds and has a belt speed of 2300 feet per minute.

The Fageol tractor was also shown for the first time, having just been completed after undergoing exhaustive tests.

The International, a small tracklayer, manipulated four disk plows with an ease that showed great reserve power. It is an 8-16 tractor weighing 4000 pounds. The wheel base is 85 inches and the entire length over all is 132 inches.

The little Los Angeles tractor represents the typical baby type as it is only four horse power on the drawbar. It was the smallest tractor at the show, but should find a place on many farms where great power is not required or where a boy must be used for tractor work.

The Cleveland is a comparatively new tractor to the Coast but has already made a host of friends. It is a 12-20, 96 inches long, has a turning radius of 12 feet and weighs 3000 pounds. Its work was particularly pleasing and it handled the load with ease.

The Bates Steel Mule in its present form is much preferred to the old style, as it now conforms to the standard type. It is a 12-20, with a drawbar horse power of 16 and as a stationary plant, over 25 horse power. Its length is eight feet nine inches with a weight of 4300 pounds.

The Fitch four drive was permanently stationed with one front wheel on top of a large log, showing an arrangement of the axle attachment which allows the tractor to surmount all obstacles and at the same time hold its equilibrium.

The Waterloo Boy was constantly at work. It is given a 12-25 rating and is capable of a 2100 pound pull. Its ease of manipulation and ready response to the operator are prominent features not to be overlooked.

The Samson Sieve Grip represents the perfect type of medium power tractor and is well suited to large and small jobs. It has a 25 horse power rating and is capable of over 3000

pounds pull. It will travel four miles per hour. The belt speed is 3740 feet per minute.

The two sizes of the Yuba lead us from the small and medium to the largest of the tractors. The small Yuba has a 12-20 horse power rating, and will pull 3400 pounds at a speed of two miles per hour. It will make a complete turn in 16 feet and when on a straight pull will travel on high gear at the rate of four miles per hour.

The large Yuba has a rating of 20-35 and will haul 5000 pounds on a sustained pull. This was done at the demonstration. Its length over all is 15 feet and it will make a complete turn in 16 feet.

There were three good models of the big wheel type, the Avery, Sandusky and Altman-Taylor. They showed wonderful tractive power. The long extension lugs on the Avery gave it special traction and made the wide wheels doubly wide. This machine is particularly suitable to sandy soil and will succeed where other tractors would fail.

The Sandusky pulled a combination of plows that would stall any but the most powerful tractor.

The Russell tractor of the 20-40 type pulled deep set mould boards, showing a traction power that will meet any demand.

The Advance Rumely is rated at only 12-24, but its work at the demonstration made one feel that there was at least no exaggeration. It handled full load of both mould board and disk plows.

For supreme power, a power that knows no ending, a power that never falters, we have two machines of the tracklayer type, the Holt and Best. At times it appeared that these machines were vying with each other to see which could outpull, but added plows made not the slightest difference. They are both of the powerful 75 type. When greater machines are wanted they will probably be built, but if they are good enough for the tanks of Europe, surely they are good

enough for the tractor needs of America.

Tractors at the demonstration ranged in price from \$450 to \$5000. There was a tractor for every purse and for every need.

We need not speak of the educational features. There were these in abundance and the thousands of spectators came away with tractor knowledge a plenty.

The association plans to make the demonstration an annual affair and it should have the hearty support of every progressive farmer in California.

#### EDITORIAL CORRESPONDENCE

Continued from Page 526

been withdrawn from their normal occupations by the world war. This is the estimate of Henry Clews. These men have been drawn from all vocations, but among them none has suffered more seriously than has farming. Its labor problem is serious and to its solving the best of thought is being given. How may we grow food? How may we clothe our armies? How may the sinews of war—a war to preserve liberty to the world—be supplied?

Perhaps to say that 200,000,000 men, or nearly twice the entire population of the United States, are withdrawn from normal occupations does not mean so much to the ordinary farmer as it does to refer to his own case. Perhaps a sturdy son has gone to war or to the munition plant. The working force on the farm has been reduced 50 per cent. Ordinarily it cannot be restored, at least not with efficient dependable help. Can the farmer's ability be doubled?

A few soil tillers have found a great increase in production through the use of power—steam power, gas power, electric power. The gas engine has largely superseded the old time steamer and has made possible an effective, low priced and efficient tractor, and that tractor has moved things and moved toward success.

The "perfected" tractor is not yet

Continued on Page 551



#### Hundreds of Plows

The John Deere Company made large exhibit in which was every form of plow made.

#### The Sandusky and P. & O.

The P. & O. Power Lift plows attracted much attention. Two types of the Sandusky are shown above.

#### One of the Tracklayer Type

The Yuba exhibited 12-20, 20-35 and 40-70. This is the 40-70 readily handling a big gang.





## They Mean More Mileage

Note how these sturdy shoulders brace the tread. They distribute road wear evenly over the entire wearing surface. Friction can't center in one spot to quickly grind through to the fabric. Shoulders of Strength—a special patented feature—give Ajax Tires more rubber where it should be—more tread on the road.

### 237 Race Triumphs

Shoulders of Strength, most of all, are the reason Ajax Tires are the Dirt Track Champions of America. Daredevil race drivers, using Ajax Tires, in 1917 won sweeping victories in 237 grinding dirt track races at state fairs from Texas to Massachusetts. They win on the roads you drive on.

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The careful tire buyer knows Ajax Tires, with more tread on the road, will increase his tire mileage. That's why 97% of Ajax annual output is chosen by car owners to replace other tires that came on their cars.

The Ajax line is complete—headed by the famous Road King—a monarch in quality, a democrat in service. Guaranteed in Writing 5,000 Miles.

Investigate Ajax Tubes.

Look up the nearest Ajax dealer.

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Sour Orange Seed Bed Stock, strong, thrifty, one year plants 10 inches and up. Absolutely free of scale.

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A high grade 12-25, two-speed, three-plow, one-man tractor. Has Hyatt Roller Bearings throughout; enclosed motor; dust-proof gears; bearings and wheels; automatic oiling system; easy accessibility of working parts. Start Right—Start Early.

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## Orange Cove Nurseries

Offer a Fine Lot of

## Citrus Trees

All kinds of Oranges and Lemons. Bud selection from the best individual trees. Some fine trees are on leased land, we will offer special inducements to move them quickly.

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## Spiny Citrus White Fly



**C**UBA is fighting the Spiny Citrus White Fly, or Black Fly as it is called there, White or black, it is a foe that has struck terror to the

hearts of citrus growers in Cuba, where it is now doing deadly work, and in Florida, so short a distance away and which has only just succeeded after a bitter struggle in prevailing against the citrus canker. The following communication is from a Florida horticultural inspector who is now in Cuba as one of a force of 100 men fighting the fly. California citrus growers will want all the information they can get on the subject.

"During the last seven years a very injurious insect known as the Spiny Citrus White Fly, *Aleurocanthus woglumi* Ashby, known in Cuba as the "Mosca Prieta," or Black Fly, has come into the western hemisphere from India. During these years it made its way from India to the Bahamas to the canal zone to Guantanamo, Cuba, and from there to Havana. It now occurs in several parts of the island. At Guantanamo it most seriously affects the coffee planta-

tions. In this part of the island its principal hosts are citrus, mangoes, sapodillas, avocados, anonas, etc., preferring them in the order named.

"Fortunately it has not got into the commercial groves. When it does—'Goodnight!' Florida is next in line, and we have all the details worked out for its eradication as soon as discovered there. Our plant commissioner made a trip down here (Cuba) in October. Our general inspector was here for several weeks in January. A force of about 100 men are working at its eradication. On account of the highly efficient organization in Florida, the Cuban government requested Florida to lend two inspectors for a period not less than three months nor more than six months. Mr. Bolinger, district inspector for Broward County is to act in an advisory capacity for the eradication work. I feel safe in saying that the spread of spiny citrus white fly will spell the absolute ruin of any citrus grove that it gets into. Florida will treat any infested tree in the same way we treated the canker, by burning at the end of a kerosene torch spray."

## Green Manure Crops

The agricultural experiment station of the California college of agriculture recently issued Bulletin 292, "Green Manure Crops in Southern California." It was written by Prof. W. M. Mertz when he was connected with the citrus experiment station at Riverside. It is the most complete treatise on cover crops yet issued. We quote from Mr. Mertz' summary:

### Summary

A number of legumes make satisfactory growth when used as winter green manures in Southern California. Of these, *Melilotus indica* is the most promising; others of value are common vetch, bur clover, and Canada peas. Fenugreek and lentils cannot be depended upon to give heavy yields and the seed is expensive. Purple vetch, Tangier peas, and bitter vetch (*Vicia ervilia*) possess advantages over most of the other varieties tried, but there is as yet no seed available in commercial quantities. From the standpoint of tonnage alone, rye and barley have both given heavy yields in time for spring plowing.

The incorporation of the legume green manures resulted in much heavier yields of the summer field crops, than followed the non-legume green manures. The average yields of all legume plots when compared with that of the non-legume plots show the following increases in

yields from legume green manures; with corn, 45 per cent, or 14 bushels per acre; with potatoes, 39 per cent, or 62 bushels; with cabbage, 44 per cent, or two and a half tons; with beets, 43 per cent, or six tons; and with sorghum and Sudan grass hays, 22 per cent, or one ton dry hay. The average for all crops showed an increase of 37.7 per cent. The cultural cost of growing the field crops was the same in both cases, and if we assume that the yields on the non-legume plots, representing as they do about the state average production, are sufficient to defray the actual producing cost, this gain represents clear profit.

The use of nitrate of soda or dried blood resulted in marked increases in yield when compared with those obtained from the unfertilized non-legume plots. The average increase with all field crops was 30 per cent. This increase was brought about, however, at an average expense of from \$30 to \$35 per acre. The value of these increases did not cover this expense except in the cases of cabbage and potatoes. This was true whether large or small amounts of nitrogen had been added. With cabbage and potatoes, the high value of the product made the applications of relatively heavy amounts of nitrogenous fertilizer profitable.

## Citrus Color Standard Brings Good Returns

The citrus season just passed brought some very interesting results from the enforcement of the color standard on citrus shipments. The value of tree colored fruit is now unquestioned, especially in the case of oranges which do not test eight to one at picking time. There is also reason to believe that the eight to one test is not always a sure indication of maturity and we believe that the value of such fruit would be greatly increased if it were held a little longer on the tree. Fruit was shipped this year which tested eight to one but which was so green that it was

scarcely possible to sweat any color into it.

The following letter from the Fair Oaks Citrus Association bears on this subject and will be of interest in citrus sections:

"No doubt you will be glad to learn about the shipment of 'substantially colored' oranges during the season just closed. Our first car went forward on December 3, 1917, the last one on January 21, 1918. The total was about 43 per cent of our normal crop; result 160 per cent better than normal results. Average price per ton \$80.



"Of course not all the gain was due to color, very much was the result of a short crop everywhere, but while our Navels did not at any time reach the alleged maturity standard of eight to one, we had only good reports on every car sent out. These reports covered all points, i. e., loading, sizing, packing, color and grading. Also decay, if any, and general comments. The following is one of all we received: 'PFE 8283 Wichita. Loading good, sizing good, packing high, color very good, grading good. No decay.'

"Our long contention that good wholesome Navels may not be of a ratio of eight to one has been emphatically confirmed in the court of last resort, the consumer, and all right minded people are satisfied with tree colored product."

#### CITRUS CANCER SITUATION IN FLORIDA

Florida announces that January of 1918 is the first month since May, 1914 that not a single infected canker tree was found in Florida. Trees found infected per year were as follows:

Since the work started, 22 counties have shown infection from canker, 13,708 groves have been found infected, and 342,250 citrus nursery trees. There were 477 properties infected, including nine which have shown re-infection, and some have been sold in part and classed as separate. There are 412 classed as no longer infected. There have been 232,

999 "exposed" grove trees destroyed with permission of owners, and 2,611,514 "exposed" nursery trees have been destroyed, the owners receiving no reimbursement.

#### FRUIT GROWERS' ASSOCIATION OF AUSTRALIA WANTS EM-BARGO ON CALIFORNIA CITRUS FRUIT

State Commissioner of Horticulture Hecke writes he has recently received from E. J. Vosler now in Australia, a clipping from the Sydney Herald, which will be of interest in the citrus counties of California. Many will remember the trouble we had about a year ago when Australia tried to place a quarantine on California citrus fruit. We hope the question will not again be opened.

"E. P. Crowther, organizing secretary of the Fruitgrowers' Association, writes: 'The Herald's report under the heading of Citrus Canker contains the most damning evidence regarding the administration of the federal government. In the final paragraph its own words are quoted as follows: No hesitation in recommending the destruction by burning of all infected trees and the absolute prohibition of the fruit or any part of a citrus tree from leaving the territory. For a long time past the executive of the Fruit Growers' Association of New South Wales in season and out of season has urged upon the prime minister the absolute prohibition of imported citrus fruit from America or any other country where citrus canker exists. The request has always been met with a refusal. In the opinion of my association nothing less than total prohibition is sufficient. This is the most awful and deadly menace that could be imagined. It means certain ruin and destruction to citrus growers and involves the existence of over 2,000,000 citrus trees and the welfare of thousands of people who have worked hard for long years clearing and preparing the land, and waiting patiently for the result of their long labors. If growers would only wake up to their own interests now, and without a day's further delay join hands with the association whose executive is fighting their fight, it is not, and will not be, too late. When the government sees that the growers are united and determined, and that the association speaks with the sound of 8000 growers' voices behind it, redress will quickly come. The danger is on us; delay will be suicidal.'

#### THE FIG AND OLIVE JOURNAL

The Olive Journal which has been for nearly two years a supporter of the olive industry, especially the co-operative end of it, has extended its field, as indicated by its new title, "The Fig and Olive Journal." This journal was started in San Francisco where it was formerly published, but it has moved to Los Angeles where it is now issued. The editor is J. J. Hoey.

"The one sure way to supply the supreme need for food," reads a proclamation by Governor Bickett of North Carolina, "is to man the bread line with the woman power, the boy power and the girl power of the state."

For two years not a single new pleasure motor car has been made in England. Luxury business has ceased. The English are leading strenuous lives, but are prospering.

**W. J. Bush**  
**Citrus Products Co., Inc.**  
**National City, Cal.**

Manufacturers of  
**ESSENTIAL OILS AND**  
**CHEMICALS**

**Citrus By-Products**  
**a Specialty**

**We are always in the Market**  
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## Boost Your Citrus Trees

Why not buy your farm munitions ready for use, not subject to the losses which the other Nitrogens always suffer? Commercial sense dictates that money is saved by use of Nitrate, for its comparative low price strongly commends it to the business grower.

**DR. WM. S. MYERS**  
*Chilean Nitrate Committee*  
**P. O. Box 248, Berkeley, Cal.**

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AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

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### and Help U. S. Win the War

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## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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Why use anything but a PERFORATED PROTECTOR, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small LATH HOUSE ABOUT EACH TREE. Protects from Squirrels—Rabbits—Gophers—Hot Sun—Sand Storms—Barking in Cultivation, etc.

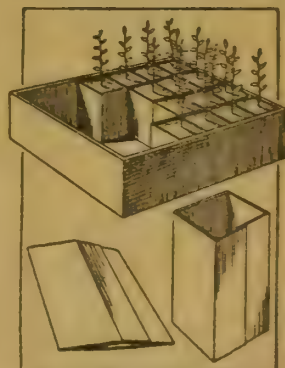
We make a number of kinds. TELL US YOUR PEST, and we will tell you what kind to buy. Get our prices. We can save you money.

#### COLLAPSIBLE PLANTING POTS

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start

Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

Write for samples and prices of both Pots and Protectors. State which you are interested in. THE EXPAN CO., 935E, Central Ave., Redlands, Cal.



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Tizit

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TIZIT is a thoroughly tested tree spray made in California, a combined fungicide and insecticide designed after many years' experimenting by experts to meet the conditions that confront the Western Coast citrus fruit grower.

It is also unsurpassed as an insecticide and fungicide for apples and pears. Tests of last year in the apple districts proved conclusively that TIZIT spray produced better results AT LOWER COST than any other arsenical preparation.

We claim for TIZIT;

- that it will eliminate the necessity of fumigation;
- that it will clean trees of moss and lichen, leaving trees and fruit perfectly clean;
- that trees sprayed with TIZIT have proven immune to red spider;
- that it is the cheapest and most efficient spray you can use;
- that as a SPRAY INTO THE BLOOM to prevent fruit dropping it has no equal.

TIZIT contains no oil to damage your trees. We want you to read the letters we have received from TIZIT users and see results we can show.

Write today for circulars, price list, and testimonials.

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## Cut Your Cost 60%

*by using the latest and most efficient  
farm implement on the market.*

### Gardner's Pony Harvester UNIT SYSTEM

*One horse can do the work of three and  
do it better.*

Specially adapted to Bean, Pea, Onion,  
Garlic and similar Harvesting crops.

*Don't buy a bean cutter  
until you write us.*

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Box 16

Santa Ana, Cal.

## Fruit Crop Report

Rather early for estimates, but reports of general conditions from various parts of the state indicate good crop of apricots, fair of prunes and other fruits, excepting peaches which will be only a medium crop.



SHREWD buyers and shrewd growers have their eyes on the possible production of California orchards for 1918.

It is too early for either to know with any degree of definiteness, but both are watching day and night. It is probable the growers have less interest than in a normal year for many presume on the government keeping a hand on the markets and preventing speculative values, but the interest is keen on the possible output. So, following the custom of a dozen years, the Cultivator has asked for estimates. These are given below and are wonderfully interesting and may prove helpful to the California growers. It appears that California will produce a normal, or better than normal, crop of nearly all fruits. Some sections indicate only a 30 or 40 per cent crop but the longer producing sections range well up towards 100 per cent and indicate a record crop. Reports from the peach growing sections are hardly so optimistic. Regarding the peach output, the bureau of markets of the department of agriculture reports:

Reports from California made at blooming time show a high condition figure despite the unusually large crop in 1917. It is too early to report set of fruit at this time and later estimates may show a considerable reduction. The peach crop for California last year was approximately 14,151,000 bushels, the largest on record. Conditions at this time indicate a crop of about 13,218,000 bushels for 1918.

Attention is called to the fact that the California peach crop is not comparable with production given for other states, since approximately 90 per cent is either dried or canned. Estimates for other states are based on quantities reaching strictly commercial channels as fresh fruit.

Eastern states report poor conditions as a rule. One exception, however, is Georgia. Its last year's report shows a condition of 56 per cent and this year's shows a condition of 100 per cent. Other states run around 50 per cent to 80 per cent.

The reports from the growers, horticultural commissioners, and other observers are, however, more interesting. Here they are:

Geo. P. Weldon, Chief Deputy State Commissioner of Horticulture, Sacramento

Mr. Weldon is not yet prepared to give out estimates of fruit crops, but writes:

As soon as all the details in connection with the cooperative work between this commission and the bureau of crop estimates are completed we shall be glad to write you further. You may rest assured that whenever we have figures that will be of interest to you and your readers you are perfectly welcome to them and, more than that, we will make a special effort to see that you get them at the earliest possible date.

Fred K. Howard, Horticultural Commissioner, Kings County

Apricots, peaches, and prunes show a normal crop in all varieties for Kings County.

Wm. B. Jackson, Ontario, San Bernardino County

There will be a big crop of apricots if weather continues good, but in peaches there will not be any Muirs to speak of but Lovell, Elberta, Phil-

lips' Cling, and a few other varieties that are now in bloom indicate a good crop.

Fred G. Stokes, Horticultural Commissioner, Lake County

Bartlett pears show A1 prospects. Trees now in bloom.

Apricots and peaches have too small an acreage to report on.

Almonds show 50 per cent damage by frost.

Cherry acreage is too small to count commercially.

Prunes are in blossom now, undamaged but lighter than last year. Extra heavy crop last season.

All grain crops look exceedingly well.

Wm. James Hill, Redding, Shasta County

The California Cured Fruit Exchange, as foreshadowed in my letter to you last spring, is out of the fruit business, and is now trying to close up its affairs by voluntary bankruptcy, having failed to collect in the courts from its defaulting secretary-cashier, S. Ottis Walker.

So far as I can judge from the present appearance in this county I think you will find the following particulars about correct:

Apricots and almonds. Frost damaged, practically none. Neither of these are largely grown here.

Peaches. Muirs a good average crop. Other kinds more or less damaged by frost.

Prunes. Good average blooming.

Pears. Heavy blooming. Neither of the two latter have generally set yet.

There has been no material increase in bearing trees in this county.

Geo. A. Lamiman, Horticultural Commissioner, Shasta County

Regarding crop conditions I can say that they are better from some stand points than last season. The weather conditions have been better as the rains have been better distributed and have been of the gentle, easy falling kind—all goes into the soil. We have had less run off than usual. All grains and forage crops are in fine condition. The acreage is larger than last season. Stock are looking fine as there is abundance of feed.

Our fruit crops look well at the present writing. Prunes are well set and growing, pears look like a good crop, peaches aside from Muirs are not up to normal, Muirs seem about normal. No apricots as frost caught them with their coats off also the almonds though these two crops are not grown commercially with us.

W. D. Butler, Horticultural Commissioner Napa County


As to the prospects of a fruit crop in Napa County this season I will state that the season being so late it is almost impossible to give an intelligent estimate.

Cherries appear to have a normal bloom. Peaches and apricots will be about 80 per cent normal, but prunes and pears in my opinion show only about 50 per cent vitality. This I lay to the heavy crop last year and the very hot summer and dry fall and early winter.

E. O. Amundsen, Placer County

Pears have set heavy crop and show little injury by frost.

Have only 50 acres of apricots in the county but these show excellent prospects.



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With **FORD** All That 4  
Your **Pullford \$155** Horses Can  
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**MAKES** a practical tractor out of a Ford or most any other car. Easily attached to or removed from the car in thirty minutes. No holes to drill, no springs to remove. **Practical, Durable, Reliable.**



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Pulls plows, harrows, drills, mowers, binders, hay loaders, road graders, wagons, trucks, etc. Steel wheels with roller bearings and tires 10 inches wide, two pairs of hardened Vanadium steel pinions, one for plowing and one for hauling speed. A tractor with the reliability and durability of the Ford car. Prompt shipment. Write for catalog.

It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

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### Topnotch Orange and Lemon Trees

Selected buds, fine roots, guaranteed workmanship. Don't think of buying until you price our stock. Address Puente or Spadra, Cal.

100,000 big sour orange seedlings 10 inches and up.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.



Peaches show a full crop of most varieties set, and prospects are very good. There was 20 per cent loss by frost in a few low sections.

Almonds show very little frost injury, prospects good.

Cherries show no frost injury, and expect full crop if we have no frost in near future.

Plums show some varieties set heavy and some light, but the prospects are generally fair.

Grapes show considerable frost injury in lower sections.

O. E. Bremner, Horticultural Commissioner Sonoma County

You are a few weeks too soon to give exact data. The blooming period of Sonoma County fruits is about 20 days later than last year. Whether or not this is going to work out advantageously for the crops, we are unable to say at the present time. However, everything looks propitious for a good year.

We cannot expect a heavy apple crop this year, as last year was above normal. Prunes had a lighter bloom than last year but seem to be setting almost as well. Would not be surprised if we had as good a crop as last year. Pears seem to be a little below last year's condition, and it is altogether too early to say anything about grapes, as they have not budded out yet.

Taking it all in all I would say that we are going to have a good average year.

Sutter County Farmer, Yuba City, Sutter County

Apricots 90 per cent, peaches 85, almonds 60, cherries 90, prunes 95.

Aratus Everett, Moorpark, Ventura County

Apricots are the only fruit we raise commercially in this section. They are mostly dried on the ranches. Last year we had a record crop and this year promises a heavier crop than last season. This is very unusual as we irrigate but few of the orchards and after a heavy crop year the following crop is generally light. My old apricot orchard of 125 acres, 22 years old, mostly of Royals, bore last year about 1000 tons of green apricots and will likely have over 1000 tons this year. I hear of some dropping of blossoms and fruit but do not know how general it is. In some parts of the county there will be short crop of cots.

Thos. P. Redmayne, Horticultural Commissioner, Marin County

The season so far has been very favorable. Although the rainfall has been little more than half the normal it has been so distributed that the soil has practically absorbed it all. Comparatively there has been little frost.

Apricots in general did not bloom as heavy as last year but are setting well and at present indicate 100 per cent crop.

Peaches bloomed well. It is too early yet to determine the setting of the fruit.

Cherries and almonds are as yet very little grown in this county, but such as there are are fully up to normal.

Prunes indicate at present a full crop.

The unusually mild winter is apparently showing its effect upon apple trees by a rather abnormal advancement of leaf growth and a reduction in the amount of bloom.

Pears are looking very well, their condition being fully 100 per cent.

J. P. Dargitz, Sacramento County

It is going to be very difficult to de-

termine crop quantities in fruits early. A very heavy crop set in practically all fruits and nuts, but heavy frosts the first week in April severely damaged the same. This is very general over the Sacramento Valley, of course varying in intensity from very slight damage in some cases to total destruction in others. In most cases this fruit is only just beginning to drop and this dropping will continue even into June. In many cases almonds that seem to be growing are minus the kernel or at least it is so badly hurt that it will drop before maturity.

My conclusion is that apricots will average half a crop, peaches three-quarters to a full crop, almonds 40 per cent of a crop, cherries practically a full crop and prunes from half to full crop. Too early to be sure about prunes yet.

Chas. F. Collins, Horticultural Commissioner, Tulare County

I am still in the class which doubts the advisability of estimating fruit crops at this season of the year.

Almonds and cherries are not grown in this county in sufficient amounts to mention and apricots in only a limited degree.

Apricots and peaches cannot be

heavy as there is a comparatively light crop on the trees at the present and of course this may all drop before it sets.

Prunes are hardly past the blooming period and although they bloomed well they are dropping considerably and no one can tell when they will stop.

You do not ask for grapes but I will say that the vines generally speaking, are budding very heavily.

There was a light frost on the morning of the 7th but no damage to fruit although tender vegetables were nipped in many places. Weather at present is clear and cool.

H. M. Armitage, Horticultural Commissioner, San Diego County

Regarding estimates of the coming season's output of fruit and nuts present indications are as follows: Apricots 80 per cent, peaches 55, almonds 100, cherries 80, prunes 80.

Lack of proper attention to moisture requirements during the extremely dry fall has resulted in a poor setting of fruit buds as regards peaches. Other deciduous fruits are also affected although apparently to a lesser extent. Of course you realize that the season is yet young and that these estimates may be materially changed by future conditions.

H. J. Baade, Farm Adviser Napa County

Apricots 80 per cent, peaches 100, almonds 85, cherries 100, prunes 100. The outlook for the season is very good.

Arthur E. Beers, Horticultural Commissioner, Merced County

Apricots have not set well. There is perhaps 50 per cent of the crop.

Peaches have not set well, showing probably 80 per cent of normal crop.

Almonds are looking very well, about 90 per cent of a crop.

Cherries we do not raise in commercial quantity.

Prunes are setting well, though our bearing acreage in this county is small.

There has been no damage by frost except to a few early potatoes.

Leonard H. Day, Horticultural Commissioner, San Benito County

San Benito County shows a 100 per cent crop of apricots, peaches, almonds, cherries, and prunes.

J. C. Mertz, Santa Ana Chamber of Commerce, Orange County

Apricots will not be more than 50 per cent of a crop, peaches 65.

C. A. Baker, Piru, Ventura County

Apricots have set 100 per cent crop.

Continued on Page 551



Photograph by L. A. Hiller

## Kills all glare—Legal everywhere Gives you 500 ft. range

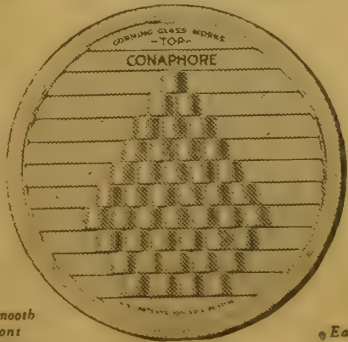
**BOTH** these cars are equipped with Noviol (yellow-tint) Conaphores—*legal everywhere*. The photograph shows them as they meet at a dangerous turn on a dark country road.

The instant a driver sees the yellow-tint Noviol lights he knows that they will not blind him—and feels perfectly safe. The soft mellow light is easy on his eyes and helps him to see past the oncoming car.

**Kills all glare.** The Conaphore uses all the light, but patented corrugations control it within legal limits. Height of beam is not more than 42 inches from the road.

**Range 500 feet.** Corrugations throw a shaft of strong driving light 500 feet ahead of the car.

**Ample side light.** Cylinders fan strong rays out over the roadside. Light spreads 25 feet at each side of the car 75 feet ahead.



Manufactured by the World's Largest  
Makers of Technical Glass

**CONAPHORE**

Range 500 feet—No Glare—Pierces  
Fog and Dust

**Pierces fog and dust.** This wonderful exclusive feature of Noviol Conaphores (yellow tint) is patented.

Equip your car with Conaphores. They safeguard you, and make for the safety of others. Legal everywhere. Dimming unnecessary. Made in both Noviol and clear glass.

Easy to install. Sizes to fit all cars. Order from your dealer—if he has not received his supply, write us.

### Retail Price List (Per Pair)

SIZES	Noviol Glass	Clear Glass
3 to 6 1/2 inches inclusive	\$2.40	\$1.60
7 to 8 1/2 inches inclusive	3.50	2.50
8 3/4 to 10 inches inclusive	4.50	3.00
10 1/2 to 11 1/2 inches inclusive	6.00	4.00

Prices 25 cents more per pair west of Rocky Mountains. Sizes vary by steps of 1/2 inch above 6 1/2 inch size.

CONAPHORE SALES DIVISION  
EDWARD A. CASSIDY CO., MGRS.  
521 Foster Building, New York City  
CORNING GLASS WORKS

CORNING GLASS WORKS ALSO MANUFACTURES PYREX TRANSPARENT OVEN DISHES





No lesser force could crank a big tractor motor fast enough to deliver a starting spark as intense as that delivered by a



## High Tension MAGNETO

Equipped With a K-W Impulse Starter.

No matter how slowly you turn your tractor motor over—even if you use a crowbar—the shaft or rotor of the magneto (held back until the firing point of the engine is reached) is driven forward at a high rate of speed by this powerful impulse starter. This produces a hot, intense starting spark even when the motor is stone cold. It absolutely prevents back firing while cranking even if the spark control is fully advanced. It guarantees an immediate start and entirely eliminates troublesome self starters, coils and batteries.

The K-W Impulse Starter, found only on K-W Magnetos, was the first impulse starter. It has stood the test of time. It is a fit team mate for K-W Magnetos whose efficiency and reliability has led 40 manufacturers to adopt them as standard equipment of 83 models of tractors.

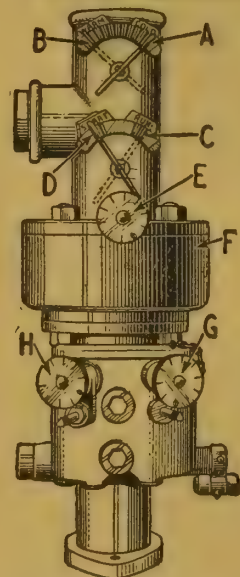
A K-W Magneto assures a positive start—without fussing. Its reliability keeps your tractor going. Its efficiency cuts fuel cost to the bone. Insist that your new tractor be K-W equipped.



Write for a list of K-W equipped Tractors

THE K-W IGNITION CO.  
2895 CHESTER AVE. CLEVELAND, OHIO, U.S.A.

## Turn Kerosene into Power



**MOGUL** kerosene engines will be bought for many thousands of farms this year because so many farm power users finally realize that lasting engine satisfaction comes only with perfect kerosene engine design, best materials, long manufacturing experience, and prompt, dependable repair service.

Take a few profitable minutes to glance over this diagram of the patented mixer which enables Mogul engines to operate successfully on kerosene, and which can be found on no other engine. To start engine, place the dampers as indicated by A and D. Open the gasoline valve, E, which will supply gasoline from the small bowl, F, used only for starting. After the engine is started, place the dampers in the positions indicated by

B and C. Open the valve, G, and the engine will run on kerosene. When the engine is warmed up, supply a little water by opening valve, H, which is needed for the successful using of kerosene by large engines. (No water is used on the smaller size engines.)

The simplicity and effectiveness of this Mogul mixer are of tremendous importance because kerosene is the great economy engine fuel nowadays, cutting power cost in half. Kerosene economy, coupled with the known value of International Harvester machine construction, makes the Mogul the right power for all-around use on any farm. Send for our catalogue and study Mogul details, then see the Mogul engine dealer. Mogul engines are of all styles, ranging in size from 1 to 50-h. p. Write the address below for catalogue.

**International Harvester Company of America**

(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.  
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San Francisco, Cal. Spokane, Wash.



## Every Bag Valuable



**D**IFFICULTY in securing jute from India, combined with the fact that the present freight rate from Calcutta to American ports exceeds \$100 per ton, brings the war home to grain farmers who have been accustomed to sack their grain and are not equipped for handling it in bulk.

Jute which is used largely for grain bags has received attention by the United States food administration because, like binder twine, it is closely related to the handling of the cereal grains.

Prices Based on Jute Already Purchased

To secure the importation of enough bags for the 1918 season, the food administration made voluntary agreements February 26 with the bag makers to the following effect:

The bag manufacturers agreed to sell all standard 22 by 36 inch, 12-ounce new Calcutta and domestic wheat bags on hand or already bought or to be manufactured from jute cloth already bought, at a price not greater than 25 cents f. o. b. tidewater.

This agreement was contingent on the establishment by the food administration grain corporation of a differential in its buying basis of wheat in bags over wheat in bulk of not less than seven cents nor more than nine cents per bushel. A differential of nine cents was fixed.

The bag manufacturers agreed to sell the bags only through the normal channels of distribution, the intention being to assure producers of wheat that the bags would reach them at a price not over 25 cents per bag, f. o. b. tidewater, plus freight and distributor's normal charges.

The agreement further provided that if importations already arranged were affected by unusual increases in cost because of variations in exchange or freights or other causes, the food administrator would consider proper modifications of this maximum price.

### Bags Needed for Trenches

Although the jute supply of India is considered ample, unusually heavy demands have been made on the Cal-

cutta bag industry for sand bags to be used for lining trenches.

One English order alone is for 150,000,000 bags and the other allied nations as well as the United States are utilizing the same source of supply. This situation combined with shortage of vessels and unusual demands for shipping space has resulted in the present price of bags in America and the possibility of additional advances.

Unless the bag dealers can determine now what the shortage of bags, if any, is to be, they cannot incur the risk of more imports at present prices. The only way that this shortage can be ascertained is by the prompt placing of all orders for 1918 requirements. Bag buyers who do not book their orders while the 25 cent bags are available may have to pay from 28 to 30 cents or more. Recent quotations for importing additional bags from Calcutta, if freight space is obtainable, were about 27 to 29 cents.

In addition to ordering all new bags needed, farmers are strongly advised to prepare for use all bags which can be made serviceable and to store them where damage from weather and rodents will be reduced to a minimum. The entire matter is one from which little relief is in sight until the shipping situation is greatly improved.

### Use Bags Twice

Feed, fertilizer and cottonseed sacks are likewise valuable. As a conservation measure, mills which formerly placed no return value on sacks have signified their willingness in many cases to buy back through their dealers sacks that are in good condition and may be refilled.

Elimination of printing and advertising matter both on bags and bagging material is also urged as a means of stimulating the re-use of bags, which is vitally necessary to meet any shortage which may occur.

The food administration's studies of the bag situation and its efforts to insure a sufficient supply at reasonable prices are purely voluntary and it cannot at the present time supervise the jute industry or establish any control of prices.

## Agricultural War Council Makes Recommendations

The secretary of agriculture recently called a delegation of farmers to Washington to consult together regarding production of greater quantities of food stuffs to save America and her allies from actual famine. In other words, the committee was to be an agricultural war council. California was honored in the selection of one of these delegates, George C. Roeding of Fresno being chosen as representative of the state. This advisory committee met at Washington, being there on the anniversary of America's declaration of war. Resolutions were adopted endorsing the action of the secretary in the appointing of the committee on seed stocks and the publishing of the Seed Reporter which gives a review of conditions in the seed markets. It was urged by the committee that field inspection of seed grains be extended as far as practicable. Owing to the fact that it is impossible to purchase seeds from other countries, by reason of the war conditions, the committee urged there should be brought to the atten-

tion of all gardeners and farmers the necessity of saving seed for themselves. Other recommendations: The flax situation should receive special attention; buckwheat should be conserved; millet is a desirable crop which should be grown more; there should be an accumulation of clean alfalfa seed; the bureau of markets should be as lenient as possible in fixing the grade of wheat during the period of the war; the administration should requisition the remainder of the 1917 crop of wheat even when held by farmers; investigation should be made as to high prices of farm implements and machinery; we commend the department for placing fertilizer manufacturers under license; we endorse the attitude of the war department toward agricultural labor; women should be employed for same pay as men in every vocation which they are qualified to fill as well as men, but we do not believe women should be employed for rough heavy work on farms; we believe clerks and others employed by the government



In Washington should extend their work without reference to hours and be patriotic enough to render their services willingly during the war. In addition the advisory committee made many other recommendations, especially with reference to livestock, dairy products, poultry products, and in fact many suggestions which will be of value not only to the department but to all the country.

#### FURLOUGHS FOR AGRICULTURAL WORKERS

The provost marshal general has issued an order in which it is stated that it is the intention of the war department to make use of its authority to grant furloughs to enlisted men. It will use this authority for agricultural workers only. Blanks are now being sent out to farmers who request them. Application for furlough for a helper may be made by a farmer, which, after being sworn to, is submitted to the exemption board, which if it deems wise, endorses as follows:

"The above-named local board finds that the services of the soldier herein named are urgently needed on the farm herein described; that the said farm produces substantially more agricultural produce than is consumed by those working on the place; that the soldier can not without great difficulty be replaced thereon; that his continued absence is reasonably likely to decrease the production of the farm under that which it can reasonably be expected to produce if the soldier is returned; and that the registrant will be of value as a farm laborer."

It is then sent to the soldier, and he joins in the application by signing this statement:

"I join in the above application, and if the furlough here asked for is granted I hereby engage to utilize the time of my absence solely and completely in farming, to work earnestly and well, and that if for any reason my services cease to be urgently needed before the expiration of my furlough, to report immediately for military duty at my proper post."

#### RIVERSIDE FAIR

The Southern California Fair has come into existence to assume the place filled until recently by the Riverside County Fair. That the Riverside fair might be broader in its scope, both for exhibitors and visitors, the change was made. The Riverside fair has come to be recognized as one of the strongest agricultural fairs in the West. Its exhibits are attracted from all parts of the Southwest.

With the change in name this year new classes are being added to the agricultural department. The race purses will be larger this year than before. Cooperation is the effort of the fair management with all agencies that will build up the fair and make it stronger and better. Plans are being formulated for an exhibit of food conservation ideas. The Riverside fair has been recognized as the location for the First Southern California Duroc-Jersey Futurity. Already many entries have been made in this big futurity, the first of its kind ever held in the West.

The dates for the Southern California Fair are October 8-12.

Road work is war work. "Speeding up construction of good roads is an integral part of government war work. Efficient transportation is necessary to reduce the margin between producer and consumer."—United States Food Administration.

#### BEAN POOL CLOSES MAY 11

The directors of the California Lima Bean Growers' Association have decided to close membership in the 1918 pool on May 11. The directors issue the following statement:

The results which our association obtained through its selling of the 1917 crop grown by our members was evidently generally satisfactory for not a single member filed notice of withdrawal when opportunity was offered last January. Not only have we retained the members who participated in our 1917 pool but if our 1918 pool were to be made up only of the new members who have joined our association during the past few months our 1918 pool would then have 50 members more than the number that participated in the 1917 pool; in other words our membership has considerably more than doubled. While this condition is gratifying there are still a large number of bean growers who are not members of the association. You who are members undoubtedly know of some of your neighbors and friends who should join with you in the bean growers association. No

doubt some of them have been fully intending to join the association for the coming year but have simply been putting it off. Will you explain to them that the 1918 pool closes on May 11th and extend to them another invitation to join our organization of which they know they should be a part?

#### URGES FARMERS NOT TO HARVEST WHEAT FOR HAY

A special appeal to all farmers and ranchers who have wheat lands not to cut their wheat for hay, but to allow it to mature for grain has been issued by Ralph P. Merritt, federal food administrator. Mr. Merritt pointed out the urgent necessity for wheat, declaring that the government soon will require every grain that can be grown this year to feed its armies and the armies and civilian populations of the allies.

Mr. Merritt's request, it was said, followed information that hundreds of acres of wheat in the central section of the state were to be cut for hay.

That idle acre is a German missile for an American heart.

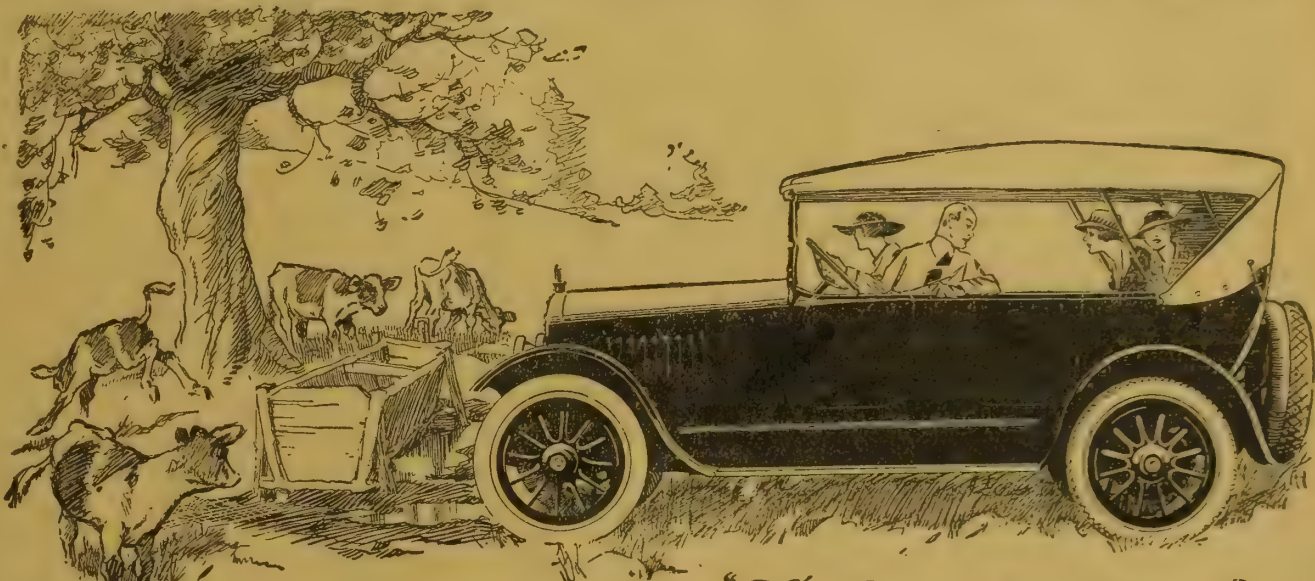
#### COYOTE PROOF FENCE

A fence constructed in such a way as to be proof against dogs and coyotes has been designed and tried out by the forest service.

Specifications: Posts 7½ feet in length, set 2½ feet in the ground and 16 feet apart; a barbed wire stretched flat to the surface of the ground; three inches higher a 36-inch woven wire fence having a four-inch triangular mesh; five inches higher a barbed wire; six inches higher a second barbed wire; seven inches above this a third barbed wire. Total height, 57 inches.

It is essential that the bottom barbed wire be stretched flat on the surface of the ground at all points. This is accomplished by grading the ground before the fence is built and by filling in the small holes afterwards.

Production of corn, rice and potatoes in Japan during 1917 was in all cases less than in 1916. The 1917 rice crop was about 100,000,000 bushels below normal, a decline of more than one-fifth.



"The Car of No Regrets"

# KING "8"

## The Car-Owning Farmer Serves the Nation Best

HE conserves time and energy to devote to his farm by putting the automobile to work. It does the "going to town", keeping the horses in the fields. It can be driven by women and children with safety, saving time for the men. Driving it hard does no harm, it's always fresh for the next job. And if it's a King it needs little attention or repair.

This year it is a duty to buy more carefully than ever before. For reasons of economy and assured performance you should select a pioneer car of matured mechanical design and moderate up-keep, built by a reliable and long-established Company. Investigate the KING!—and because of limited "war-year" output and freight embargoes, order early.

This sixty horse-power King is now in its third year of world-wide service, following a smaller "Eight" and a successful "Four". The chassis is designed throughout for utmost simplicity and surplus strength. Comparative light weight for a car of this power and size is the big factor in its low cost of maintenance. The King has long

body room because of compact engine, and its 120 inch wheelbase gives a short turning radius, which together with its fine taper roller bearings and easily reached and operated levers, make it remarkably simple to handle. Women especially appreciate its easy driving qualities. Built low it holds to the ground at high speed. Long cantilever springs and deep, correctly tilted upholstery banish riding fatigue.

The car shown above is the seven-passenger Touring model. FOURSOME—is the King 4-passenger sport model and considered by many the handsomest of its type. A 7-passenger Sedan, richly finished, is the popular closed model.

Send for catalog and name of nearest dealer

KING MOTOR CAR COMPANY, DETROIT



Established 1877 Forty-first Year

## The California Cultivator

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established  
 1901, Combined with California  
 Cultivator 1916

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Entered at the Post Office at Los An-  
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Saturday April 27, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against  
 loss through dishonesty of any adver-  
 tisers in the Cultivator. We do not at-  
 tempt, however, to adjust trifling differ-  
 ences between subscribers and honest,  
 responsible advertisers, nor will we pay  
 the debts of honest bankrupts. Notice  
 of complaint must be sent us within 30  
 days from date of the transaction, and  
 the subscribers must have mentioned the  
 Cultivator when writing the advertiser.

## THIS WEEK'S COVER

It's different this week, that is,  
 the illustrations appear later in the  
 paper, and the place of the cover illus-  
 tration is given to a concise statement  
 as to the beginnings of the tractor  
 epoch. The next two pages are also  
 different. The one usually occupied  
 by advertising gives its entire space  
 this week to accounts of the tractor  
 demonstration and illustrations of it.

## TAXES

Taxes are due; they will soon  
 be overdue. Therein lies a penalty.  
 Save every penny of penalty this year  
 and put it in Liberty Bonds.

## W. S. S.

With all the getting of Liber-  
 ty Bonds, don't forget the humble lit-  
 tle thrift stamp and an occasional war  
 savings stamp. The aggregate of  
 these tiny bonds is to reach the sum  
 of \$2,000,000,000 before December 31,  
 and these \$2,000,000,000 will come  
 largely from the kiddies of the land.  
 Encourage them to earn and save  
 through the thrift and war stamps.

## GREAT CROPS

Much has been asked of Cali-  
 fornia; much will be given by her  
 food crops. We asked for more rains  
 than we got, but still they were suf-  
 ficient in almost every section. A trip  
 up through the Great Valley impres-  
 ses with the wealth of this state, es-  
 pecially along the river bottom lands  
 the crop of cereals this year promises  
 to be immense. In some sections the  
 hay and grains are already so heavy  
 as to be lodging. Tractors dot the  
 landscape from almost every view-  
 point, and corn, milo and beans are  
 being planted everywhere. Califor-  
 nia will feed herself this year and  
 have abundance for sending into  
 France.

## LIBERTY DAY

The president is appealing to  
 every governor and, in fact, to every  
 American to observe Friday of this  
 week as Liberty Day, the day to be  
 the beginning of the end of the Third  
 Liberty Loan drive, and it is antici-  
 pated that on that day hundreds of  
 millions of dollars will be subscribed.  
 The campaign will in reality end one  
 week later, and it is hoped no section  
 of the United States will allow any  
 portion of its quota to go by default.

## HOOVER SAYS

"The government looks with  
 disfavor upon resales within the trade  
 without reasonable justification, espe-  
 cially if such sales tend to result in  
 a higher price to the retailer or to the  
 consumer. The general principle is  
 that food commodities should not bear  
 more than one wholesale profit nor  
 one brokerage profit. When the re-  
 sale is made through a broker his po-  
 sition is similar to that of the two  
 dealers concerned, and he must be  
 prepared to prove that the sale has  
 justification and does not increase the  
 price to retailers or consumers."

It's taken the world a long time to  
 learn this lesson. We hope that when  
 the war is over it will take a far  
 longer time to forget it.

## BIG FRUIT YEAR

California has been visited by  
 streaks of abnormal weather, and  
 promising crops have been destroyed  
 or greatly lowered in quality so that  
 the producer has no absolute guar-  
 antee that nature will be kind all  
 through the season, but we are all  
 hoping that the early season's  
 promise is to be fulfilled this year.  
 The Cultivator's requests to nearly  
 all portions of California for esti-  
 mates have resulted in most hopeful  
 word regarding the season's output.  
 Every extra pound of California  
 fruits which will be produced this  
 year will aid in the fight in France:

Cereals promise big. Last year's  
 hundred per cent increase in the out-  
 put of beans will apparently be far  
 distanced this year. New canneries  
 have been built, and more vegetables,  
 tomatoes, and all fruits will be sent  
 out in tins than ever before.

## CONSIDER THE TRACTOR

The tractor is given prominence  
 in this issue of the Cultivator. This is  
 partly because of the demonstration  
 held at Davis. It was a really, truly  
 demonstration of tractor worth and  
 will result in extension of tractor use-  
 fulness. There were thousands of in-  
 quiring farmers. They have been  
 made inquirers because of the present  
 world demand for more food, because  
 of the labor situation, and perhaps  
 more by the efficiency which the trac-  
 tor has shown in the hands of practi-  
 cal farmers. One of these practical  
 men, and one of the most keen ob-  
 servers, supplements the demonstra-  
 tion articles in this issue with a few  
 items from his experience. J. B. Neff  
 has practiced farming from almost ev-  
 ery angle in many parts of California.  
 In more recent years he has grown  
 walnuts and alfalfa in Orange Coun-  
 ty. Both have been grown with prof-  
 it, but during the past year or more  
 the cost of horse feed has mounted  
 until he had turned to gas. Like every  
 other tractor purchaser he has had  
 difficulties. Account of these, to-  
 gether with that of some of his suc-  
 cesses, makes one of the most inter-  
 esting articles the Cultivator has  
 used for a long time. Read Mr. Neff's  
 experience on second page of this is-  
 sue.

## UNIVERSITY FARM PICNIC

California's Most Popular Event Given  
 Record Breaking Attendance. Per-  
 fect Weather. Great Parade.



E—the editorial we—have had  
 our first look in at the Uni-  
 versity Farm Picnic. It was  
 certainly a great gathering.  
 The weather was perfect;  
 the demonstrations and floats; the  
 decorations; the music, all were in-  
 spiring and instructive. From the up-  
 per windows of the administration  
 building the outlook over the sea of  
 moving people and of parked automo-  
 biles was one long to be remembered.  
 It is said there were 18,000 people on  
 the grounds; it looked a million, and  
 when one made the effort to break  
 away in order to make a train it  
 seemed almost impossible to get  
 loose from the crowd.

Preceding the parade and the gen-  
 eral exercises of the afternoon there  
 were sports on the athletic grounds,  
 swimming events in the big irrigation  
 tank, high school judging contests,  
 and, best of all, demonstrations in the  
 various departments where profes-  
 sors and experts of the farm school  
 staff gave of their time and talent to  
 everyone who inquired. For instance,  
 in the horticultural building in the de-  
 partment of botany Prof. Pope had  
 literally hundreds of California wild  
 flowers and specimens named and  
 told of their habit of growth and use-  
 fulness or otherwise. And amongst  
 other demonstrations were: in the  
 laboratory Prof. Beckett on measur-  
 ing irrigation water; Prof. Fossfeder  
 discussed with every inquirer as to  
 the control of mildew in vineyards  
 and gardens; hog cholera vaccination  
 was explained and demonstrated in  
 the veterinary building by Dr. H.  
 Hayes; even chicken pox vaccination  
 was conducted by Dr. Beach.

Then in the shops — to many the  
 most interesting of all—exhibits were  
 made. There were not only plows of  
 disks and plows of mold boards, but  
 many different types of moldboards  
 were shown. Profs. Davidson and  
 Fletcher had a whole battery of gas  
 engines of various types in operation  
 and literally thousands of various  
 parts of gas engines for fullest expla-  
 nation of exact construction and ma-  
 nipulation.

There were tests of spray nozzles,  
 lantern slide lectures on poultry rais-  
 ing, Dougherty; insecticides, fungi-  
 cides and poisons, de Ong; manufact-  
 ure of cheese, butter and ice cream,  
 Roadhouse; and in the auditorium a  
 special women's entertainment by  
 large choral society, moving pictures,  
 string quartets, even to instruction  
 in knitting for the Red Cross. The day  
 ended with dancing in the great din-  
 ing hall on the farm and in the audi-  
 torium.

The parade is worthy of an article,  
 which it cannot possibly have this  
 week. A few points by another Culti-  
 vator contributor follow:

By W. D. Johnston

A perfect day, a grand parade, and  
 interesting demonstrations made the  
 day a success beyond comparison.  
 The parade of 14 floats and 60 head of  
 pure bred live stock was the feature  
 of the day. The floats, which repre-  
 sented every division on the farm,  
 were drawn by the tractors which  
 participated in the tractor demonstra-  
 tion.

The auction sale held for the bene-  
 fit of the Red Cross netted that so-  
 ciety \$1487. The Holstein bull calf  
 donated by A. W. Morris & Sons of  
 Woodland, was sold to S. Lawson of  
 Woodland for \$490.

The division of agricultural engi-  
 neering was visited by more specta-  
 tors than any other department. Here  
 were demonstrations in silo construc-  
 tion, gas engine adjustment and re-  
 pair and tractor lubrication.

The horticulture department con-  
 ducted tests of spray nozzles, methods  
 of grafting and pruning trees, and the  
 preparation of home-made lime sul-  
 phur solution.

The veterinary building was the  
 scene of demonstrations in hog chol-  
 era and chicken pox vaccination.

The poultry department conducted  
 a lantern slide lecture on, "War Time  
 Poultry Raising on the Farm and in  
 City Back Yards."

## This Week's War Notes

Britain is appealing; "Send army  
 faster; we have no more reserves.

Italian troops have been sent to  
 France to aid in holding back the  
 Hun drive.

The four years of war have cost  
 France 2,600,000 men in killed, wound-  
 ed and taken prisoner.

Britain's debt now aggregates \$40-  
 000,000,000, but it is still able to ad-  
 vance vast sums to its allies.

The German-American Alliance in  
 California has decided to disband and  
 turn over its entire assets to the Red  
 Cross.

Hearst has announced that he will  
 suspend publication of his New York  
 Journal published in the German lan-  
 guage.

At the trial of the Hindu conspiracy  
 case in San Francisco one Hindu kills  
 another and in turn is shot by deputy  
 sheriff.

Holland is endeavoring to remain  
 neutral but fears that Germany may  
 march troops across her country with-  
 out a moment's notice.

An internal explosion destroyed the  
 steamer Florence H. in a French port.  
 She was an American owned 5000 ton  
 steamer and several Americans were  
 killed.

The American steamship Lake  
 Moor, making her maiden voyage, was  
 sunk by submarine in European wa-  
 ters April 11. Five officers, 91 men  
 missing.

There is opposition to the effort to  
 raise the draft age to 40 years, espe-  
 cially from the war department. Sec-  
 retary Baker says young men are  
 needed to fight this war.

Railway communication between  
 Finland and Russia has been cut. Vi-  
 borg is still in the hands of the Red  
 Guard. German troops are in control  
 of much of the territory.

Holland seems approaching her  
 crisis. Her army of 2,000,000 is mob-  
 ilized and it is reported she is pre-  
 pared to resist any encroachment on  
 the part of the Teuton army.

One more week of Liberty Loan  
 with nearly half of the \$3,000,000,000  
 yet to raise. St. Louis and Minne-  
 apolis districts have exceeded their  
 quota by over \$100,000,000 each.

American troops are occupying a  
 greater proportion of the trenches,  
 which they are holding against every  
 attack of German troops. The Sam-  
 mies have made successful counter  
 attacks and returned with Hun  
 prisoners.

The latest to declare war is Guate-  
 mala. She broke off diplomatic rela-  
 tions with Germany in April, 1917.  
 Now her national assembly declares:  
 "The republic of Guatemala occupies  
 the same position toward European  
 belligerents as does the United States.

The battle line in France and Bel-  
 gium has changed but little within  
 the past few days. Germany appears  
 to be massing for another terrific  
 drive. Meantime the Allies are  
 strengthening positions and occasion-  
 ally making slight advance to secure  
 more advantageous footing.

The English navy Hobsonized the  
 harbors of Zeebrugge and Ostend by  
 sinking in each two cement laden out-  
 of-date cruisers across the necks of  
 the harbors. In addition a dynamite  
 loaded submarine was floated inside  
 the dock gate at Zeebrugge and ex-  
 ploded, and it is reported that the  
 waters of Bruges canal are escaping.  
 The English officer who planned the  
 raid, and many of the crews were  
 killed.



# Agricultural News Notes of the Pacific Coast

## Northern California

Lake County pear producers are spraying for scab.

Butte County has adopted the wheat saving card.

Annual Rice Festival will be held at Madison, Yolo County.

J. E. Stiles has been appointed farm adviser of Sutter County.

Bowman Center, Placer County, will hold a farm picnic May 4.

"A pig or two on every ranch" is the slogan in Napa County.

Eldorado County dairymen are building more generally of silos.

Bulk moving of grain is assured at many of the larger grain shipping points.

The alfalfa mill at Woodland, Yolo County, will begin operation about May 15.

County farm advisers are mixing vast quantities of squirrel poison for distribution on squirrel week.

Tractor demonstration near Davis called out attendance variously estimated at from 30,000 to 50,000.

California Prune and Apricot Growers' Association will hold a meeting at Chico Saturday of this week.

Yolo County's rice production last year was about 12,000 acres. There will be material increase this year.

Dunnigan farm bureau center of Yolo County recently met and discussed grain sorghums and more pork.

Butte County farmers are conferring on the labor question. There will be in that county a shortage of about 500 men.

The Nuestro Farmers' Protective League has changed its organization to a farm center and will affiliate with the farm bureau.

Olive mills near Oroville have been notified that it is probable there will be an embargo on the importation of olive oil into the United States.

## Central California

Eastern Kings County's rabbit drive netted 500.

Turlock will plant nearly 35,000 acres of beans.

Kerman pear growers are cutting blight from the pear orchards as fast as it appears.

Oakdale, Stanislaus County, began rural service from its post office April 16.

Kern County plans for the building of a cotton gin at Bakersfield. It will cost about \$15,000.

Tulare County exported \$10,000,000 more worth of products last year than the year preceding.

Tulare County's orange bloom is slower than usual, but promises to be a wonder when fully out.

Alfalfa growers at Raisin City are organizing to affiliate with the State Alfalfa Growers' Association.

Cling peach growers of the state met in Fresno April 20. They assert they cannot deliver clings at \$25 per ton.

The \$4.10 price for rice is giving a boost to rice production in the Oakdale irrigation district. That district will plant 1500 acres.

State Horticultural Commissioner Hecke calls for relief from the squirrel tail deluge. It will be impracticable to store all these squirrels in Sacramento.

At the annual meeting of the California Dairymen's Association held at Oakland, Stanislaus County had six times as many representatives as any other county.

A canvass is being made of the peach growing sections of Tulare County as to output for the coming season. The county association recently met at Visalia.

A conference of wine grape growers held at Fresno endorsed the Rominger bill and will campaign for it. Members have adopted the slogan; "The saloon must go."

## Southern California

Brawley will ship 15 carloads of strawberries.

Victorville, San Bernardino County, is proud of its honor flag.

Coachella Valley is shipping large quantities of strawberries.

Imperial County has 520 acres planted to Bermuda onions; Riverside County, 892.

The first work of the cannery at Arlington, Riverside County, will be on sourcroust.

Riverside has nearly finished its Navel output, and total shipments to date aggregate about 700 cars.

Many local railway trains out of Los Angeles have been taken off so as to give more efficient military service.

Manager Churchill of the Lima Bean Growers' Association is in the East looking after the marketing of next season's crop.

The Irvine Company, with immense holdings in Orange and San Diego Counties, will plant 25,000 acres of beans this year.

A new association of apple and deciduous fruit growers has been formed in the Yucaipa Valley of San Bernardino County. It will be capitalized at \$100,000.

The Coachella Valley farm center met recently and discussed summer irrigation and cultivation, especially of beans. This was the annual meeting with election of officers.

Farm Adviser Sprague of Orange County is making strong appeal for greater interest in farm center meetings and in taking part in the campaign of "Food for the boys over there."

An important meeting of date growers was held at the experiment station at Indio last Saturday. Prof. Drummond gave a lecture and demonstration on cutting offshoots; also on pollenization.

## The Coast and General

A sugar factory is being built at Ashton, Idaho.

Food Administrator Hoover has ruled that no dried fruits may be sold before May 1.

Klickitat County, Washington, is building a highway from the interior to the Columbia River.

Sugar beet fields of Yakima, Washington, have secured 600 workers from the Montana fields.

Stockyards at various packing centers report receipts of hogs in 1918 as greatly in excess of those of 1917.

Chehalis, Washington, has served notice on loafers to get busy and aid farmers in planting or leave the city.

Investigations made at Washington in regard to "glass in food" show that but one case out of 200 has disclosed glass.

Garfield County, Washington, farmers are paying \$60 per calendar month, or \$3.50 per day and board for farm helpers.

Owing to introduction of many tractors, Harrisburg, Linn County, Oregon, is offering large numbers of draft horses for sale.

The dairy inspector of Idaho has declared war on the sale of impure and injurious substitutes for dairy or other foods under the plea of war saving.

The largest woolen mill west of the Atlantic Coast is in Portland, Oregon. It is using two and a half million pounds of wool annually, and employs 450 men.

Australia has 150,000,000 bushels of wheat surplus. It is suggested that as much of this as possible be sent to America to make up for shortage in supplies to Europe.

Milk condenseries in Oregon maintain that dairymen of that state had graded up their cows so as to produce too rich a milk for them to buy and make a profit in condensing.

*Come to Stanislaus County for Registered Holsteins*

**STANISLAUS COUNTY LEADS**

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

### I Will Sell

my milking herd of registered Holsteins in North San Joaquin Breeders' First Consignment Sale at Modesto on May 9. Interested parties are invited to come and see the herd before sale day.

**J. W. Benoit**

Route C Box 183, Modesto, Cal.

### White House Holsteins

A well bred proven herd sire for sale, also a few bull calves.

A. M. Gibens, Rt. 1, Box 307, Modesto, Cal.

### Thompson's Registered Holsteins

Young bull calves for sale with yearly record backing.

Luther Thompson, Rt. A, Box 351, Modesto, Cal.

## Creamcup Holsteins

Burke. A few young bulls for sale.

Headed by the 33.92 pound bull Creamcup Champion Pontiac

M. HOLDRIDGE, Rt. B, Box 366, Modesto, Cal.

### Pelandale Holsteins

Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.

J. A. Pelanda, Rt. B, Modesto, Cal.

### Segis Pontiac De Kol Dutch

Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

### Registered Holsteins

Young sons of Prince Hiske Walker out of A. R. O. dams for sale.

H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.

### HOLMES STOCK FARM

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R. L. Holmes Modesto, Cal.

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### North San Joaquin Breeders

First Consignment Sale

will be held at

Modesto, Cal. Thursday, May, 9, 1918

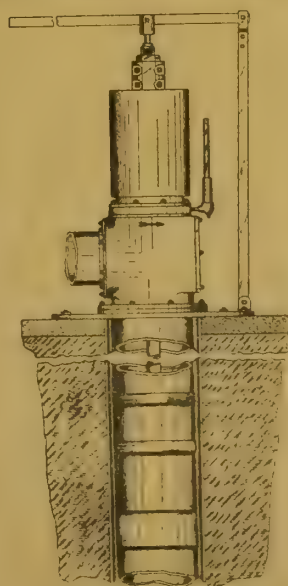
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# The Flea-Beetle, A Pest of Tomatoes and Potatoes

By F. H. Chittenden



**T**OMATO seed beds in many  
sections are being injured by  
a species of flea-beetle.  
These insects, a little larger  
than a flea, derive their com-  
mon name from their small size and  
from the fact that their powerful hind  
legs enable them to take long leaps.

Prompt remedial measures should  
be undertaken, especially in the case  
of infested seed beds.

Potatoes are attacked every year by  
flea-beetles, some of which are spe-  
cific enemies of the crops of the  
potato family. Flea-beetles begin their  
work early in the season. The beetles  
riddle the leaves of young and tender  
plants with punctures, causing the  
leaves to die, thus depleting the vi-  
tality of the plant, and the larvae, or  
young, feed at and injure the roots.

The most important of these insects  
is the potato flea-beetle. This species  
occurs practically throughout the po-  
tato-growing regions of the country  
from Canada and New England to the  
Gulf region, and in some districts in  
California. The most severe injury,  
however, is done in the North. The  
larva is a cause of "pimply" potatoes,  
which bring a lower price in the  
market, sometimes five cents a bushel  
less than the regular price. Egg plant,  
tomato and tobacco also are attacked,  
and when this insect is numerous it  
sometimes attacks other plants. Oc-  
casional injury is done to potatoes  
and tomatoes through gnawing of the  
sprouts. Eggs are laid early in May  
or June, and the life cycle may be  
completed in midsummer in about 35  
days.

During recent years this species  
has shown a great fondness for  
tomato, and during the spring and  
summer of 1917, from April 19 to  
about the middle of July, injury was  
widespread. In the case of tomato,  
the plants were sometimes destroyed  
by defoliation when potatoes also were  
present. The aggregate of attack  
shows injury about equal on these  
two crops. Attack was so sudden and  
severe that no remedies were applied  
so far as could be learned.

The egg plant flea-beetle and the

tobacco flea-beetle also attack potato,  
but each is more common on the plant  
from which its English name is de-  
rived.

## Remedies for Flea-Beetles on Potato

When potatoes are sprayed with ar-  
senate of lead for the Colorado potato  
beetle and with Bordeaux mixture for  
diseases, these beetles are repelled to  
a considerable extent. Because of  
their active jumping and flying habits  
these insects are not likely to remain  
on the plants during spraying, and so  
are not poisoned, but they do not seem  
to attack foliage that has been cov-  
ered properly with either spray ma-  
terial.

Although the subject of experiment  
for many years, the most efficient rem-  
edy for the potato flea-beetle remains  
to be found. The general opinion  
seems to be, however, that Bordeaux  
mixture alone, acting as a repellent,  
is the best. This spray to be effective  
must cover both sides of the leaf. In  
a week or ten days or when the ma-  
terial is worn off application should  
be repeated.

All wild plants of the potato family  
should be pulled up or otherwise de-  
stroyed throughout the season in  
order that the insects may have no  
other breeding place.

Bordeaux mixture can be purchased  
in convenient package form from  
dealers or prepared at home from  
bluestone (copper sulphate) which  
costs 10 to 25 cents per pound, and  
fresh stone or lump lime (quicklime):

Bluestone, 4 ounces; quicklime, 4  
ounces; water, 12 quarts; or blue-  
stone, 4 pounds; quicklime, 4 pounds;  
water, 50 gallons.

Dissolve the bluestone in a wooden  
or earthenware vessel, using hot  
water. Dilute with half the water.  
Do not use tin or other metal con-  
tainers as they would be spoiled.  
Slake the lime by adding water, a lit-  
tle at a time. When reduced to a  
milky fluid, dilute with the rest of  
the water and strain through doubled  
cheesecloth or a brass wire strainer  
of 18 meshes per inch and pour into  
it the bluestone solution. Stir well  
and apply at once. This is best when  
prepared fresh for each using.

# Weekly Report on Truck Crops



**C**ONDITION of truck crops  
for the week ending April  
13, 1918 is reported to the bu-  
reau of crop estimates,  
United States department of  
agriculture, by telegraph by assistant  
truck crop specialists in California.

## Southern California

Cabbage shipments continue light,  
but will increase next week. Quality  
is improving gradually. The heaviest  
output is expected in May. A special  
reporter in Orange County states the  
crop yielding four to five tons per  
acre of shipping stock, being reduced  
at least 25 per cent by seeders.  
Sixty to 75 cars are expected to move  
during the week.

Potato planting continues actively,  
and actual acreage figures from all  
districts are not yet available. A spe-  
cial reporter estimates the total area  
in Southern California at 12,000,  
which is somewhat heavier than  
usual, but 20 per cent less than last  
year. Only 200 acres are expected to  
be ready in May, the bulk of the crop  
coming on in July. Late planting and

poor seed may shorten the yield and  
total shipments are not likely to ex-  
ceed 1700 cars.

Lettuce shipments from Imperial  
Valley have stopped for the season  
and shipments from the Los Angeles  
district are very light. There are no  
immediate prospects for good sup-  
plies of desirable shipping stock.

Strawberry shipments from Imper-  
ial Valley are at their height, amount-  
ing to 350 trays in one day. Los An-  
geles County made a very light first  
bloom and a special reporter esti-  
mates the crop at 50 per cent or 60  
per cent of normal, with heavy ship-  
ments commencing the 20th of the  
month. Other reports indicate that it  
is doubtful whether any car lots will  
be shipped this year.

Bermuda onion situation is report-  
ed unchanged, except that thrips  
has reduced early estimates of yields  
and arrangements are under way for  
standardizing the pack. April 22 is  
set for the date for shipping the  
first car.

Cucumbers have been retarded by

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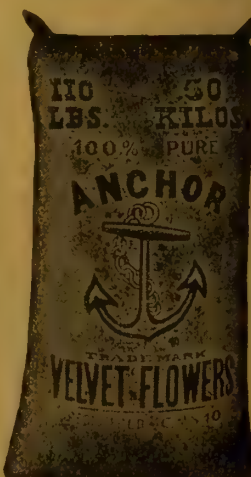


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will save you money.



cool weather. Crop prospects are favorable, but probably car lots will not roll prior to May 1 and possibly later.

The condition of truck crops is estimated as follows: Asparagus 89 per cent; cabbage 65 per cent, cantaloupes 92 per cent, cucumbers 89 per cent, lettuce 62 per cent, onions 72 per cent, potatoes 85 per cent, strawberries 75 per cent, tomatoes 85 per cent, watermelons 90 per cent.

#### Central California

Early potatoes were not reported frosted in the Bay region, but were injured in parts of the Sacramento Valley. Acreage is generally reduced except in the Colma district, where Garnets are grown. Prospects are for a good crop in this section.

Asparagus has not yet come on in great quantities. A portion of the distributors have discontinued Eastern shipments for the season. Their output was about 20 per cent of the volume they had counted on. Labor shortage during the rush period will probably cause heavy losses of the product.

Cabbage shipping from the Bay district is practically finished, except the spring crop, which is not in general demand for shipping. Sacramento cabbage is growing well, but field inspection did not show the quality of the Early York to be very good. Demand for canning and evaporating may reduce the supply for shipping.

Celery. It is estimated by a special reporter that the prospective acreage of celery for this part of the state is 2180 acres, which represents about 55 per cent of last year's acreage.

Strawberries are now being picked, but heavy shipments are not expected until next month. A special reporter in Alameda County estimates the crop at 20 per cent below normal. The condition of foliage is poor, but no serious frost damage has been done.

Onions. The early crop is making an excellent growth, but frost damage to the young plants of the main crop looked very serious at first. Later indications are that the crop is recovering to a large extent. A few fields were plowed up.

Onion seed crops were not seriously affected, although personal inspection showed slight tip injury in certain fields. A special reporter estimates the acreage of onions growing for seed at 10,000 acres, or more than double last year's planting.

Beet seed crops were injured by frost in many fields, but the damage is not considered serious. The proportionate increase on beet seed is larger than for any other seed crop.

Carrot seed crops are doing well, and also show a big increase in area. A large crop of spinach grown between the rows has perhaps reduced the productive capacity of certain fields.

Spinach has been maturing faster than local canneries could handle it, and distant plants have been taking the surplus. Yields are running six tons and upwards and indications are that the pack will amount to 300,000 cases.

Cantaloupes are coming up rapidly. Reports agree that San Joaquin Valley will have 3000 acres, or upwards. Cars are expected the first half of July.

The condition of truck crops is estimated as follows: Asparagus 85 per cent, artichokes 70 per cent, cabbage 90 per cent, lettuce 75 per cent, onions 80 per cent, peas 88 per cent, potatoes 70 per cent, spinach 98 per cent, strawberries 85 per cent.

#### VEGETABLE SHIPMENTS

We have word from Chairman W. Q. Wright of the California Vegetable Growers' committee in effect that the unfortunate condition in vegetable shipping has now been corrected and presumably the work of the committee is finished. Committeeman Thomas O'Neill, who took the matter up with railroad executives at Washington, New York and Chicago, wires under date of April 12:

"As a result of conferences with railroad executives at Washington, New York and Chicago, definite schedules are now in effect covering the eastbound movement of California perishables on the basis requested by your committee, i. e., 9 days to Chicago, 14 days to New York, 15 days to Boston, and corresponding schedules to intermediate points. The details of these schedules, as far as Western lines are concerned, were finally approved by traffic and operating officials here today, and copies of these will be furnished us when issued."

He adds that much credit is due to Traffic Director Chambers of the United States railroad administration because of his uniting in effort with the committee to save the California vegetable industry.

#### SPINACH

Spinach cultivation will be carried on much more extensively in California in the future, according to a bulletin just issued by Stanley S. Rogers of the University of California. This will be due to the great demand for this crop for canning purposes.

"Spinach is well adapted to a large area in California," Professor Rogers continues, "and may be grown where ever the conditions are favorable for the production of vegetables. Under normal conditions when growing spinach in large tracts, the cost varies from \$25 to \$35 per acre, exclusive of land values of fertilizers. The yield per acre varies from three to five tons, with an average production of four tons. When selling to the cannery the customary price is \$25 per ton. On the fresh market the grower will usually receive from three cents to five cents per pound, unless the demand is oversupplied."

"Spinach is best adapted to a rich, light loam and is not a satisfactory crop to grow on soils of poor quality or those which will not retain moisture well. The climatic requirements of this crop are very exacting. The plants will stand without injury a relatively low degree of temperature but are seriously injured by heat. Planting early in the fall and late in the spring should be avoided since the plants will not make a satisfactory growth during hot weather. When planting during the rainy season, provided the soil is of a sandy nature and is free from weeds so that it will not pack wet, this crop may require no cultivation. The crop is ready to harvest in six weeks to three months after planting."

Professor Rogers' article, entitled "Spinach Growing in California," may be obtained by writing to the University of California College of Agriculture, Berkeley.

The soldier and the farmer are eager to do their full share. Both incur risks. Very many civilians are equally eager to do their share but may not appreciate the opportunity to serve in the field of agriculture.—Secretary of Agriculture.

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QUICK AND ECONOMICAL TRANSPORTATION

## Nash Trucks Shorten Your Trips

Nash trucks, replacing teams, double your loads to the creamery and cut the time of the trip in half. Powerful and dependable, they haul your loads at lowest cost and in the shortest possible time.

They have many superior mechanical features which make them unusually adapted to this service. Equipped with M. & S. automatic locking differentials, they get through where other trucks without this important feature cannot go.

The Nash truck's driving wheels cannot spin. This saves fuel and tires. It lets Nash trucks keep going on muddy and slippery roads.

The strong, internal gear drive axle of Nash trucks is simpler and lighter than others and delivers more power to the driving wheels, especially at low engine speeds.

Unusually long springs, protecting the truck's load from the bumps of the road, and an electric starting and lighting equipment are among the other Nash features our transportation expert will be glad to explain to you in detail.

One Ton Chassis . . .	\$1495
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# NASH MOTORS

VALUE CARS AT VOLUME PRICES

(706)



## Breed Leaders

Every breed of livestock has its outstanding character the same as the human kind. A great dairy cow has proved her ability to produce anywhere up to 15 tons of milk annually; the trotting horse has secured his record around two minutes; the beefmaker has shown his ability to make the least amount of feed into the greatest amount of food; swine, sheep and others of the livestock family have shown themselves great characters. In addition—and here is where their worth is proven—these animals can transmit their productive power to their offspring.

Beginning with the issue of August 4 the Cultivator gave an account of Pietertje Bloom of the University Farm dairy herd. Some things she has done and more that her daughters have done were chronicled. She was a most worthy leader in this series of articles. Others of her kind follow. More of the "handsome is as handsome does" type of animals will be given in the columns of the Cultivator during the next few months.

Written for California Cultivator By C. A. Briggs

### WINNIE KORNDYKE CORNUCOPIA

**W**INNIE Korndyke Cornucopia DeKol 101449, owned by the J. S. Gibson Company of Williams, is of the blood royal and a royal performer at the pail. She was born on April 18, 1907, sired by Aaggie Cornucopia

a half sister of Prince Alcartra Korndyke, the present senior herd sire of the Gibson herd. He is a son of the great Morris cow, Tilly Alcartra, the only 40 pound cow in the West.

"Winnie's" records have been many and good and but for a mistake in feeding she might well have been a

milk; ten months, 1034.4 pounds butter, 27,443.3 pounds milk, a world's record by over 400 pounds. At this time through a mistake she was fed some frosted alfalfa and fell off in her production but still finished her year's test with a record of 1201 pounds of butter and 31,034.2 pounds of milk. She is a cow of fine strong individuality and looks good to her owner and every lover of a great producing dairy cow.

### JANE GARDEN FARM DEVELOPS A 32 POUND COW

While a considerable number of very creditable records have been made by some of the registered Holsteins at Jane Garden Farm, owned by Fred W. Kiesel, Sacramento, president of California Holstein-Friesian Association, it is not until now that

ful nine year old cow, who has to her credit on official test 723.4 pounds milk and 32.58 pounds butter in seven days, and promises to make some further gains. At freshening she dropped a fine bull calf by King Korndyke Pontiac, sire of the \$6500 bull King Korndyke Pontiac 20th.

Jane Garden Farm is a delight as a farm, comprising some 500 acres of rich river bottom that is indeed garden land, every inch of it, growing seven crops of alfalfa without irrigation, enormous crops of ensilage corn, besides wondrous crops of beans, the latter crop having amounted to considerably over \$100,000 last year.

Equally pleasing is the herd of registered Holsteins with which Mr. Kiesel has populated the place. With his unusually well selected foundation females he mated the great young bull



Winnie Korndyke Cornucopia De Kol



Sita De Kol Princess

Johanna Lad 32554 out of Winnie Lamb Korndyke DeKol 78795. The sire is a son of the first 34 pound cow, and on his side as well as through her dam "Winnie" carries some of the best blood of the breed. Her dam is

world's yearly record cow. In seven days her record was 28.73 pounds butter, 789 pounds milk; 30 days, 117.2 pounds butter, 3215.4 pounds milk; 274 days after calving, seven days 22.57 pounds butter, 558.4 pounds

one of the ambitions of every newly established breeding farm—the development of a 30 pound cow—has been realized.

The member of the herd to turn the trick is Sita De Kol Princess, a beauti-

Prince Gelsche Walker Korndyke, who has developed into an individual of extraordinary merit, and his daughters, of which there are now a large number in the herd, are of very great promise, possessing in a marked de-

# Hollywood Farm

ANNOUNCES

## Judge Segis 80912



PIETERTJE FLOA ARTIS 114334  
Butter ..... 7 days 38.14 pounds  
Butter ..... 30 days 140.02 pounds



HOLLYWOOD LILITH BONHUE  
Butter ..... 7 days 24.4 pounds  
As a junior two year old.



28 A. R. O. Daughters, including:

VANDERKAMP SEGIS De Kol at 5 years.....	Butter 7 days 37.57 pounds
VANDERKAMP SEGIS FLORIE at 4 years.....	Butter 7 days 28.85 pounds
VANDERKAMP SEGIS EVA at 2½ years.....	Butter 7 days 28.55 pounds
VANDERKAMP SEGIS GIRL at 4 years.....	Butter 7 days 25.70 pounds
VANDERKAMP SEGIS CLARA at 4 years.....	Butter 7 days 25.67 pounds
VANDERKAMP SEGIS BELL at 3 years.....	Butter 7 days 25.32 pounds
VANDERKAMP SEGIS ORMSBY MAID at 1 year 11 months.....	Butter 7 days 22.14 pounds

Buy Your Next Sire at Hollywood

In this herd JUDGE SEGIS is being bred to 200 choice females, twelve of them with records from 30 to 42.35 pounds in seven days, the last named figure being the world's two year old record of Glen Alex Queen De Kol.

The herd is under Federal supervision, and we are in position to furnish you with clean, well bred cattle at prices such cattle are worth.

Correspondence and Visitors Invited

**Hollywood Farm**  
F. S. STIMSON, Owner

**Hollywood, Washington**  
(Near Seattle)



GLEN ALEX QUEEN DE KOL 375362  
World's record two year old.  
Milk ..... 7 days 603.8 pounds  
Butter ..... 7 days 42.35 pounds  
Bred to Judge Segis and due to calve August 2, 1918.



PIETERTJE KORNDYKE ABBEKER  
120730  
Milk ..... 7 days 712.9 pounds  
Butter ..... 7 days 35.37 pounds  
Milk ..... 30 days 3235.8 pounds  
Butter ..... 30 days 141.65 pounds  
Best day's milk.... 126.2 pounds  
A granddaughter of Pontiac Korndyke.





Miss Valley Mead De Kol Walker

gree the great capacity and fine udder development that is so characteristic of the Walker family. From these heifers there will soon be coming on a crop of calves sired by King Korn-dyke Pontiac, in fact a few have al-ready arrived and they show that this cross is one of high promise.

Mr. Kiesel also owns a half interest in Sir Aaggie De Kol Acme, son of the world's yearly official record cow Aaggie Acme of Riverside 2nd, and he is being bred to many of the best females in the herd.

From now on some good records may be looked for regularly from Jane Garden Farm, as the big herd is just about to swing into its stride.

#### MISS VALLEY MEAD DE KOL WALKER TAKEN OFF TEST

The sensational daughter of Prince Gelsche Walker, Miss Valley Mead De Kol Walker, has been taken off test in the herd of A. W. Morris & Sons, Woodland, just 30 days before she is due to calve again on April 30.

Her past accomplishments are al-most too well known to warrant re-peating again, yet in view of her latest complete record it is well to do so because of the conditions under which she has made her successive records.

She dropped her first calf as a senior two year old and made official records of 534 pounds milk and 25.68 pounds butter in seven days. Eight months after calving she made 21.33 pounds butter in seven days, which is still a world's record in class. She was continued on test and at the end of 257 days she had to her credit 17,010.9 pounds milk and 790.38 pounds butter, but was taken off test as she had been bred to calve as a junior three year old and was close to freshening date. Freshening as a junior three year old she made the great official records of 688.6 pounds milk and 36.81 pounds butter in seven days. She was again continued on yearly test but along in the middle of it was shipped over 500 miles in very hot weather and suffered con-siderably from the trip, dropping off very sharply in production. She grad-ually recovered her stride however, and in seven days eight months after calving made 25.24 pounds butter in seven days, which is a world's record in class. Continuing on she won first place over all breeds in the California Dairy Cow Competition, with a pro-duction of 819.42 pounds butterfat in ten months, equal to 1024.27 pounds butter. At the end of 335 days, within 30 days of calving, she was taken off test and had to her credit for that period 21,915.6 pounds milk and an even 1111 pounds butter, which is the second highest record ever made by a junior three year old even for a full year.

As most everyone knows, Miss Val-ley Mead De Kol Walker is the dam of W. J. Higdon's \$6500 bull King Korndyke Pontiac 20th. This year

she will drop a calf by Sir Aaggie De Kol Acme, son of the world's official yearly record butter cow Aaggie Acme of Riverside 2nd, and there is lively

speculation as to the sex of the com-ing youngster. Male or female, it will be some calf.

The only legitimate "con game" is the con-servation game.

#### RED CROSS SAMMY

At the Inter-Mountain Livestock Show in Salt Lake City are seen ex-ceptionally fine beef stock. One of these, a Hereford steer weighing well

Continued on Page 543



Red Cross Sammy

## A Sale of Extraordinary Character

# Fourth Sacramento Sale

# 140 REGISTERED HOLSTEINS 140

## State Fair Grounds, Sacramento, Cal. June 5-6, 1918

California Holstein breeders are responding nobly to the call for only the best class of cattle in our public sales, and we go on record with the statement that this sale contains the best lot of cattle from every standpoint that has ever appeared in a California sale of equal size, and we doubt if more than one smaller sale in the state has ever equalled its quality. And these cattle are in good physical condition, many of the heavy springers will be in shape to go on test when they freshen shortly after sale date, while the large number of fresh cows and heifers in the sale will be in such condition that the buyer is assured they can go ahead for big production right from the moment of his ownership.

Here are only a part of the great females in this sale:

A 30 POUND JUNIOR FOUR YEAR OLD daughter of a 35 pound sire.

A DAUGHTER OF PRINCE GELSCHER WALKER out of a 27 pound daughter of a 32 pound cow.

A DAUGHTER OF KING KORNDYKE SADIE VALE 22ND, out of May Korndyke, for many years the youngest 30 pound cow of the breed.

TWO DAUGHTERS OF KING SEGIS

DE KOL KORNDYKE, one out of a 28

pound daughter of King Walker Segis,

the other out of a 22.95 pound grand-

daughter of Pontiac Hengerveld Par-

thena.

FOUR DAUGHTERS OF KING SEGIS

PONTIAC, one out of a daughter of the

40 pound sire Johanna McKinley Segis.

A DAUGHTER OF KING PONTIAC

MAYFLOWER out of a 21 pound dam.

A DAUGHTER OF KING PONTIAC

NETHERLAND SEGIS out of a 28

pound dam.

A GREAT GROUP OF DAUGHTERS OF

KING KORNDYKE SADIE VALE 27TH,

one of whose daughters sold for \$1400 in

the Guaranty Sale. One of these is out

of a 29 pound dam, another out of a 27

pound four year old daughter of Chang-

eling Butter Boy.

A 29.13 POUND DAUGHTER OF SIR

PONTIAC RAG APPLE KORNDYKE.

A 26.41 POUND COW and her daughter

by Sir Korndyke Pontiac Artis out of a

30 pound daughter of Sir Veeman Hen-

gerveld.

A 22.12 POUND DAUGHTER OF

PIETERTJE HENGERSVELD SEGIS,

record made at two years two months.

RIVERVIEW BRACELET BRETT, first

prize two year old at 1917 State Fair,

Fresno and San Francisco Land Show.

A 23.97 POUND FOUR YEAR OLD granddaughter of King

Segis Hengerveld.

TWO DAUGHTERS OF A 40 POUND SIRE.

A DAUGHTER OF SEGIS PONTIAC DE KOL BURKE out

of a 22.14 pound four year old.

A DAUGHTER OF A 25 POUND COW that made 770.68

pounds butter in one year, bred to a grandson of Finnerne

Pride Johanna Rue.

A DAUGHTER OF KING SEGIS PONTIAC JANNEK out of an A. R. O. two year old granddaughter of Sir Fayne Con-cordia.

A DAUGHTER OF KING SEGIS PONTIAC JANNEK out of a great 28 pound four year old and bred to the \$6500 36 pound bull, King Korndyke Pontiac 20th.

HIGHLY BRED A. R. O. COWS AND HEIFERS bred to

the great King of the Black and Whites.

TWO DAUGHTERS OF PRINCE

JULIANA DE KOL WALKER in calf to

a son of King Korndyke Sadie Vale.

A 729.6 POUND YEARLY RECORD

JUNIOR TWO YEAR OLD daughter of a

40 pound sire.

A 26 POUND COW bred to a 40 pound

bull.

A 20 POUND THREE YEAR OLD

DAUGHTER OF PRINCE GELSCHER

WALKER bred to a 40 pound bull.

A DAUGHTER OF KING KORNDYKE

PONTIAC bred to a 40 pound bull.

A HEIFER that made 620.47 pounds but-

ter in one year as a two year old, bred

to a 40 pound bull.

SOME SPLENDID HEIFERS bred to

King Mead of Riverside and Prince

Gelsche Walker.

#### BULLS

A SON OF SEGIS PONTIAC DE KOL BURKE out of a 34 pound daughter of Changeling Butter Boy and a 30 pound cow. A beautiful individual, nearly white.

TWO SONS OF KING KORNDYKE SADIE VALE 27TH, one out of a 29 pound four year old daughter of King Segis 11th, the other out of a 22 pound

three year old daughter of Changeling Butter Boy.

TWO SONS OF THE 40 POUND SIRE PRINCE ALCAR-

TRA KORNDYKE, full brothers, out of a 24 pound dam.

GREAT YOUNG SONS OF Supreme Glista Pietje, King Pon-

tiac Segis Inka, King Lillian Walker Segis, and It King of

the Pontiacs, out of well bred dams.

A SON OF THE 34 POUND SIRE KING PONTIAC

NETHERLAND SEGIS 3D, out of a 26.86 pound four year

old.

A SON OF MODEL KING SEGIS KONINGEN out of a

splendidly bred dam.

Every animal in this sale is pledged to absolute sale without reserve, limit, or by-bid, guaranteed in writing to be a breeder, has individual tuberculin test certificate and is sold subject to tuberculin re-test by the purchaser.

Catalog Free on Request

MANAGEMENT OF

## California Breeders Sales and Pedigree Company

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### LONE STAR Registered Herd



### HEREFORDS Unregistered Herds

800 Cows and 50 Bulls Best of Breeding Show Winners

All stock guaranteed as represented. Write for terms and particulars.

6000 Head Both Sexes Same Breeding as Registered Herd

old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.

Write for immediate delivery, 200 two year

Scharbaaur & Eldson, Midland, Texas

Elevation 3000 Feet





**PURE BRED**



**REGIST'D HOLSTEINS**

**Prince Gelsche Walker Kordyke**  
**137414**

Disinterested breeders and authorities on type and breeding share our firm belief in a wonderful future for our great herd sire

He himself has developed into a bull of magnificent presence, but his greatness is vested in the extraordinary sons and daughters that have been dropped to his service.

His daughters show the great dairy capacity, beautiful udder development and veining, and true dairy form that is their inheritance.

His sons are straight, deep bodied, full, chested fellows that will breed quality into any herd. Wouldn't it be good business to invest in one of these youngsters for your herd sire?

We price them moderately and give terms if you wish.

**BELOW IS**  
**King Korndyke Pontiac**

**JANE GARDEN FARM**  
SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C.W. YOUNG SUPT.



**Guaranteed**



**Breeding**

## Kansas Germ Free Fluid Vaccine For BLACKLEG

This seal is our word of honor and your protection. If it is not on the label of every bottle don't use it. Only the original carries this signature.



DENVER, COLO. WICHITA, KANS.  
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**401 Bryson Blk.**  
**Los Angeles, Cal.**

Made by Dr. O. M. Franklin, Originator  
Holds the record of immunizing more than a  
Half Million Calves against Blackleg with

— only one handling of each calf — has  
stood the test of time—easy and safe to  
use—cannot give the disease to calves or  
spread it in pastures.

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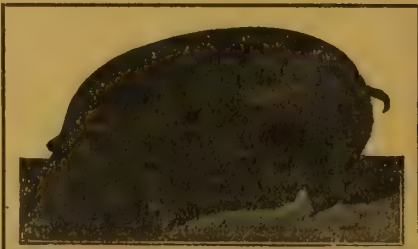
**The Kansas Blackleg Serum Co.**

## Poland Chinas, Medium Type

Choice breeding stock, both sexes  
from Panama-Pacific International  
Exposition prize winning strain; 12  
firsts, Junior Champion and Re-  
serve Grand Champion Boar. Jun-  
ior and Senior and Grand Cham-  
pion Sows, \$2145 cash awards.  
Write to

**M. Bassett**

Hanford, Kings County, Cal.



## Treatment of Scours in Calves

From Address by C. V. Castle at Dairy Conference, Davis

**C**ONTAGIOUS scours and calf pneumonia have been found to be caused in many or most cases by the same germ which causes contagious abortion in cattle. Herds which have the germs of abortion in them, and many do, even if no cases of abortion are present, are the ones which suffer most from contagious scours and pneumonia. Quite commonly the calf from a cow that has aborted in the past does not show either scours or pneumonia, having perhaps become immunized from the blood of its mother. Calves from healthy mothers are very susceptible and milk from cows which have aborted or are reactors to the abortion test, is very likely to cause scours and should not be fed to young calves.

### Preventive Treatment

In preventing scours, the following practice is recommended:

Before calving place the cow in a well bedded boxstall, which has been thoroughly disinfected with Kresol or sheep dip. As soon as the calf is born disinfect the navel with iodine solution, and if the navel is not well dried up in 24 hours, put on more iodine. Before allowing the calf to suck wash the cow's tail, udder and flanks in soap and water with a disinfectant in it. As soon as the cow has had a chance to dry, off the calf see to it that it nurses well, helping it if necessary. After the calf has sucked it is well to give it an enema. This is given by means of a fountain syringe and several feet of flexible rubber tubing. Warm water containing a few drops of Lugol's iodine solution is used, and the large intestines are flushed out as clean as possible.

After the calf has sucked it may

be given three teaspoons of a stock solution of one part formaldehyde to 30 parts water in a half pint of warm water. A teaspoon of soda may be placed in the formalin solution as well.

These precautions should ensure a healthy calf but quite often scours may develop even then, especially if the infection entered the calf previous to birth.

### Curative Treatment

The first thing to do is to reduce the feed even if the calf shows some appetite. Some milk must be given to keep up the calf's strength, and it may be of some use to pasteurize the milk until the calf recovers, after which it will do better on unpasteurized milk. Contagious scours runs a course of several days, and it is worse than doing nothing to try and stop it suddenly. It is best to allow the scours to continue in a fairly acute form until recovery is complete, rather than to try and check it by use of astringents, which may cause a state of chronic indigestion. Calves properly brought from an attack of scours soon pick up and are as good as ever. While the calf is scouring perhaps five pounds of milk a day is enough. After it has recovered the amount of milk must be raised gradually as a relapse may occur from overfeeding, or indigestion may result.

In treating scours, formaldehyde is very useful. A stock solution is made up as stated before and twice or three times a day about two to four teaspoons in a half pint of warm water is given. A teaspoon of blood meal placed in the calf's mouth twice a day acts as a tonic and as a mild astringent. Enemas with hot water and Lugol's iodine solution bring great relief and are very helpful.

## Stock Feeds That Are Money Makers

Written for California Cultivator

**A**RTICHOKES are one of the best paying crops raised as they yield such a large amount of feed per acre. On good rich soil they sometimes yield 1000 bushels per acre, and from six to ten tons of tops. I planted a quarter of an acre on the 30th of May, on a poor clay point in Oregon, and in the fall pulled 52 sacks, just what pulled up with the tops, no telling how many there would have been if they had been dug, that is a yield of 300 bushels per acre. Horses, milk cows, sheep and goats like them and will eat the tops clean if turned in before frost bitten. Some people fill their silos with the tops to feed stock. One man in Polk County, Oregon, fattened 90 head of hogs on five acres of artichokes. Another writes me he sells \$1000 worth of pork every year fattened on artichokes.

### Artichokes and Alfalfa

My idea is this, to finish hogs out well they should be allowed to run on alfalfa or clover pasture while running on the artichokes, and a little ground oats and peas, or wheat or barley, would finish them up and make the pork more solid.

Cut and plant artichokes same as potatoes, a foot apart, in rows 3½ feet apart. Cultivate first year. Next spring, after hogs have dug them, plow and harrow ground well and pick up what's harrowed out on top and let them go. There are generally

enough in the ground to make a good stand; they will then take care of themselves. Remember and plant where you want them to stay for years and where it's handy to turn hogs in to dig them. If your soil is not sandy, but heavy, do not turn hogs in when too wet or ground will bake when it gets dry. Of course dig what you need for seed or feed for your stock and put in dry place for winter use and let hogs dig the rest. Then there is enough left in ground to seed the patch.

Where hogs are fed in this way it is much cheaper than in a corn country, and hogs do not die with cholera as a rule. Every rancher that keeps stock should raise an acre or more.

### Sudan Grass

Sudan produces a wonder crop of hay that stock will leave good alfalfa to eat, as it has a sweet taste and stock do well on it both to fatten and to produce milk. An up-to-date rancher in Fresno County last week told me that in 41 days (a month and 11 days) from sowing he cut three tons per acre last year, and it averaged seven feet high. It was cut twice after that. He also said his stock left alfalfa pasture to get the Sudan hay.

Another man said he cut his Sudan six times. It has been tried, sowing in March, April, May, June, July and August, and May sowing proves the best. If sown in August it does well

Clean and Clear  
as Water



Awarded  
Gold Medal  
Pan-Pac. Expo.

## For Retained Afterbirth

When a cow fails to "clean" promptly, she should be flushed out with B-K. A retained afterbirth neglected may cause Abortion or Barrenness.

B-K as a douche brings the afterbirth naturally—saves removing by hand. B-K kills the infecting germs and foul odors—beats the uterus—removes slime and acid—no straining—no irritation. B-K is much more effective and safer than lysol, carbolic acid, Lugol's solution and oily coal-tar disinfectants, which do not cleanse the uterus, but make it more acid.

If your dealer does not have B-K, send us his name.

FREE BULLETINS: Send for complete information—"special trial offer" and bulletins No. 52, "Contagious Abortion," and No. 136, "Calf Scours."

**General Laboratories**  
3127 So. Dickinson St.,  
Madison, Wis., U. S. A.



but time is short and you do not get so many cuttings.

If sown early in spring with alfalfa it doubles your hay crop the first year. When sown with alfalfa sow only half as thick as when sown by itself. At the end of the year the Sudan is gone and the alfalfa stays. Sow 18 to 20 pounds per acre broadcast, 10 to 12 pounds per acre if you drill it in.

#### Thousand-Headed Cow Kale

This makes green feed all winter for milk cows, hogs and chickens. It is excellent for milk cows, increasing

the flow of milk. It is almost unbelievable what it will yield per acre. One head has been known to weigh 60 pounds, and in planting there should be 5000 plants per acre. Plant the seed in boxes or rows early in garden and transplant like cabbage. If planting a large patch plow a furrow and lay the plants on the furrow and cover plants with plow. Plant in every third furrow, then roll ground with heavy horse roller, and most of the plants will live. Be sure and plant close to feed yard to be handy to cut and feed green each day. It takes less than a pound of seed per acre.

## Bulletins on Sheep

"The American Sheep Breeder" gives the following list of bulletins of value to those interested in sheep: U. S. Bulletins

"Breeds of Sheep for the Farm," by F. R. Marshall, Farmers Bulletin 576, 16 pages, covers the principal breeds and their special adaptation.

"Equipment for Farm Sheep Rais-

keting, making this a concise, direct, easily handled bulletin.

These three can be secured by writing Chief of Bureau of Publications, Department of Agriculture, Washington, D. C.

#### State Bulletins

"Sheep Raising," by B. O. Severson, Pennsylvania Extension Circular 49,



Sheep in Pesco Valley, New Mexico

—Courtesy, The Earth.

ing," by V. O. McWhorter, Farmers Bulletin 810, 27 pages, contains barn plans and descriptions, feeding racks and troughs, hurdles, lambing pens, fencing, etc.

"Farm Sheep Raising for Beginners," by F. R. Marshall and R. B. Millen, Farmers Bulletin 840, 24 pages, discusses sheep prospects, requirements for sheep raising, starting the flock, breeding season, winter care, lambing, the summer and mar-

62 pages, another excellent bulletin covering the management of sheep as well as breeds. Write Pennsylvania State College, State College, Pennsylvania.

"The Sheep Industry in New York State," Bulletin 96, New York Department of Agriculture, Albany, N. Y., 230 pages of sound breed discussion and management problems.

## Field Notes from the Live Stock Men

Another 32 pound record has been made in New York by a Holstein-Friesian. Segis Hengerveld Fayne Johanna 173739, owned by Oliver Cabana, Jr., has shown a production of 649.6 pounds milk containing 32.112 pounds fat in seven consecutive days. She freshened at the age of six years, one month, 27 days. Her sire is Woodcrest Nig De Kol 40719; her dam is Segis Fayne Johanna 114658. With this production she is the thirtieth cow to obtain place in the list of Holstein-Friesian cows with productions exceeding 32 pounds fat in seven days. Computed on the 80 per cent basis the equivalent butter claimed for Segis Hengerveld Fayne Johanna amounts to 40.14 pounds. Fairview Korndyke Hengerveld 3d 203558, also owned by Mr. Cabana, is reported as producing 607.8 pounds milk containing 31.425 pounds fat, with the test still in progress.

Tilly Alcartra has now been on strictly official test for over 100 days of her sixth lactation period. She is milking over 100 pounds per day at this time, and is over 650 pounds of milk ahead of the first 100 days in

the year in which she made her world's record. She is also making the biggest butter record of her career and unless something unforeseen happens she will do something remarkable for both milk and butter during this year.

One of the finest Holstein herds on the Pacific Coast will be sold at dispersal sale in May. This is the La-Conner Flats Stock Farm herd of 90 head, owned by J. H. Hulbert Jr., Mount Vernon, Washington. The herd contains a large number of noted show animals and producers, including the great heifer Ormsby Segis Marie, who recently completed yearly records as a senior three year old of 27,186.8 pounds milk and 1089.6 pounds butter in one year, the world's record for milk and second highest for butter in class. The sale will be held on the farm on May 25, under management of California Breeders Sales and Pedigree Company, Sacramento. Col. Ben A. Rhoades, Los Angeles, will be the auctioneer.

Aralia De Kol Mead has just completed a strictly official yearly test in the herd of A. W. Morris & Sons,



## IF COWS COULD TALK

"Good morning, Mrs. Fawncoat. I hear that all the cows in the county are joining the 'Win-the-War' Club."

"Yes, Mrs. Starface; Secretary of Agriculture Houston says we must increase the production of butter-fat, and we cows have all promised to do our 'bit'."

"There's one thing I want to say right now," spoke up Mrs. Black. "The farmers have got to back us up in this movement. I'm with the rest of you, heart and soul, but what chance have I got?"

"Why, Mrs. Black, what's the matter? You have a fine warm barn and plenty to eat and drink."

"Yes, I know; but what can I do as long as they use that old cream separator on the place? It never was any good, anyway, and now it wastes so much cream I'm just plain discouraged."

"Well, you're not so badly off as some cows, where they haven't any cream separator at all."

"I don't know about that. There's a lot of cream separators in this county that are only 'excuses'—not much better than none at all. I tell you, Mrs. Fawncoat, with butter at present prices and the people at Washington begging every one to save fat, it's almost a crime to waste butter-fat the way some of these farmers do."

"That's one thing I'm thankful for," said Mrs. Fawncoat, "there's no cream wasted on this farm. We have a De Laval Cream Separator and everybody knows that the De Laval is the closest skimming machine."

"Well," said Mrs. Starface, "we never used a De Laval on our place until last fall and supposed one separator was about as good as another; but, honest, the De Laval is the first cream separator we've ever had that gave us cows a square deal."

#### P.S.

Of course your cows can't talk—but if they could you'd never have a moment's peace until you got a De Laval Cream Separator. Remember that a De Laval may be bought for cash, or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

### DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

61 Beale Street, San Francisco  
50,000 Branches and Local Agencies the world over

## AYRSHIRES

The Economical Breeds  
when Feed is High

## CHESTERS

A Few Would Give You  
A Good Start

Melone Co.

Oak Knoll

Napa, Cal.

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT

Hauser Packing Co.

Los Angeles



## Dispersal Sale of a Great Herd of Registered Holsteins

### 90 HEAD

#### La Conner Flats Stock Farm

owned by J. H. Hulbert, Jr.

Mount Vernon, Washington, Saturday May 25, 1918

This is an exceptionally high class herd of producers and show ring winners, possessing a high degree of uniformity in breeding and type. The herd has been tuberculin tested regularly for several years, and for some time past has been under Federal supervision. In addition all animals over six months of age are sold subject to 60 day retest.

ORMSBY

SEGIS

MARIE

A grand-daughter of King Segis.



Her records at three years six months:  
Milk 7 days 640.3  
Butter 7 days 26.83  
Eight months after calving:  
Milk 7 days 493.6  
Butter 7 days 19.90  
365 days semi-official:  
Milk ..... 27,186.8  
(World's record in class)  
Butter ..... 1089.67

THE SALE WILL INCLUDE:

ORMSBY SEGIS MARIE, together with her yearling son by Segis Pontiac Acme.

FORTY-TWO DAUGHTERS OF SEGIS PONTIAC ACME, whose dam is a high yearly record daughter of the former world's record cow, Riverside Sadle De Kol Burke. His first four daughters to freshen as two year olds are now on test and have 15, 18, 20 and 23.9 pounds butter respectively to their credit in seven days.

A TWO TIMES 30 POUND COW and her two daughters.

FORTY-SIX DAUGHTERS OF A. R. O. COWS, 32 of them out of dams with records above 20 pounds butter in seven days.

FORTY CHOICE COWS AND HEIFERS bred to four great yearly record bulls.

There are many outstanding individuals in this sale, including prize winners at the major Northwest shows and a second prize winner at the 1917 National at Columbus, Ohio.

CATALOG FREE ON REQUEST.

Management

### California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President

C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneer—Col. Ben A. Rhoades, Los Angeles.

## Keep Your Eye on This Breeding

Miss Valley Mead De Kol Walker has been taken off test, just 30 days before due to calve again. In 335 days she made 21,915.6 pounds milk and an even 1111 pounds butter, the second highest yearly butter record for a junior three year old of the breed. She already holds the world's record for butter in seven days eight months after calving in two classes.

### PRINCE RIVERSIDE WALKER



Prince Riverside Walker

Our Entire Herd is Tuberculin Tested

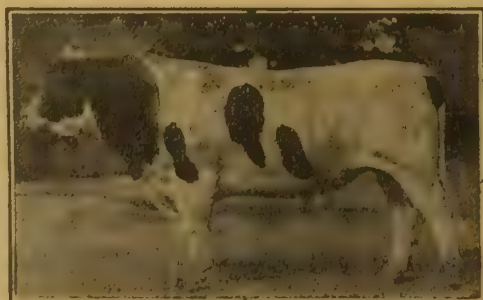
## Tulare Holstein Farm

W. J. Higdon, Owner

TULARE, CAL.

H. L. Redd, Herdsman

## Prince Alcartra Korndyke



other cow of any age or breed. And today at past nine years of age she is making the greatest record for milk and butter of her whole career. We have only a few sons of Prince Alcartra on hand. We know if you could see them and find how moderately we price them that you would want one to head your herd. Come and see us, or write your wants.

The J. S. Gibson Co.

Williams

California

Woodland. In 365 days she made 23,043.7 pounds milk and 1214.95 pounds butter, giving her the second highest yearly butter record in the Morris herd. She is by King Mead of Riverside and is out of Aralia De Kol. She is also dam of Aralia De Kol Pontiac Mead, who holds the California senior two year old yearly butter record with a production of 934.25 pounds and who recently made over 34 pounds butter in seven days as a senior three year old.

Zaza Tuebie Prophetess, a junior four year old in the A. W. Morris & Sons herd, recently made 26.25 pounds butter in seven days, milking over 90 pounds her best day.

Miss Filled Korndyke Walker, daughter of Prince Gelsche Walker and a 29.67 pound daughter of Korndyke Queen De Kol's prince, recently freshened as a junior two year old, dropping a fine heifer calf by King Morco Alcartra, son of Tilly Alcartra. Placed on official test she made 19.23 pounds butter in seven days, milking over 60 pounds in one day. She will be bred to W. J. Higdon's \$6500 bull King Korndyke Pontiac 20th. She is owned by E. D. Barry Jr., Daggett, who purchased her in the Guaranty Sale last December.

Lively interest is reported in the North San Joaquin Breeders First Consignment Sale to be held at Modesto on May 9, when 50 head of registered Holsteins will be sold under the sales management of California Breeders Sales and Pedigree Company, Sacramento. There are many fresh cows and heifers, as well as heavy springers in the sale, and these are proving attractive to the large number of owners of grade herds who are planning to buy a few purebreds this spring.

The Conejo Ranch, Harold H. Braly, manager, announces a splendid demand for pure bred hogs during the past two or three weeks. One of the largest sales of Conejo stock reported during the past ten days was to J. W. Jamieson of Los Angeles who purchased 50 Hampshires, five Duroc-Jersey sows and a boar, 25 Hampshire gilts for an average price of \$60 each. Other sales of Conejo stock are reported to the following: Ralph Daily of Camarillo, one Hampshire sow and a boar for \$300; C. J. Gilbert of Lancaster, five Hampshire sows for \$625; Joseph Russell, Triunfo, one Hampshire sow for \$100; Frank Crowley, Newbury Park, one Hampshire sow for \$125 and Charles E. Shattuck of Los Angeles four Hampshire sows for \$625.

### RED CROSS SAMMY

Continued from Page 539

above a ton was purchased by Julius Hauser, of the Hauser Packing Company of Los Angeles. It was brought to Los Angeles and exhibited with some of the other fine specimens at Red Cross headquarters, and Mr. Hauser, who has already lost one son in the war and has others ready for service if need be, gave to the Red Cross the champion of the bunch. The steer was sold to Carl Leonardt by the Red Cross auctioneers for a neat \$1600. Reserving for himself one choice cut from the steer Mr. Leonardt turned it back to the Red Cross and it was again put on the auction block and sold to Youngs Market Company for \$1400. By this time the steer had acquired the name of Red Cross Sammy, and the original selling price, together with the Los Angeles auction sales, aggregated \$4390, all net to the Red Cross. In

addition to this steer the Hausers donated six champion Shropshire lambs. One of these lambs was sold for \$225, and another brought \$200. Another feature of the sale was a Poland-China sow which sold three times, the lowest price being \$100 and the aggregate of the sales being \$335.

## Large Milk Yield

High % Butterfat  
GOOD TYPE

Can all be bred into your herd by a son of

Dutchland Sir Pieterje Creamelle

our herd sire, whose sire is by Pieterje Hengerveld's Count De Kol and out of the great transmitting cow Changeling. His dam is a daughter of the former world's record cow Creamelle Vale, and is by a grandson of De Kol 2nd, the foundation cow of the De Kol family. He has 14 A. R. O. daughters, records all made in our herd, with records up to over 30 pounds butter in seven days at three years. We especially appreciate the orders of dairymen who want good young bulls at modest prices. Write for prices and descriptions.

F. STENZEL

San Lorenzo

California

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco  
Carruthers Farms, Mayfield, Cal.

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

### Whittier State School

WHITTIER, CALIFORNIA

## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy  
Perkins, Cal.

## SELDOM SEE

a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

**ABSORBINE**  
TRADE MARK REG. U. S. PAT. OFF.

will clean it off without laying up the horse. No blister, no hair gone. Concentrated — only a few drops required at an application. \$2.50 per bottle delivered. Describe your case for special instruction and Book 8 R Free.

W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

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### Rhoades & Rhoades

Expert Live Stock Auctioneers

Pure Bred Stock Sales a Specialty

Sales conducted in all parts of California and adjoining States. Twenty-five Years' Experience

BEN. A. RHOADES, Auctioneer

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## ORD L. LEACHMAN

AUCTIONEER

Live Stock Broker

Pure Bred Sales a Specialty

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Orland, California





## For Sale Now—

Twenty-five excellent quality Fall Duroc-Jersey Boars ready for service in the summer—A few choice Hampshire Gilts — exceptional stock.

### 43 Ribbons

were won by our exhibit at the California State Fair, 1917—mostly Champions and Firsts. A Champion heads each herd.

## CONEJO RANCH—

Address Newbury Park, Ventura County, Cal.

Ranch located on Ventura State Highway, 40 miles northwest of Los Angeles.

Los Angeles Office—Janus Investment Co., fourth floor, Metropolitan Bldg., Fifth and Broadway.

## TAGUS HOLSTEINS

now comprise a carefully selected lot of well bred females headed by

### King Sadie Vale Rose

son of King Korndyke Sadie Vale and a 27.98 pound daughter of a 32.41 pound cow. His three nearest dams average 33.82 pounds butter in seven days.

We are especially pleased with his first calves now coming on, and from now on we can furnish a limited number of his young sons out of well bred cows with good records.

Pacific States Corp.

Tulare, Cal.

H. C. MERRITT, Jr., Manager

### HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

## SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals.

Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Mgr.

Sacramento - Cal.

### Prize Winning Berkshires

Two High Class Jr. Boars, choice \$85.00. Six Fall Boars, choice \$50.00. Sired by Ames Rival.

F. P. Hall Perris, Cal.

### SUCCESSFUL RED CROSS SALE

One of the principal features at the University Farm Picnic last Saturday was the sale of pure bred live stock, proceeds from which were given to the Red Cross. As to the sale Prof. Woll writes:

Your readers will be interested in the enclosed statement of the results of the auction sale for the benefit of the Red Cross, held at the University Farm Picnic, April 20. The sale, which netted slightly over \$1500, was an offshoot of the state dairy cow competition, just completed. Most of the animals and the dairy apparatus sold were offered as prizes in the competition, that were not awarded from lack of qualified competitors, and the donors allowed us to use the prizes in the manner and for the purpose stated.

Following is list of sales:

White Knight, Shorthorn bull, donated by T. S. Glide, Davis, sold to Dr. Elbury, Woodland, \$325.

Jersey calf, La V. Adelaide's King, donated by N. H. Locke Company, Lockeford, sold to Shafter Estate, Inverness, \$155.

Jersey calf, donated by C. G. McFarland, Tulare, sold to Shafter Estate, Inverness, \$70.

Ayrshire calf, donated by E. B. McFarland, San Mateo, sold to George McConnell, Elk Grove, for \$100; Dean Thos. F. Hunt, Berkeley, \$100; George McConnell, Elk Grove, \$50; W. H. Wright, Davis, \$50; James Scarlet, Yolo, \$50; W. O. Russell, Davis, \$50; George Dally, Elmira, \$30; total, \$430.

Holstein calf, donated by A. W. Morris & Sons Corporation, Woodland, sold to S. Lawson, Woodland, \$490.

Mule-foot gilt, donated by Edwards & Ward, Danville, sold to Dally Bros., Elmira, \$37.50.

M-2 Baltic Hand Separator, donated by Empire Separator Company, Bloomfield, New Jersey, sold to A. T. Blizzard, Denair, \$30. The sale totalled \$1537.50.

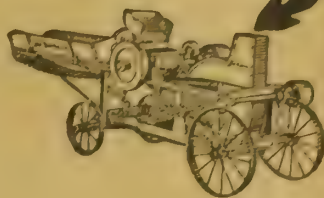
### A WONDER BULL BORN IN MORRIS HERD

Just 21 days after she completed her remarkable year's record of 1111 pounds butter as a junior three year old, Miss Valley Mead De Kol Walker has dropped a beautiful bull calf by Sir Aaggie De Kol Acme, in the A. W. Morris & Sons herd of registered Holsteins at Woodland. The great youngster is nearly white in color, and seems in every way just what it was hoped he would be. It is doubtful if a Holstein bull was ever born that has more to commend him than this young fellow, for pages might be deservedly written about the individual ancestors for many generations back. But as a brief summary the average records behind him are of interest. His three nearest dams, one of them a junior three year old, another a senior four year old, average 625.36 pounds milk and 32.91 pounds butter in seven days. His seven nearest dams average 626.44 pounds milk and 30.41 pounds butter in seven days. His three nearest dams, two under mature age, average 22308.2 pounds milk and 1151.37 pounds butter in one year, all of them testing over four per cent for the year with an average of 4.17 per cent. Five of his seven nearest dams, all that were tested for one year, including two present world's cows and two former world's record cows, average 22009.33 pounds milk and 1081.05 pounds butter in one year, average test 3.93 per cent, and these records include two heifer records and the 11 year old record of Aralia De Kol. As far as we know there is no other bull in the world that can anywhere near approach this combination of high production with such a desirable percentage of fat in the yearly records of his nearest dams, and the influence of this young bull upon the Holstein breed should be remarkable as he represents a blending of the blood of many outstanding animals with common characteristics. This bull is the meeting point of most of the time, effort, and study that the Morris organization has put into the advancement of the Holstein breed during their breeding career, and through him they expect to carry their great work still farther.

## Here Is The Alfalfa Cutter You Have Been Looking For

The Light Running

## ACME Feed Cutter and Silo Filler



A combined silo filler, feed cutter and alfalfa meal machine. A useful machine for all seasons of the year. Its center hung blower and three-bearing main shaft reduce vibration to the minimum. The frame is all steel. Can't warp, nor the bearings get out of alignment as is the case with the old style wood frame cutters. Cuts anything—will fill the highest silo. Catalog and sample of alfalfa meal mailed on request.



### Good Juicy Milk-Producing Silos

Well cut and well kept silage keeps up the milk flow when green pasturage is not available. It reduces feed costs 15 per cent to 25 per cent and keeps cows in fine condition.

### Ideal Green Feed Silos

LEAK PROOF

PERMANENT

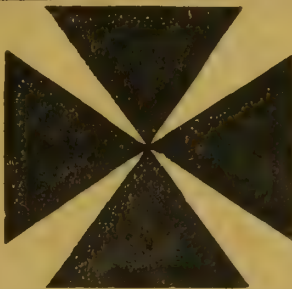
A perfect design. The result of over 20 years experience in designing and erecting silos.

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## DeLaval Dairy Supply Co.

EVERYTHING FOR THE DAIRY

61 Beale St. San Francisco, Cal.



### Santa Anita Rancho

Anoakia Breeding Farm

### Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

### Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce that amount of butter in one year.

We have a few of his sons, out of good record dams, for sale.

Inquiries or orders by mail will receive careful and prompt attention.

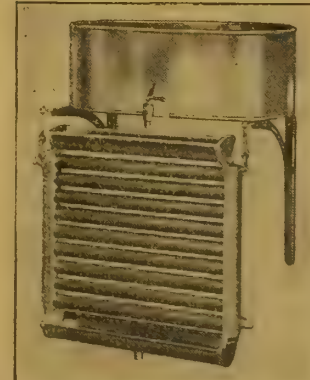
Santa Anita Rancho

Anita M. Baldwin, Owner

Santa Anita, Cal.

W. H. Taylor Supt.

## Don't Wait for Hot Weather



You surely remember how badly a first class cooler was needed last year.

### Weber's Tubular Sanitary Milk Cooler

is built for service and efficiency; it is constructed of seamless copper tubing, tinned bronze headers and heavy tinned troughs. Five sizes kept in stock.

EVERYTHING IN CREAMERY MACHINERY AND DAIRY SUPPLIES.

O. J. Weber Co.

759 So. Los Angeles St., Los Angeles

### Prize - Winning Hampshire Swine

Choice Breeding Stock, Both Sexes

### 100 Spring Pigs 100

Sired by Director, the largest Hampshire boar in the West, and by Zodiac Wonder, the first prize under six months pig at the State Fair, 1917.

Pairs and trios not related, our specialty.

L. A. Denker

Saugus, Cal.



## North San Joaquin Breeders First Consignment Sale

**50 REGISTERED HOLSTEINS 50**  
**Modesto, California, Thursday, May 9, 1918**

### Contributors:

J. W. Benoit, Modesto.  
J. A. Pelanda, Modesto.

H. E. Cornwell, Modesto.  
R. L. Holmes, Modesto.

Gotshall & Magruder, Ripon.

We believe that those who intend to purchase registered Holsteins will be pleased with the offerings in this sale, which is comparatively small in numbers but high in average quality.

In this sale J. W. Benoit will sell his entire milking herd with the exception of three head, including his show ring and butterfat contest winners and his good A. R. O. cows. His herd sire, El Prado Wayne Colantha, out of a 30 pound dam and sired by Colantha Sir Pontiac Aggie, was first prize aged bull at California State Fair, 1917. This bull is catalogued in this sale as a reference sire, but we are authorized by Mr. Benoit to state that he will be led into the sale ring on sale day with a price of \$1500 on him and after one bid above that price he will be sold to the highest bidder without further reserve. This is a splendid sire and the price Mr. Benoit puts on him is unquestionably well within his value, and he would be priced only because Mr. Benoit's herd will be composed almost entirely of daughters of this sire after the sale.

Gotshall & Magruder sell an unusually good lot of females, bred to very high class bulls, and in this consignment buyers will find both cows and heifers to their liking.

R. L. Holmes sells two splendid young cows that would make an attractive consignment in any sale.

H. E. Cornwell sells one of the very good young females in his herd, not because he wants to sell her, but as a compromise after our urging him to consign to this sale.

J. A. Pelanda sells some bred heifers that are choice and promising, and are just about ready to make money as dairy producers, aside from their value as breeding animals.

**THERE ARE 20 COWS AND HEIFERS WITH OFFICIAL RECORDS UP TO OVER 24 POUNDS BUTTER IN SEVEN DAYS IN THIS SALE** including daughters and granddaughters of great producers, from some of the most famous families in California.

**THERE ARE SIX CHOICE YOUNG BULLS IN THIS SALE**, good individuals, and of choice breeding, the kind that ought to be used as herd sires.

The sale will be governed by the regular sales rules of this company, every animal pledged to absolute sale without reserve, limit, or by-bid, every animal guaranteed to be a breeder, tuberculin tested and sold subject to tuberculin retest by the purchaser.

**SALE WILL BE HELD AT MILLER'S STABLE, 11TH & G Sts., Modesto, Thursday, May 9, 1918, beginning promptly at 10:00 A. M.**

Catalog free on request.

### Management

## California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President

C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneers—Col. Ben A. Rhoades, Col. Cy N. Clark.

## Thirteen Cows in Our Herd

have yearly records above 1000 pounds butter in one year, and the entire number average

MILK IN ONE YEAR.....24,454.9 POUNDS.

BUTTER IN ONE YEAR..... 1,107.75 POUNDS.

## Twelve Cows in Our Herd

have seven day records above 30 pounds butter, seven of the number above 33 pounds, ranging from 30.05 pounds to 40.78 pounds. The entire number average

MILK IN SEVEN DAYS.....597.83 POUNDS.

BUTTER IN SEVEN DAYS..... 33.61 POUNDS.

A considerable number of these records were made by heifers, and most of them within the families whose blood comprises the strong fabric of our breeding herd.

We are kept sold down close on high class bulls out of our great cows, and have accepted options on unborn calves if they are bulls.

If you have in mind the purchase of a really high class sire, it would be well to get in touch with us and if we do not have on hand what you want look over our mating list and see what we have in prospect.

We can furnish you with a bull of unexcelled yearly record backing, offering you a choice of several families, every family fully proven.

Visit or write for information and prices.

We are in position to furnish at all times choice bulls of yearly record breeding at prices that dairymen can afford to pay.

**A. W. Morris & Sons Corporation**  
**Woodland : : : California**

## Holstein Progress at Hollywood Farm

There is unquestionably no better equipped Holstein breeding establishment on the Pacific Coast than Hollywood Farm, owned by F. S. Stimson, Hollywood, Washington, and the big herd is being developed along lines that promise to surpass its already great accomplishments.

When the herd was founded some years ago, the well selected breeding females were headed by King Palmyra Fayne, grandson of King Segis, his sire being King Fayne Segis, sire of the only 50 pound cow, and his dam being Bloomingdale Hengerveld Palmyra, a 30.40 pound daughter of Hengerveld De Kol. This sire unfortunately died young, but today has 31 A. R. O. daughters with records up to over 32 pounds for a junior four year old, 27 of them being still members of the breeding herd at Hollywood.

The next sire to be used was Hollywood Lilith Palmyra, son of King Palmyra Fayne, and out of Lilith, Queen Pauline, 32.47 pounds butter in seven days, 26,135.9 pounds milk and 1077.21 pounds butter in one year. He too died young, but there are about 50 of his daughters at Hollywood Farm at present, and they are most promising. He already has nine A. R. O. daughters, the first one to freshen as a junior three year old, Hollywood Lilith Mercena, making official records recently of 531.6 pounds milk and 33.44 pounds butter at three years four months.

About this time also a young sire, Sir Bessie Homestead Sunnyside, was used in a limited way in the herd. This young bull was by a son of the famous 34 pound cow Jessie Fobes Bessie Homestead, and out of a 30.51 pound daughter of Fobes Tritomia Mutual De Kol.

Thus up to this point we find that the increase in the herd has been largely from the services of a grandson and a great grandson of the great King Segis.

With a definite idea of what he wanted to establish in the way of blood lines at Hollywood Farm, Mr. Stimson set about the selection of his next herd sire, and seems to have been extremely fortunate in being able to purchase at a long price the great proven sire Judge Segis, son of King Segis. Although formerly in a select herd of small numbers, where he was given most limited service, he has 28 A. R. O. daughters to his credit, the first one to be tested at past five years being Vanderkamp Segis De Kol, who made an official record of 37.57 pounds butter in seven days. He is also sire of the 28.55 pound two year old Vanderkamp Segis Eva.

Judge Segis combines with his rare breeding and proven worth as a sire, a commanding individuality. He is wonderfully long and deep of body, strikingly masculine without a suggestion of coarseness, weighing in breeding condition over 2600 pounds, and displaying unmistakable spirit and vigor.

It is Mr. Stimson's avowed purpose to use Judge Segis on right close to 200 females per year, giving him an opportunity such as has never been afforded to any other sire in service in the West and to few sires in the whole country. Thus through his service at Hollywood, a large number of females sired by a grandson and by a great grandson of King Segis will be bred to one of the best sons of King Segis, bringing about an intensification of this blood that can hardly fail to produce some outstanding Holsteins.

The herd at Hollywood Farm now contains around 275 head, including 12 cows with records from 30 to 42 pounds butter in seven days, and a considerable number of large yearly record cows.

Of course the queen of the establishment is Glen Alex Queen De Kol, 603.8 pounds milk and 42.35 pounds butter in seven days as a two year old, the world's record heifer for which Mr. Stimson paid \$18,000 in the Worcester sale.

Then there is the 38.14 pound cow Pietertje Floa Artis, who was for a long time the highest record cow developed on the Pacific Coast. And just lately Pietertje Korndyke Abbe-kerk, a granddaughter of Pontiac Korndyke, made official records of 712.9 pounds milk and 35.37 pounds butter in seven days. This cow is an impressive individual, one of the biggest, roomiest cows the writer remembers having seen.

The 33.44 pound junior three year old daughter of Hollywood Lilith Palmyra, Hollywood Lilith Mercena, has already been mentioned, and in connection with her it is interesting to note that her dam, Hollywood Mercena, recently made official records of 553.7 pounds milk and 28.19 pounds butter in seven days.

A most promising heifer noted during my somewhat hasty observation of the herd is Hollywood Lilith Bonheur, daughter of Hollywood Lilith Palmyra, who recently completed official records of 573.4 pounds milk and 24.32 pounds butter in seven days, 2350.6 pounds milk and 101.67 pounds butter in 30 days at the age of two years three months.

An unusually interesting pair was noted in the heifer S. V. H. Flora Vale and her heifer calf. S. V. H. Flora Vale is by Sir Veeman Hengerveld and out of K. K. S. V. Cora, 32 pound three year old daughter of King Korndyke Sadie Vale. Freshening at two years two months, she had to her credit when I saw her 20.10 pounds butter in seven days. She is herself intensely bred, but her heifer calf, sired by King Korndyke Sadie Vale, probably carries as many close up crosses to the great Sadie Vale Concordia as any calf in existence.

It is needless to say that the sanitary conditions about this great breeding plant are of the highest character. The herd is under federal supervision in testing for tuberculosis, the federal method being the plan in which Mr. Stimson is a firm believer.

### FRESNO HAS LIVESTOCK ADVISER

R. N. Davis, a man of training and experience in animal husbandry and dairying, is now associated with the farm adviser's office in following up work carried on by Frank T. Murphy, who resigned as assistant farm adviser to enter the veterinary corps of the army. Mr. Davis is beginning his work in the county in cooperation with the directors of the cow testing department of the Riverdale Center.

### WHAT IS BETTER THAN A SILO? —TWO SILOS

Riverdale Center members are keen for the silo as well as for all other modern ideas in dairying. Only one man complains about the silo, and he says, "My kick is that I didn't build two last fall instead of one."—Fresno County Farm Bureau Monthly.

### STOCK AUCTION SALE FOR FRESNO

Fresno County farmers have decided to inaugurate live stock auction sales. The county farm bureau directors have appointed a committee to arrange details of the first sale. This committee is composed of Directors Poytress, Avenell and Helsing.



## The Honey Bee and Its Care

### GOOD HONEY YIELD IN PROSPECT

The honey outlook for California is of the best. With plenty of rainfall all over the state there will be an abundance of wild pasture. Several apiaries were destroyed by last summer's heat and fires, especially in the Ventura and Santa Barbara sections, so that reduction in number of bees will affect the output to some extent.

### BEES IN THE ORANGE GROVES

"Make honey while the orange blossoms bloom" is the slogan of the busy bees these April days. Thousands of the little sugar makers are humming in the groves and packing away the honey that will take the place of the sugar we must send across the ocean. Many of the apiarists follow the orange bloom from early to later blossoming districts, thus securing a good supply of orange blossom honey.

### ITEMS IN SEASON

Writing in the Western Honey Bee, L. L. Andrews gives some good advice:

"Manipulation is the watchword in the apiary this month. See that all colonies have good queens and stores enough to carry them through a week or two of cold or unfavorable weather.

"Mark all hives—strong, medium, or weak. When the strong ones are ready for a super, put it on, and as soon as the queen has sealed brood above, it will be safe to take from the strong and help the medium. In this way you always have a good per cent of colonies ready for the honey flow and the poorer ones coming on all the time.

"As soon as the extracting starts, very little danger from swarming need be anticipated. Frames of well-sealed brood, with a good "ridge" of honey above, can be put through the extractor and the brood given to strengthen the weak colonies.

"To run without excluders until after the swarming season, then look carefully through the lower story to

make sure everything is o. k.—a good queen, all good brood combs and some honey—after which put on excluders, has proven very satisfactory with us.

"Who can say what the season will prove to be as a honey producer? Never saw sage so late in starting, but must say it looks thrifty, and many old-timers think there is plenty of time for a crop. Let us hope so. The first requisite is to have the dish right side up when the time comes. Have seen a good honey crop with no more rain than has fallen on our ranges this season."

### THE FARM APIARY

The shortage of sugar has awakened us to a realization of the value of a few hives of bees on the farm. The cost of starting an apiary is not great. One colony of bees will cost about \$5.00, and a person starting out with five colonies should be able with an average amount of care to increase this number to ten colonies within a year. In the orchard one hive of bees is sufficient to pollinize an acre of trees.

An interesting experiment carried on at the University Farm apiary during the last winter showed the value of fall packing the hives even in the mild climate of the Pacific states. Five colonies were packed with straw and five were left covered on their stands. During the winter two of the unprotected colonies were lost, while all of the packed colonies survived the winter period.

The California Honey Producers' Cooperative Exchange has been holding meetings throughout the latter half of the month in San Diego and Imperial Counties. Throughout the state over 20,000 colonies have already been signed up.

At the last meeting, April 6, of the Los Angeles County Beekeepers' Club plans were made to buy cooperatively cans and cases for members. This will mean a saving of nearly 20 per cent.

## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Bats

We have a large tank house on our ranch and we are continually bothered with bats. We have a screening around the top, on the inside of the house, but this method seems ineffective. What would you advise to be done in order to get rid of the pests?—Subscriber, Bakersfield.

We are unable to give our subscriber any help in this matter. Have any of our subscribers experience in control of bats?

### Spray for Morning Glory

We understand that the college of agriculture at Berkeley is advocating the use of poison spray to kill morning glories. Please tell me what it is.—Subscriber, Camarillo.

Circular number 168, issued by the College of Agriculture, Berkeley, reviews successful experiments in control of morning glories by use of an arsenic spray. It particularly emphasizes the fact that it has been found practical only in Coast sections within the fog belt. This of course includes Camarillo. Also, we may add Farmers Bulletin 388, "Eradication of

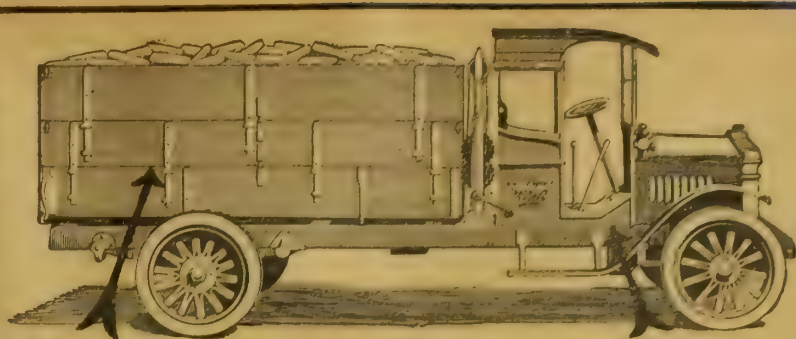
Bindweed" may be secured by writing Division of Publications, Washington, D. C. The Hawaiian Agricultural Experiment Station also reports excellent results from the use of carbon bisulphide. This however, is very expensive. The same station has also issued a bulletin on "Killing Weeds with Arsenite of Soda." The bulletins describing these two methods of eradication we think may be secured free upon request to Hawaiian Agricultural Experiment Station, Honolulu.

### Barrenness in Rabbits

My does refuse to breed. What is the reason? They are not overfat, are fed a little green stuff and grains as needed.—Subscriber, Los Angeles.

Not knowing all conditions of feeding and care or condition of stock, we offer these rules and suggestions and ask that you govern yourself accordingly: Does bred over six times per year or allowed to be with young over ten to 12 weeks, often get this way. Take does to buck's hutch. Never leave her there long. Never permit buck to punish doe. Timid does become frightened with some bucks; again does have their favorites, so try different bucks, often putting her in

Continued on Page 547



Body Built for Country Loads

Truck Built for Country Roads

## Patriot Farm Truck

The farmers of America now have what they have been waiting for—

A truck built for farm conditions and farm work.

No intelligent farmer questions the superiority of truck service over horse service for general transportation. The only question has been whether the trucks built for service over the paved streets of cities, with bodies designed for city haulage, were the proper trucks for farm use, and most farmers have felt they were not.

The Patriot Farm Truck affords the farmer economy, convenience and certainty of transportation of his crops and live stock.

The Patriot will double or treble your load capacity and cut the time of delivery in two. It makes you master of weather and roads, and cuts the distance to your market town to one-fourth.

The Patriot will increase the value of your farm \$10 an acre by bringing larger and better markets within your reach. It will pay for itself within one year. Write for full information and prices.

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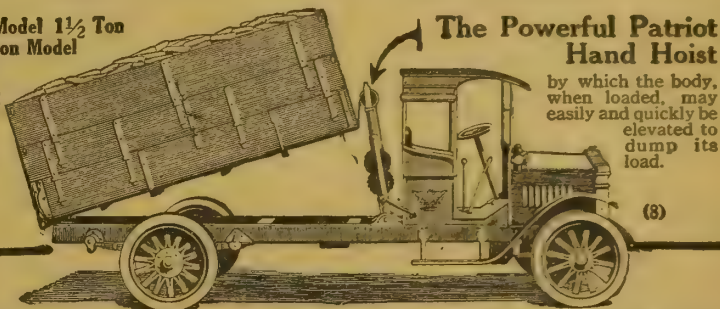
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Lincoln Model 1½ Ton  
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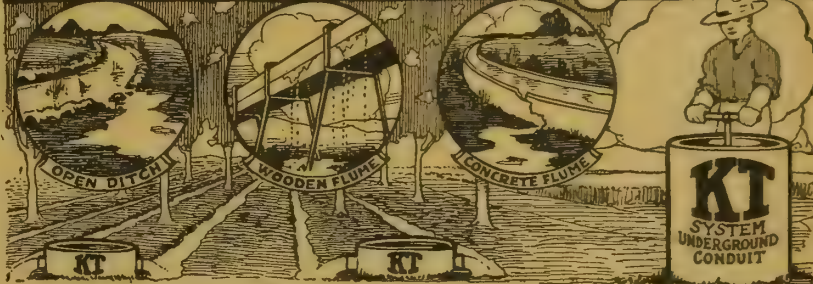


The Powerful Patriot Hand Hoist

by which the body, when loaded, may easily and quickly be elevated to dump its load.

(8)

## The Evolution of Irrigation



Just as the Open Irrigation Ditch was superseded first by wooden, and then by concrete flumes, so were the latter in turn forced to give way to the "K-T SYSTEM" of underground conduits, equipped with gates and valves. This provides for a perfect distribution of the water at the exact spot required, and at just the time it is needed. It also eliminates the constant losses resulting from evaporation, seepage, and ditch choked with weeds—wasting land, water, time and money.

Write today for our Special Booklet, which gives complete detailed information.

**KELLAR-THOMASON CO.** 1226 East 28th Street  
Los Angeles, Cal.

"Originators of the Valve System of Irrigation."

## This Saw Cuts 25 Cords of Wood in One Day

It is absolutely guaranteed—hundreds in daily use.

Write for our booklet "How Dan Ross Cuts 40 Cords a Day".

Delivered anywhere in the U. S. A. only

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**Wade's Gasoline Wood Saw**  
4 H. P. Engine (Portable)

This wonderful invention does TEN TIMES the work of TWO MEN in the woods. With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a 40 inch log in five minutes. Write us today.

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SINCE 1865

339 Hawthorne Av., Portland, Ore.  
910 N. Howard St., Spokane, Wn.

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.



## Classified Liners

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### TREES

**For Sale to Nurserymen or Large Planters.**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

### AVOCADOS

The Spinks is easily the best variety that has fruited in California. It combines the good points of all the others with none of their defects. A rugged, prolific tree and a superb fruit. Field grown trees of this and other well known varieties, including the Rey, Linda, Sharpless, Puente, I. X. L., Caribou and others, \$3.00 to \$5.00 each. Liberal discount in quantities. W. A. Spinks, Duarte, California.

**For Sale.**—Extra fine Valencia trees, % to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for bailing, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencias on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, California.

**For Sale: Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencias and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110. Los Angeles.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator.** The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Valencia Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**For Sale.**—About 20,000 uncultured Navel, Valencias, and lemons at surprisingly low prices. All are highest character of pedigreed stock. Address W. C. Goodno, 397 So. El Molino Ave., Pasadena, California.

**For Sale.**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574. Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**For Sale.**—Valencias, Washington Navel and lemon trees, 2 years old, size ½ inch to 1 inch up. Thirty thousand trees altogether. M. Matayoshi, P. O. Box 4, Baldwin Park, Cal.

**Valencia, Washington Navel, Eureka Lemons and seedless Grapefruit, 2 years old.** Healthy stocks. K. Niwa, P. O. Box 306, Glendora, California.

**Olive Trees**—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, California.

### SPECIAL

**SHARPLESS AVOCADO TREES** Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**For Sale.**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**Florida Sour Orange seedlings,** one year old. Write for details. Katsurgi, 23rd St., Upland, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, Cal.

**For Sale.**—1000 first-class Eureka lemon trees, ¾ to 1½ inches. Free from scale. 25c apiece. Peter Arth, Redlands, California.

**For Sale.**—Orange seed and seedlings, budded citrus and avocado trees. Paul B. Magee, Colorado and Huntington Drive, Pasadena, Cal.

**For Sale.**—Citrus trees and Seed stock at your own price. Write or come. B. C. Dodson, Glendora, California.

**Budding.**—Citrus, Avocado. Paul B. Magee, Colorado and Huntington Drive, Pasadena.

**For Sale.**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, Cal.

**Citrus Nurseries,** Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

**Orange Seeded Stock** shipped to please YOU. Percy Zug, Glendora, California.

### GOVERNMENT LAND

**New Openings.**—April 29—300,000 acres moist agricultural Oregon railroad land adjoining California. Get county maps, Jackson, Josephine, Douglas and Curry, \$2.50 each, and get land held fifty years by railroad, adjoining improved land. Worth \$16,000 per 160. California County sectional maps showing Government land \$2.50 any county. Joseph Clark, Sacramento.

### SEEDS AND PLANTS

**\$2.00 PER 1000**  
**750,000 TOMATO PLANTS, AT ABOVE price.** Early and late Stone and Beefsteak. Sweet potato plants, \$3.00 per 1000; 60c per 100. Pepper and Chili \$5.50 per 1000. All plants sent out by me are strong large plants, government inspected and therefore free from insect pests and plant diseases. Plants by parcel post or express, 25c per 1000 extra. R. L. CHACON, 2702 So. Alameda St., Mail address Box 37, Alameda St., Los Angeles.

**Alfalfa Seed.**—Others come and go. We have been in the alfalfa seed business, growing and selling, for forty years. We handle vast quantities of it. We make it a specialty. Our customers dot the entire globe, practically. If you want reliable stock, seed that can be depended upon, either alfalfa or other seeds, write or wire us for quotations, samples and advice. V. A. Peterson Alfalfa Seed Co., Arbuckle, Cal.

**For Sale.**—Recleaned Alfalfa Seed showing high germination test and free of dodder or noxious weed seeds. Have more seed than I can use. Let's deal direct. Price 19c per pound. Orders filled promptly. Send your order today. James Henry, Box 986, Modesto, California.

**For Sale.**—White Egyptian corn, Feterita, Red Milo Maize, Dwarf White Milo Maize, Common California Alfalfa, Common Choice Recleaned Arizona Alfalfa, S. Peruvian Alfalfa, Amber Cane, Sudan, Artichokes. Wholesale prices in large quantities. Hay in carloads. Box 501, Fowler, California.

**Plant a Few Acres of Dwarf Milo Maize for seed.** Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sudan Grass Seed.**—We offer a limited quantity of fancy recleaned Sudan at an attractive price. Write today for samples and prices. Orders filled in the order they are received. Desk B, Bomberger Seed Co., Modesto, California.

**Tomato Plants.**—Hardy plants grown only from best selected stock of seeds known to the "Canning Trade." Several thousands of both Early and mid-season varieties. Price reasonable. Tinell, Yucaipa, California.

**Gladiolus Bulbs** that will bloom. Mixture of new named varieties all colors. Dozen 40 cents. Beautiful Pendleton, dozen 60 cents. Post free. Cash with order. W. H. Kingsley, Hayward, California.

**Sudan Grass Seed** clean and mature and free of Johnson grass 30c pound in small lots, post prepaid; 25c pound in 100 pound lots F. O. B. Perris. E. C. Talbot, R. F. D. Box 5, Perris, California.

**Corn. Plant It.**—Squaw Hickory King, King Phillip, 1 pound 10c, \$8.00 per hundred pounds f. o. b. Los Angeles. Western Seed Co., 116 E. 7th St., Los Angeles.

**Seed Potatoes.**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Pumpkins** make good stock food. Yellow crook neck Cushaw 85c per pound, post paid. Western Seed Co., 116 E. 7th St., Los Angeles.

**For Sale.**—Yellow sweet potato plants, fine and large ones. Send for price. C. J. Hart, R. D. 1, Box 35, Garden Grove, California.

**Sweet Potato Plants for Sale,** 500,000 Yellow Nansemon, April and May delivery, \$2.50 per 1000. F. O. Popenoe, Altadena, California.

**For Sale.**—Pink beans, Choice seed. Hand cleaned. Ten cents per pound in lots of fifty pounds or over. A. Osburn, Redlands, Cal.

**For Sale.**—Limited amount fancy head, selected hand threshed feterita, also kafir corn seed, 10c pound, \$8.00-100. F. O. B. El Centro. Smith Jackson, El Centro, California.

**Strawberry Plants.**—Everbearing, strong, northern grown. Americus, \$1.50 per 100; \$3.00 per 250. F. I. Moffet, Ellensburg, Washington.

**Soudan Grass.**—For Sale. Large or small lots. Prices right. Immediate delivery. Write for quotations. A. W. Greathead, Box 270 R. D., San Jose, California.

**For Sale.**—Amber Cane Sorghum seed in lots of 100 pounds and over. For prices write P. O. Box 507, Atwater, California.

**R\*O\*S\*E\*S** 50 cents per dozen. Write for Catalogue C, and special prices. Kavan Nurseries, San Bernardino, Cal.

**For Sale.**—Genuine dwarf milo seed. Any amount to two tons, 5 cents pound. B. A. Overland, Route 1 Box 28, Visalia.

### LIVE STOCK

**Sheep for Sale.**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

**For Sale or Exchange** for land near coast, large black registered Jacks and Jennets, good as can be found in California. Address A. L. Allen, Perris, California.

**Registered Shires.**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

### LUMBER

**Lumber.**—Sash-Doors-Plumbing - Supplies—Building materials of all kinds. New and second hand \*A.R.W. shingles 60c per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

### FARM LANDS FOR SALE

**Buy Land Where They Raise the Prize Crops,** in Snohomish County. 40 acre farms, \$25 per acre. Ten yearly payments, 6 per cent interest. Visit our offices and see the great exhibit of PRIZE WINNING Vegetables, Fruits, Grains, Alfalfa and other Grasses raised on adjoining farms. They prove our claims that this is the best land in Western Washington. Paved roads. Four passenger trains a day. Graded Schools, Cannery, Creamery, Cheese Factory. Plenty of work for the laboring man in the mills and camps, where 75 settlers are all boosters. DON'T LOSE A DAY in asking for our illustrated literature. BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

**For Sale or Exchange.**—60 acres rich, alluvial silt soil. Level. Irrigated, ready for crop. Real alfalfa land. Domestic water on place. Plenty of irrigation water. 1¼ miles from town, churches, grammar and accredited high school. Half cash, half trade, anywhere. Make your proposition now. Chas. McNeely, Alpaugh, California.

**For Sale.**—A Big Producing 320 Acre vineyard, 200 acres muscats, 40 acres Thompsons, 35 acres Malagas, 10 acres Emperors, also figs and olives. Buildings and equipment. Income about \$30,000. Terms \$30,000 cash, balance easy. 100 Acres rich level land, no alkali or hard pan. Water right and pumping plant, buildings, fenced and cross fenced. Near town and high school. Raw land selling at \$150 per acre. Price for quick sale \$155 per acre. R. Valladigham, 2514 Tulare St., Fresno, California.

**For Sale.**—18 acres land in Jasmine citrus lands district, Kern County, S.W. cor. Sec. 12. Cheap for cash. F. S. CHAPMAN, Piru, California.

**For Sale or Exchange.**—4 acres in city of Santa Cruz, for Los Angeles or Orange County acreage. William Richard, Santa Cruz, Cal.

**For Sale.**—40 acres good land close to Exeter, California, \$100 per acre. J. E. Wright, Visalia, California.

### WANTED

**Wanted.**—Working Foreman for 300 acre Institution Farm in Coast. Single man of clean habits. Must be familiar with modern farm methods, and care of live stock. This is an opportunity for the right man. Position permanent and salary adjustable with ability. State qualifications in first letter and hurry. Address Box 627, Santa Barbara, California.

**Mixed Eggs or Thorobred Eggs Wanted.**—We want to buy eggs of any kind that will produce stock suitable for table use. Color or breed of chicks immaterial. We pay 10 cents per dozen above select market price and can use in large and small lots. What have you to offer? Give full details. F. Lehman, 320 South Spring St., Los Angeles, California.

**Wanted.**—Position with working interest as manager of large ranch. Have had wide experience in all branches. Part salary, balance in percentage of profits made. Lock Box 220, Oakland, California.

**Wanted Goose Eggs, Turkey eggs, Duck eggs,** and all kinds of hatching eggs or baby chicks, ducks, geese, etc., in large or small lots. Write us what you have to offer. Pioneer Hatchery, 320 S. Spring St., Los Angeles, California.

**Wanted.**—Married man for grain ranch. Knowledge of tractor is desirable. Must have farm experience. Wife must be neat housekeeper. Year round job. Give references. Box 234, Delano, California.

**Wanted.**—To Rent on shares or for wages a general farm by experienced farmers. Possession next October. Owens Bros., R. R. 3, Box 17, Randolph, Wisconsin.

**Wanted.**—A two horse stump puller. Give full particulars and price first letter. Address Box 135, Morgan Hill, California.

### RABBITS

**Go into Business for Yourself.**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**If You Want to Raise Rabbits,** you need "The Western Rabbit Book" a guide to success. Price 50 cents. Mrs. C. A. Richey, 616 North Benton Way, Los Angeles, California.

**For Sale.**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

### MISCELLANEOUS

**For Sale.**—Tractor plows. One 4-disc, one 5-disc, and one 6-disc; all practically new. They are good ones. Room 1120 Merchants National Bank Building, San Francisco.

**Tobacco Stems** for sale, 1 cent a pound in 100 pound lots or over. Max Roth, Cigar Co., 548 S. Los Angeles St., Los Angeles.

**To Reduce the high cost of living,** send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

### POULTRY

**For Sale.**—300,000 Single Comb White Leghorn chicks during April, May and June. Heaviest laying, Hoganized stock only. Broilers in ten weeks; pullets lay at five months. We guarantee safe arrival of all chicks to destination, you pay only for chicks received in good condition. Shipped safely anywhere West of the Rockies. Price \$10.00 per 100; \$95.00 per 1000. No money in advance; pay on delivery. Finest hatchery in the world. Established over twenty years. Must Hatch Incubator Co., 418 Seventh St., Petaluma, California.

**For Sale.**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 15. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

### POULTRY

**White Leghorn Baby Chicks.**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. Chicks ordered now for May delivery will be \$10.00 per 100. Lyon Hatchery, Gardena.

**Your Opportunity.**—Half price eggs sale. Big profit now raising our 200-290 egg Leghorns, Wyandottes, Anconas, Red Rocks, Minorcas, Orpingtons, Brahmas, ducks, geese, turkeys. Thousands chicks, eggs weekly, reasonable. Laying pullets, hens. Males half price. Many repeat orders. Hundreds customers making money. One cleared \$617 on 110 hens last year. James Beeson, Pasadena, California.

**Thorough Barred P. Rocks exclusively.** Hen record 190 eggs in 10 months. Trap-nested, pedigreed matings for 1918. Pen 1, \$2.50; two \$1.50 per 15 eggs. Baby chicks, March and April 25 cents, limited number. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California.

**Baby Chicks and Eggs.**—Hoganized English White Leghorns, Utility R. I. Reds and B. P. Rocks our specialty; also choice Anconas and Blue Andalusians. Send for folder. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, California.

**Baby Chicks** from my thoroughbred and carefully selected flock of S. C. White Leghorns. Orders booked no wfor spring delivery at \$12.00 per 100, \$110.00 per 1000. Only eggs from my own and fully matured hens used in my incubators. Correspondence solicited. J. R. Heinrich, Poultry Yards, Arroyo Grande, Cal.

**Model Poultry Farm.** White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

**Baby Chicks.**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

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## QUESTIONS AND ANSWERS

Continued from Page 545

hutch formerly occupied by a buck and feeding soaked peas once a day for three days, then skip three days, will be effective. Test does five days after mating. If does refuse they have probably bred. If after trying different bucks, no results, dispose of doe.—W. D. W.

## SUCCESS WITH TRACTOR

Continued from Page 526

mules. I doubled the capacity of the disk plow by adding another beam and disk to make a cut of 25 inches and doubled the single five foot disk harrow by getting half of an old ten foot disk harrow with good disks which I had cut in two, and with a plank head made at home we have a five foot double disk when we want it or a single disk when that is needed. I bought an extra section of spring tooth harrow, making three sections, or nine feet in width. I had used a three section spike tooth lever harrow 16 feet wide and did not increase that as it would be inconvenient to turn in an orchard. I also had a short pole put in the low wheeled wagon which we will use with the tractor to haul manure from the station a half mile away and use behind the auto to take the walnuts to the packing house. These repairs and betterments were made at a cost of \$73.50, without including some of Chester's work.

When we began work we found that distillate did not burn like gasoline and that we had to run the engine about 20 minutes on cold mornings and at noon before it would be hot enough to pull a load. Then too if a plow choked in the heavy growth of melilotus or in bunches of walnut leaves the engine was cool by the time the plow was ready and had to be heated again a few minutes. There was always more or less cleaning of spark plugs and valves, so I told Chester we would abandon the use of distillate and would use gasoline until we were sure we knew all about the tractor and the implements. Gasoline is costing some more but we have not had to clean a valve nor a spark plug, and the tractor is ready to begin work as soon as the engine is started, so more work is accomplished.

I did not expect the tractor to do impossible things nor to run without expense and told Chester I supposed he would wish the mules back several times before he learned all about the tractor. However after a term at the citrus experiment station tractor school he is getting on, and we are gradually finding out what we can do and what we had best not attempt.

The most of our troubles come from oversights, or from careless workmen in the factory, which I suppose is to be expected under present conditions, for example; last evening there was a small adjustment to be made in some oil pipes and when done Chester said, "There that is done. What will be next?" The next came this morning when an imperfectly fitted key in

the wheel on the steering shaft came loose and caused us to lose three and a half hours, taking apart and replacing, with a trip of two miles and back, together with the machinist's bill for 50 cents for fitting a new key—which should have cost nothing but carefulness at the factory. Our troubles are mostly of this kind and not great enough to ask the factory people to replace, but they are annoying and somewhat expensive because of delay.

We are using only the best of lubricating oils, such as I would use in a fine automobile. The first cost of this may be slightly more than the cheaper oils and greases but there is no economy in using cheap lubricants and following up with costly delays and heavy repair bills. I bought the best grease gun I could find and fitted it with one-eighth inch pipe. This we used on all the heavier bearings, having removed the small grease cups so the pipe can be screwed into the fitting which held the cup. The grease gun is used twice a day to completely fill the bearings and force the grit and dirt out of the bearings. The openings are then protected by one-eighth inch plugs to keep out grit. Chester also turns up the remaining cups twice before noon and twice after noon.

After all this you will want to know what we expect to accomplish in the way of saving over the use of mules. I find that we can get about eight hours tractor work done in a day and that we travel two miles per hour, which is a little faster than the average team will walk with a load. We do not have to stop in hot weather as the tractor works best when fairly hot. We can plow from four to four and one-half acres when we run an eight hour day with the tractor instead of two and one-half to three acres with the team in favorable weather. The cost of fuel and oil for the eight hours tractor work is \$1.85, or less than 50 cents per acre, while the feed for the team at present prices, would cost \$2.80 per day, or nearly \$1.00 per acre. The tractor consumes nothing when not at work, but it costs about two-thirds as much to keep an idle horse as when at work, particularly when the horse has to be kept in condition for work. This extra feed cost adds very materially to the cost per acre of team work, though seldom considered. We can readily disk twice as much per day as with a team, particularly in hot weather, and while we may not get twice as many acres gone over with the cultivator we expect to do better work. I find we can plow closer to the trees than with two horses and can also get under the branches of orange trees with a disk harrow better than with a team since a little side draft does not make sore shoulders. However, a horse is a good thing to have on the place, and I have one to work in the short rows of a garden and put stops in checks for irrigation as well as other small jobs.

While I do not know of any perfect tractors, they are far enough along to be practical machines, and any one who has 40 acres of orchard or other intensive cultivation, should not hesitate about buying one as I believe that with such an acreage they can be made to pay for themselves in three years by the saving in expense of both man and horse power.

The man who has some natural mechanical ability will like the tractor best and will have less trouble in operating it than the man who knows or cares nothing about machinery.



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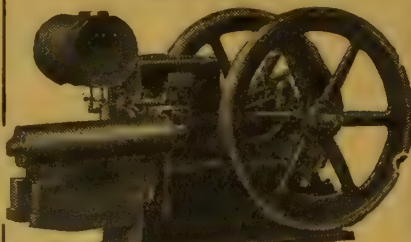
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## Live Oaks Dying



LL Southern California is concerned over the dying of branches of her most beautiful live oaks. Some trees appeared a few weeks ago to be entirely dead, but of these some are now putting out new growth and may possibly recover. It has been surmised that the trouble might be due to root or other fungus, to insects, or to the long rainless period of last season. George A. Coleman of the University of California has taken up the investigation, and from a preliminary statement made by him we quote:

While it will require considerable further study to determine the exact relation of all the insect pests and fungus diseases concerned in their death, and to arrive at the ultimate cause of the death of some trees, the preliminary examination shows that at least three species of bark boring beetles are mainly responsible. Of these, the one which is believed to be the start of the trouble is a twig girdler, the larva of which is found boring under the bark of the small twigs near the end and is the cause of the death of so many twigs on otherwise apparently healthy trees. As soon as these twigs begin to die another species of beetle attacks them and the larva is found boring into the heartwood. The attacks of these two beetles, when in sufficient numbers, causes the death of a large number of twigs, thus very much weakening the tree so that it cannot withstand the attacks of a third species, which, though it is the smallest of all, is the most numerous, and belongs to the Scolytidae, a genus of bark boring beetles very destructive to oaks. This third species, known under the scientific name of *Pityophthorus pubennis* Lec., normally breeds in recently cut oak wood, limbs broken off by storms, or in trees which are nearly dead from other causes. The entrance is made by the adult beetle, usually the female, through a hole in the bark, hardly larger than a good sized pin, and on reaching the cambium or sap carrying layer of wood just beneath the thick outside bark, the female makes a short transverse gallery in this soft layer, depositing her eggs in little notches along the edges. These eggs soon hatch into tiny larvae, which are very voracious feeders, and starting out at right angles to the parent gallery they soon make their way for a considerable distance from it, destroying the cambium, which is the life of the tree, as they go. When numerous enough, as they are at present, their entrance holes may be found covering the entire surface of the larger limbs, the entire body of the tree, and even the larger roots just beneath the ground. As their work of destruction is carried on underneath the bark, there is sometimes no outward sign of the death of a tree until the larvae have entirely covered, or at least entirely girdled the tree trunk just above the ground, which is its most vital point, the flow of sap being thereby entirely cut off, and the tree dies very suddenly. The entrance of these beetles may be discovered, however, by the appearance of numerous small discolored patches on the bark of the trunk and larger limbs, each of which marks the entrance of a beetle, the discoloration being caused by the flow of sap from the hole.

Where such a large area of territory is affected, it may seem a hope-

less task to undertake any treatment to save the trees. The fact, however, that these pests do not normally breed in a perfectly healthy tree, is of great assistance to us and points a way to the remedy. The probable reason for the appearance of these insects in such numbers, is that they have found a large number of neglected trees, fallen or cut limbs and trees cut for wood and left lying on the ground, furnishing the right condition for their breeding in immense numbers, until now they have become a menace to the living trees. It is believed also that a fungus which attacks the leaves and branches, and possibly other wood destroying fungi working on the trunk of the tree, may be responsible for the death of a few trees, which also furnish breeding places for the insects. This, however, is a matter for future study and consideration.

The fact that the entrance holes made by the beetles in the bark are so small, and are immediately closed, makes it an impossibility to reach them by means of a spray or fumigation after they are in the tree, the only possible chance of reaching them by these means being to catch the adults before they have entered the bark, or by treating the trees after they are dead and still contain the larvae and adults. It may be that further study will reveal some parasites and predacious enemies which will at least assist in their control. The immediate solution of the problem lies in the reduction of the number of beetles by the destruction of the larvae and adults while still under and in the bark of the dead and dying trees. In order to make this effective there should be cooperative action by the owners of the property on which the affected trees are found not only in the vicinity of Montecito, but all along the valley and Coast foothills on either side of Santa Barbara, and it might also be well to ask the cooperation of the United States forest service on the national forest, and of the state forester in compelling non-resident owners and negligent owners to clean up.

The most effective treatment to be followed at present is a campaign of cleaning up and burning all the dead branches and dead trees which are past recovery. If it is desirable to save the wood of dead limbs or trees, such limbs or trunks may be treated by building a fire of the smaller trunks containing the beetles and larvae on this fire, where they should be left for at least half an hour until the sap in the bark and wood becomes thoroughly heated and generates sufficient steam to kill all the larvae and adult beetles. This method was tried under the writer's direction and proved entirely successful. When carefully done every insect in the wood or bark will be killed. All stumps should be either dug out and so treated, or have the earth dug away from them so as to expose the larger roots and have a fire built on top of them. This will take care of the small beetle which works on the larger branches and trunk and is responsible for the immediate death of the trees, but in order to control the twig girdler, which is believed to be the first cause of the trouble, it will also be necessary to trim off and burn all of the dead twigs which are now so numerous on otherwise healthy trees. If a very valuable tree is found to be affected, but is still alive, and it is de-



sirable to save the tree, it should be well cut back, all the dead and dying limbs removed, and the tree stimulated by giving it plenty of water and even some fertilizer and cultivation.

This campaign of trimming and burning should start at once and be continued until thoroughly completed, as right now seems to be a very active time for the beetles in the trunk

and limbs, and the larvae of the twig girdlers are still mostly in the twigs while later they will have developed into the adult beetles and these will have gone to fresh twigs.

The writer hopes to be able to make a further study of the problem during the month of June, and to render further assistance in the matter of control.

## The Racing Homer--Its Uses in The Present War

Written for California Cultivator

By H. R. Sands

**T**HE "Racing Homer" called by most people "Carrier Pigeon" is a Belgian production and is a wonderful improvement over the old Carrier Pigeon. The Carrier is dependable to fly a distance of 100 miles, while the Homer has been known to fly over 1500 miles with as much dependence as the Carrier would 100 miles.

This wonderful bird is used to a very great extent in the battlefields of Europe and has been instrumental in saving thousands of lives since this means of communication has been re-



Game Cock

Game Cock is the property of H. R. Sands of Glendale, and is the first bird to fly over the hard mountainous and desert like course from Redding to Glendale, a distance of 500 miles air line same day. This remarkable pigeon covered the distance in 14 hours and 40 minutes, flying against a head wind, with heat in the San Joaquin Valley registering 120 degrees. It takes the fastest train on the Coast 24 hours to cover this distance. Game Cock is doing his "bit" by producing squeakers for Uncle Sam.

sorted to. In one instance alone a body of men numbering approximately 600 became isolated from the main army during an engagement. All hope had been abandoned by the majority of the heroic band, when one of the officers released two Homer pigeons which he had with him. In exactly 16 minutes from the time of liberation a barrage fire was lifted, enabling them to rejoin the main army.

The following is a brief narrative of the Homer from the date of its

birth up to and including its life on the battle front.

At the age of five or six days an aluminum band showing registered number, year of birth, and letters USA, is placed on the foot. The foot grows very rapidly, and in the course of a week it would be impossible to remove the band without injury to the foot. At the age of six weeks the "squeakers," as they are termed, are ready for shipment, and at the time of their arrival on the battle front they have attained the age of about eight or nine weeks. They are then placed in a loft fastened on a movable van situated out of gun range, generally near the commanding officers' quarters. The loft is equipped with a gas proof contrivance which is used when the occasion requires it. In a few days the birds are liberated, generally in the evening as they are not likely to stray any great distance from the loft during the late hours of the day. In a few days they have become thoroughly settled into their new surroundings. After a period of three or four weeks they are ready for their training and are taken a distance of about a mile, then two, five, ten, 20, 25 miles and are thus trained in all directions until they are familiar with what is expected of them.

At times it becomes necessary to move the loft as much as ten or 15 miles from the point at which it was at the time the bird was shipped for a flight, but in all cases they locate the loft as they soon learn to expect its removal after a time or two.

Messages are placed in a folding tube which is attached to the aluminum band on the leg of each bird. This tube will carry quite a lengthy message if finely written on tissue paper rolled very tightly before being placed in tube.

Aerial wire had to be abandoned for the use of the telephone on the battle fronts on account of the barrage fire; underground on account of shell fire; and wireless is out of the question as the enemy have gathered the message and this has been the cause of many casualties. As a last resort the Homer was tried and has triumphantly turned the trick to the extent that 97 per cent of the birds liberated deliver the messages.

## A Convenient Henhouse

Written for California Cultivator by Jean A. Koethen

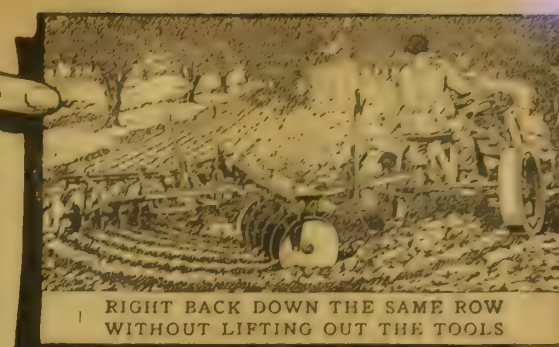
**W**ELL equipped, conveniently arranged henhouses are an important factor in the profitable keeping of poultry. One man with modern conveniences can care for twice as many hens as two men without them. Of course these conveniences cost money, a handy man with a set of tools can do a good many things to make his work easier. The main thing is to see

clearly just what is required for the saving of steps.

S. J. Cotter of Arlington was for many years a mechanic. When circumstances forced him to exchange his chosen calling for the raising of hens his mechanical training taught him where to look for the best ways of lightening the poultryman's labor. He saw at once that the carrying in of feed and the carrying out of ma-



Note This,  
Farmers and  
Growers

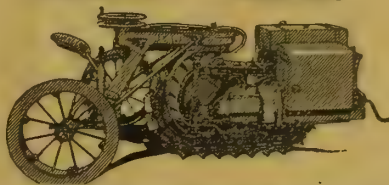


"Right-About Face"  
with FULL POWER!

Remarkable Performance  
with Small Tractor

**B**EFORE you write out your check for any tractor, note how the Bean TrackPULL turns right around into the same row with tools down deep all the way, without pivoting, or overloading one side of the tractor, or doing anything else that is injurious, or difficult, or that a tractor shouldn't do. Note how this tractor takes its turn with its full load, just as easily at it takes the same load down the straight-away. Note the reason for this in this tractor's single track with which it pulls and you steer. See how easy it is to steer, and how that great PATENTED SINGLE TRACK FEATURE also makes the TrackPULL Tractor as flexible as the best team you ever had.

Bean TrackPULL  
Tractor With Patented  
Front-Drive



"Almost Like  
Animal Intelligence"

"Mine acts like it understood—almost animal intelligence." is the way one man puts it—and you'll want that, too, in a tractor. For ease of handling, as well as the ability to make right-about-face turns with full power, has got to be in the tractor you use in an orchard or vineyard or in the field, where there's a lot more than just straight-away work to do.

Be careful about "acrobat" tractors—for tractors that will spin around at a fair aren't necessarily tractors that will turn short with a full load in the field. Make them demonstrate to you with their tools hitched on.

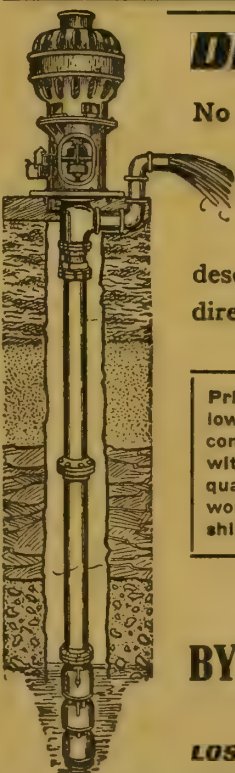
Send right now for the Bean TrackPULL catalog, learn the price of this great machine, and get the name of the nearest factory-agent who will demonstrate how the Bean TrackPULL Tractor does the kind of work that's waiting for it on your place. Mail us this coupon, now before you forget it. Find out the truth about tractors right now!

Bean Spray Pump Co., Dept. D-4  
231 W. Julian St., San Jose, Cal.  
431 N. Los Angeles St., Los Angeles, Cal.  
Please send Tractor Book with full information about the Bean TrackPULL Tractor.  
Name .....  
Street .....  
City .....  
County ..... State .....  
No. of acres ..... Kind of crops grown .....

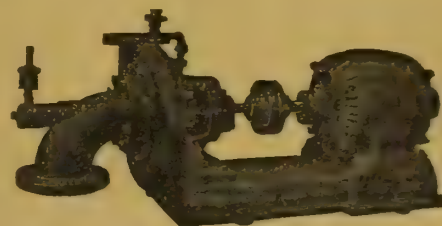
## DEEP WELL TURBINES

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.



Prices as low as are consistent with good quality and workmanship.



"Write for Catalog No. 48"

BYRON JACKSON IRON WORKS, Inc.

SAN FRANCISCO

LOS ANGELES

VISALIA

**P I P E**  
For Every Purpose NEW  
Threads and Couplings  
Hot Asphaltum Dipped  
2nd Hand and NEW  
Screw Casing Fittings and Valves  
Guaranteed for Pressure

TESTED and GUARANTEED  
Pacific Pipe Co. Main and Howard Sts.  
San Francisco

**L I M E**

Pulverized Limestone.....\$3.35 per ton  
Ground Limestone.....\$2.50 per ton

This is the One Element Lacking in Most California Soils. Write for Booklet  
Riverside Portland Cement Co.  
640 Title Insurance Bldg., Los Angeles, Cal.



nure involve an expenditure of more time and energy than anything else about the work. A robust man would have gone on wasting energy and a

## Norwalk TIRES

The Tread That's Ahead

Note the massive construction.

Note the symmetrical construction.

Purest Para rubber used.

Finest quality Sea-Island cotton fabric.

Designed by the world's foremost tire authorities,—MEN WHO KNOW.

Ask for Price List.



Lichtenberger-Ferguson Co.

Los Angeles, San Francisco, Fresno

## Make your Ford Hold the Road PREVENT TURNING TURTLE



Ruts, bumps and similar obstructions in the road will not upset or cramp your Ford if you have it equipped with a

### SPRAGUE WORM STEERING GEAR

Holds the front wheels in any position you turn them. Makes steering easy through mud, sand and on center-crowned roads. Prevents locking over center. Eliminates the jerky, insecure movement to steering wheel.

New model (ball bearing—floating shaft) requires no adjusting, is easy to put on. Has internal spring steering gear connecting rod which absorbs vibration, shock and strain on arms and shoulders.

This gear gives you complete control. Makes your Ford steer as safely and easily as any high-priced car.

Take no more chances of upsetting or leaving the road. Get this safe steering gear.

Money Back If Not Satisfied

If not at your accessories dealer, write us. Full information FREE.

E. H. Sprague Mfg. Co., Dept. 30-A Omaha, Neb.

**MYERS PUMPS**

FOR EVERY PURPOSE

HAY UNLOADING TOOLS

DOOR HANGERS

ASK YOUR DEALER OR WRITE US.

**F.E. MYERS & BRO.** NO. 1365 ORANGE ST. ASHLAND, OHIO.

ASHLAND PUMP AND HAY TOOL WORKS.

lazy man would not have minded wasting time, but Mr. Cotter is neither robust nor lazy, and so he put in operation a device which is frequently recommended but rarely seen.

This device is a small car, perhaps four feet long, hung on a trolley which runs the length of his long laying house. This car can be run at two different levels, the one at a height convenient for the handling of feed, the other somewhat lower so that the manure from the droppings platform can be scraped off into it with a hoe. With this car, the cleaning of a 200-hen house and the replenishing of the feed hoppers takes but a few minutes.

Another helpful device of Mr. Cotter's is nests on hinges. Instead of the ordinary arrangement of nests in tiers along the front of the house, his nests are arranged in single tiers of six or seven and swung in under the droppings platform. Here they are dark and secluded while the hens are laying, but when time for gathering the eggs comes a single turn of the wrist swings them to the edge of the platform.

Mr. Cotter uses the regulation long house built in sections 20 by 24. According to the regular space allowance of, two feet for each Leghorn

hen, each section should hold but 200 hens. Mr. Cotter, however, has found that with the abundant scratching room provided in front of and under the droppings platform and the good-sized runs outside, 300 hens live very comfortably in one of them. The house fronts east and is entirely open in front except for a covering of two-inch wire. Such a house as this would be very suitable for a farm flock of 200 to 300 hens. Built a little smaller, say 42 by 16, or 14 by 14, it would furnish ample accommodations for 100 Leghorns or 75 Rocks or Orpingtons.

## At the Tractor Demonstration



**Samson Sledge-Grip**  
"Built Like a Battleship" is the slogan of the Samson. Particular points are made of dust-proof qualities and over-size bearings.



**The C. L. Best**  
The Best tractor "Built to increase your profits" showing working of the giant Schmeiser leveller.



**The Cleveland Cultivator**  
A corn and cotton cultivator, the newest type, built high for field culture.



**Standard Oil Service**  
Efficient service rendered by truck and delivery wagons. Gasoline and oils were delivered at all hours.

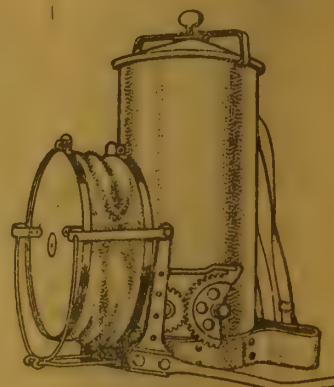


**The Fageol**  
Novel in construction. Its spokes without a rim loosen soil and secure traction.



**The I. H. C.**  
The International orchard type 8-10. Burns distillate. Demonstrating worth of P. & O. Power Lift.

## American Beauty Dust Sprayers



They have saved thousands for others, let them save for you.

**KILL Mildew, Codling Moth, Red Spider, etc.**

At your dealers, or send to us.

Standard size .....\$16.00  
Junior size .....\$13.50

One week free trial, money back if not satisfactory.

Send for our book on pest control.

**The California Sprayer Co.**

6001-6029 Pasadena Avenue  
Los Angeles.  
Reedley, Calif.

Say to your Grocer

**"Send Me Jevne's '35,' Coffee"**

Your good-morning cup of coffee should be clear and uniform, always retaining the delicate Aroma and distinctive flavor of perfect coffee—JEVNE'S "35"

Your grocer can always supply you

Our monthly publication "Table Tips" is full of vital interest to the housewife. Send for your copy today! It's Free.

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LOS ANGELES

## Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines

The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.

**Hydrometric Co.** 955 North Main St. Los Angeles Cal.

## The Papec Pneumatic

Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.

For particulars write

**Santa Fe Lumber Co.**

16 California St. San Francisco



# FRUIT CROP REPORT

Continued from Page 531

J. B. Neff, Anaheim, Orange County

The season is so late that it is not possible to make an estimate of the apricot crop for some weeks.

Red Bluff Fruit Association, Tehama County

Apricots show a very light crop, frost having damaged 25 to 50 per cent. Peaches also are a light crop. The blossom was light and there was some frost damage. Probably will have half a crop. The almond crop will be about 75 per cent of normal. Cherry crop is probably not over 25 per cent. Prunes and pears show good prospect for full crop.

A. L. Rutherford, Horticultural Commissioner, Stanislaus County

Apricots 90 per cent, peaches 75, almonds 75, cherries 100, prunes 100.

Norman G. Buler, Horticultural Commissioner, Kern County

Apricots, peaches, almonds and prunes all show 100 per cent set of fruit.

William Gould, Horticultural Commissioner, Yolo County

Apricots 40 per cent, peaches 50, almonds 50, cherries 80, prunes 60.

J. M. Ballantyne, Acampo, San Joaquin County

Apricots 50 per cent, peaches 80, almonds 50, cherries, Royal Anne 80, Black Tartarian 50; prunes 75.

Chico Cured Fruit Association, Butte County

Indications are for 60 per cent crop of peaches, 40 per cent almonds, cherries and prunes 100 per cent.

(Many other valuable reports will be given next week.)

ticular type of tool, implement or tractor desired.

Near these exhibit tents was the parking ground for visitors' autos. It covered acres, and it was reported that at one time there were 2000 autos parked over these extensive grounds.

Across the street, and over the railroad, with a 100 acre field, along one side of which, in a straightaway line over a mile long were the private tents of the exhibitors. All the tents were alike and served simply as business offices for each demonstrator. A straightaway strip in front of each tent or concession was the private demonstration ground. The farmer had only to suggest his particular need and the tool he wished to handle with the tractor, and implement dealer and tractorman united in putting up a combination and demonstrating its power of working, and the prospective buyer had only to observe.

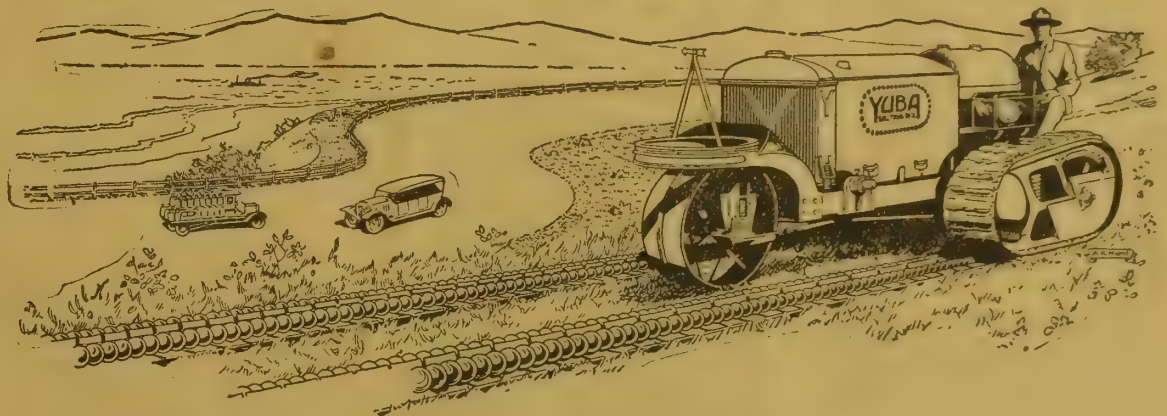
The afternoon public demonstration of plowing had an unfortunate feature in that it was on still another field two miles away. On this field each tractor was assigned a strip in width according to its horse power rating. Each plowed the same length of furrow and the same depth. Boys of the University Farm were official measurers, and they were everywhere with the official yardstick, and eight-inch depth must be reached or the operator of the plows was immediately called. Credit is due to the University Farm boys for much of the success of this demonstration. They acted as gate tenders, volunteer police, official measurers, and always did the general courtesy stunt.

A thrill was occasionally given by the long overland trains passing through the demonstration grounds at frequent intervals. The attention attracted by the passing train was only

momentary, unless it proved to be a special filled with boys in khaki. Each car window would be filled with two or three of the Sammies, waving arms and hats, cheering on the food producers, and the food producers in turn gave salute and a cheer as the boys sped on toward the trenches.

Some few of the impractical ones, but those who had an eye for beauty, looked with regret upon the acres on acres of gorgeous California poppies which were plowed under or crushed by the wheels of the great tractors. Every visitor to the grounds had one serious grouch, and it was justified. This was because of the feeding conveniences, or rather the lack of any provision for feeding such a throng. Those hot dog joints sure were fierce. At 15 cents per one small dust peppered dog between two Hooverized slices, believe me, there was conservation.

## The Ball Tread is the good roads of tractorodom



As the solid steel frame moves forward it glides on the two sets of enlarged ball bearings; glides easily—like an automobile on the solid highway.

The track, or tread shoes, over which the steel balls roll, does not move on the ground; it is the hard smooth surface—the highway over which the tractor glides so easily.

There is little friction, as these hard round balls roll in their annealed, cast steel ball race.

But a very small part of the power generated by the engine is required to propel the machine; the larger part is delivered at the draw-bar.

The track is self-cleaning. The tread shoes are so designed as to give the maximum tractive power.

What good roads have done for all the people, the Ball Tread Tractor is doing for the farmer—making it possible to plow deeper, plow more acres, cultivate in season, and produce larger crops. The Yuba Ball Tread Tractor is the highest example of mechanical skill, of engineering design, practical working features; and the ball tread is the key that opens the way.

The Ball Tread is as near to frictionless movement as engineering knowledge has yet produced.

The rigid steel frame allows no loss of power from the sagging of the upper parts of the endless ball tread.

Adapt this money-saving power to your problems. Plow deeper at less expense. Raise larger crops with less labor—the Yuba is a one-man outfit.

## Yuba Manufacturing Company

Department B

433 California Street

San Francisco

Factories at  
Marysville  
and Benicia

Models:

12-20—55 ins. wide

20-35—73½ ins. wide

# EDITORIAL CORRESPONDENCE

Continued from Page 527

here nor is it standardized. But its power to do things has caused multitudes to stop and remark, "The world do move."

Hence tens of thousands gathered last week near the University Farm at Davis to view tractors in action, in action under nearly all kinds of conditions, directed by experts and even handled by novices. There were men drivers; there were women drivers.

There were none of the old-time steamers on the grounds, but practically every form of gas tractor was there. There were three sections to the demonstration grounds, or, rather, one field in which four mammoth tents were erected, these being filled with trucks, trailers, still exhibits of tractors, washing machines, spray pumps, irrigation supplies, seeders, pianos, ice making machines, rice threshers, bean threshers, iron water-troughs, autos, and all parts and accessories of autos, cylinder rings for gas engines, mammoth dump trucks, miniature silos, tents and camping outfits, oils and greases, and a thousand and one other things of use on a modern farm.

Not a blue ribbon was won by any of these diverse exhibits. It was not a fair; it was not intended as an educational exhibit, though of necessity it did educate; but it was one great sales making time. It was frankly understood to be a business proposition in which each member of the association was expected to do business, and he did it.

So far as observed, the truest of cooperative spirit prevailed, that is, where one dealer was unable to meet the needs of a possible purchaser, he was quickly referred to a business competitor who might have the par-



## Household Department

### DEFENDERS OF "THE SECOND LINE"

Plod on  
Old faithful team—  
Each step you take adown the field  
Removes a nation just one step  
From tyranny's control—the yield  
Of crops that follow in your wake,  
A nation's freedom helps to make—  
Old faithful team,  
Plod on.

Turn on  
Old faithful plow—  
Inanimate—yet what import  
Your work is to a nation's life  
And liberty! You build the fort  
Of food defense, while urgently  
The furrow whispers—anxiously—  
"Old faithful plow,  
Turn on."

Toil on  
Son of the soil—  
With steady stride—with singing heart  
From morn's pale light till setting sun—  
A privilege thus to do your part,  
Grudge not the perspiration's flow;  
'Tis part of freedom's debt you owe—  
Son of the soil,  
Toil on.

—H. M. Rahback.

### MOTHER'S LITTLE FLING



TELL you, I don't approve. I emphatically do not approve of Mother's traipsing about the country alone at her age."

Joshua Towles glared at his sister.

"Yes, Joshua, I know your sentiments. Woman's place is the home and that sort of thing," Eliza Bennett replied, "but Mother's done her fair share of staying. The fact remains that she's eating her heart out to see Charlie and her new grandson."



How's This for Barley, March 31?  
The boy, Howard Louis Bailey, is five years old and four feet high.

"If she'd just wait until spring, I could go with her."

"I said if she'd wait until autumn, I'd go, and she waited and here I am flat on my back—oh, yes, quite comfortable now, thank you! It isn't her 'duty' to stay with me. But when spring comes, you'd have to go North or South or East or West on business and Mother would be disappointed again.

"Don't be foolish, Joshua. You can take Mother to Chicago and put her on the train. She goes straight through without change and Charlie meets her at San Francisco. What's dangerous about that even for a woman of Mother's tender years?"

"Does Mother really want to go?"

"Ask her and see her eyes shine."

"When does she want to go?"

Joshua queried a little gruffly.

"Just as soon as I could persuade you to consent. How soon can you take her?"

"I have to go out to the mines next week and I can start her from Chicago if she can be ready."

"Ready! Mother can be ready in 24 hours. You go tell her and get your reward."

Mrs. Aschah Towles, mother of Joshua and Eliza and Charles, was not a demonstrative woman and therefore Joshua was completely surprised when she threw both arms about his neck and sobbed on his shoulder.

"Why, Mother!" he soothed her, patting her back awkwardly.

"I haven't seen Charlie for six years and his boy is my only grandchild," she murmured as she mopped her eyes.

"All right, Mother, I'll call for you on Wednesday. We'll wire Charlie when you leave Chicago and he'll meet you at the other end. If by any chance there should be a slip, take a cab to the St. Francis. I'll write the manager to take special care of you."

"Humph! Don't you worry one mite about me once I'm on that train for California."

Joshua Towles did worry, being rather given to that futile occupation. His mother looked so tiny and frail among the hurrying crowd in the Chicago station, that before he started to the mines, he wired his friend, manager of the St. Francis, to meet his mother's train. "Charlie might miss her in the crowd and it won't do any harm to have two of them on the lookout," he said to himself.

Meanwhile, Mrs. Aschah Towles sat in her Pullman seat and had it out with her conscience.

"It wasn't because you didn't want to worry Joshua, that you didn't tell him; it was because you knew he'd stop you," her conscience accused her.

"The ticket was bought and everything," she argued back, "and besides I wasn't going to be stopped, not this time," she added with a determined shake of her head. "I promised to wire as soon as I arrived but no telling when that will be," she smiled to herself a little grimly, "so perhaps I'd better begin a letter to Eliza. She's more understanding than Joshua."

But Mrs. Aschah found difficulty in explaining herself satisfactorily even to the more understanding Eliza.

"Charlie's letter came," she wrote, "while I was tying on my bonnet; and the ticket being bought and everything, I just didn't say anything to Joshua to worry him. But Charlie and Alice and little Godfrey have gone off camping and won't be back for a month. Joshua carefully explained that my ticket allows stop-overs at any point. All I need to do is to tell the conductor if I feel ill and get off at the nearest town where there's a hospital with good doctor and nurse. I shan't feel ill but I thought maybe I'd stop off and see my Cousin Abner's widow; and Sary Ann Wilson's daughter lives just the other side of Kansas City. I'd like to see if she's like her mother. Then ever since you and Joshua brought home those pictures of the Grand Canyon, I've wanted to see that awful chasm. So I just thought without worrying Joshua, I'd start out for California just the same."

"We've got a real nice friendly conductor and he says there's lots of things to see on the way out. You've got sense, Eliza, so I expect you to keep Joshua calm. I'll write you all along the way."

Eliza Bennett was far from calm herself as she read her mother's letter; then she lay back among her pillows chuckling to herself.

"Mother shall have her little fling. I guess a woman who raised Joshua and Charlie and me's entitled to it."

Two weeks later Joshua Towles burst into his sister's apartment.

"Eliza Bennett, do you know where Mother is? Be serious. Look at this." His hand trembled as he thrust under her eyes a telegram. "I've been tele-

## The Cultivator Patterns



8728

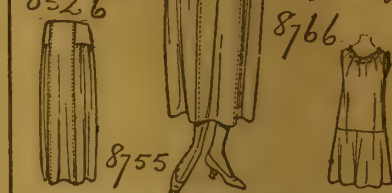
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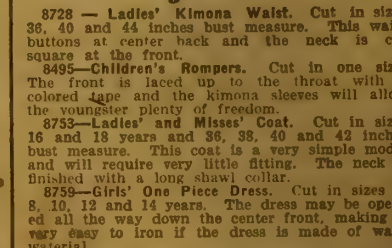


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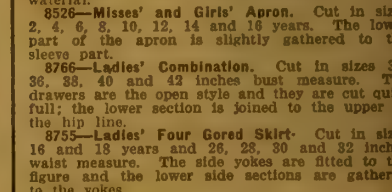


8526

8766



8755



8728—Ladies' Kimona Waist. Cut in sizes 36, 40 and 44 inches bust measure. This waist buttons at center back and the neck is cut square at the front.

8495—Children's Rompers. Cut in one size. The front is laced up to the throat with a colored tape and the kimona sleeves will allow the youngster plenty of freedom.

8753—Ladies' and Misses' Coat. Cut in sizes 16 and 18 years and 36, 38, 40 and 42 inches bust measure. This coat is a very simple model and will require very little fitting. The neck is finished with a long shawl collar.

8759—Girls' One Piece Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The dress may be opened all the way down the center front, making it very easy to iron if the dress is made of wash material.

8526—Misses' and Girls' Apron. Cut in sizes 2, 4, 6, 8, 10, 12, 14 and 16 years. The lower part of the apron is slightly gathered to the sleeve part.

8766—Ladies' Combination. Cut in sizes 36, 38, 40 and 42 inches bust measure. The drawers are the open style and they are cut quite full; the lower section is joined to the upper at the hip line.

8755—Ladies' Four Gored Skirt. Cut in sizes 16 and 18 years and 26, 28, 30 and 32 inches waist measure. The side yokes are fitted to the figure and the lower side sections are gathered to the yokes.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT  
California Cultivator  
Los Angeles

**DR. HESS DIP and DISINFECTANT**

**Spring is Cleaning-Up Time**

The garbage can, sinks, drains, closets, cesspools, all foul-smelling and disease-breeding places need attention. Get out the sprinkling can and make a liberal use of Dr. Hess Dip and Disinfectant. Do this regularly to establish health conditions—to destroy disease germs and purify the air. There is no better way to avoid contagious diseases. Use it also about the poultry house, pig pen and stables. One gallon makes 100 gallons of disinfectant. **GUARANTEED.**

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has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

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graphing back and forth for two days. Mother did not arrive in San Francisco. The manager of the St. Francis met her train; the conductor remembered a little old lady who left his train at some small station in Kansas. Charlie's camping and can't be reached. His stenographer remembers mailing a letter to Mother the day he left San Francisco. She couldn't have received it."

"Oh, yes, she did! I'm afraid you've raised your mother to deceive you, Joshua. Mother's itinerary is marked by that pile of picture post cards. The postmarks may be interesting to you."

"Eliza Bennett, have you lost your mind? I want to know where Mother is, now."

Concluded next week.



#### WAR-TIME RECIPES

"Sixty War-Time Recipes" is the title of a little booklet issued by the Home Economics Department of the University of Arizona. The aim of the department in collecting, testing and publishing these recipes is to substitute other grains for wheat, yet making nutritious and palatable dishes; to use as little fat as possible, and from vegetable rather than animal sources; to substitute karo syrup, honey or molasses for sugar; to substitute other protein foods for meat. We publish below a number of recipes for meat substitutes which will be found well worth trying. Every recipe we have seen published by the Arizona home economics department has been excellent. Others for bread, cake and pie making will be published in later issues.

#### Mock Sausages

Pick over one-half cup lima beans and soak over night in cold water to cover. Drain and cook in boiling, salted water until soft; then force through a puree strainer; there should be three-fourths cup pulp. Add one-third cup rolled dried bread crumbs, three tablespoons heavy cream or fat, a few grains pepper, one-fourth teaspoon salt, one-half teaspoon sage, and one egg beaten slightly. Shape in the form of sausages, dip in crumbs, egg and crumbs, and fry in deep fat or bake in a hot oven. Drain, arrange on serving dish and garnish with fried apple rings.

#### Pea Roast

Three-fourths cup bread crumbs, one-half cup canned pea pulp, one tablespoon sugar, four tablespoons English walnut meats, finely chopped, one egg, three-quarters teaspoon salt, one-eighth teaspoon pepper, one-quarter cup fat, three-quarters cup milk.

Break stale bread in pieces, dry in oven, and roll. There should be three-quarter cup bread crumbs. Drain canned peas, rinse thoroughly with cold water, put in saucepan, cover with cold water, bring to the boiling point and let boil three minutes. Drain and force through a puree strainer; there should be one-half cup pulp. Mix bread crumbs, pea pulp, sugar, nut meats, egg slightly beaten, salt, pepper, and milk. Turn into a small bread pan lined with paraffine paper, and let stand 15 minutes. Cover and bake in a slow oven 40 minutes. Remove to hot serving dish, and garnish with Spanish sauce.

#### Nut and Celery Loaf

Put through meat grinder together: one and one-half cup celery, one cup walnuts, add one-third cup dry crumbs, three-quarters teaspoon salt, pepper, one egg, one cup water to moisten. Mix and bake in moderate oven three-quarters hour; serve with tomato sauce.

#### Chili Red Beans with Cheese

Soak over night and cook until tender two cups red cooked beans, add three tablespoons fat, salt and chili sauce to make it taste right, water if necessary, and when very hot, one cup grated cheese. Take from heat, mix well and serve at once.

#### Tomato Toast

Brown two tablespoons fat, brown in it one to two tablespoons onions cut fine; then add two tablespoons flour, one-quarter cup peanut butter, one teaspoon salt, pepper, three cups tomato. Cook to thicken, season, and serve on squares of toast.

#### Chowder

One cup cooked peas, split, two cups corn, canned, one cup milk, one tablespoon of fat. Season with salt and pepper. Soak peas several hours, cook until soft, add corn and heat a few minutes, then add milk and fat.

#### Peanut Loaf

One cup peanuts, chopped; one-half cup rice, uncooked; two tablespoons butter, one-half cup milk, one egg, seasoning to taste. Cook the rice, add the other ingredients; bake in greased pan about 30 minutes. Serve with celery sauce.

#### Kidney Bean Stew

One cup kidney beans, one small onion, two tablespoons of rice, two cups canned tomatoes, two tablespoons pork or bacon or drippings, two tablespoons flour, salt and pepper to taste.

Soak beans over night in cold water to cover. In the morning place beans over fire, adding water to cover if necessary. Cook slowly until beans are soft. Then add the tomatoes, onions, rice and seasonings and simmer until the rice is very soft. There should be about a quart and a half of stew, and if there is not, add water. Mix the flour and fat, and use to thicken the stew.

#### Boston Roast

Two cups cooked beans; two cups cheese, one-half cup chopped nuts, one teaspoon salt, one-eighth teaspoon pepper.

Soft bread crumbs to shape into loaf. Bake 30 minutes in moderate oven. Baste with one tablespoon fat in one-quarter cup water. Serve with tomato sauce.

I am convinced that nothing so makes for the comfort of a farm home as good lighting. During winter evenings the room may be warm and comfortable but, if poorly lighted, it can not be homelike nor comfortable.

Life is so short; seems too bad we can't all have a lot of what we like. Yet what a happy faculty it is to be able to tune ourselves to our surroundings, to take what is at hand and let it be dear to us.

## It takes the fuss out of breakfast

THANKS to Ghirardelli's—breakfast-making is not the job it used to be. There's no fuss—no muss—no time lost.

If a chocolate pot does not happen to be handy—you use an ordinary stew-pan. It takes but a minute or two. And then—you have the most delicious of all food-beverages steaming hot, ready to serve.

An ideal blend of ideal foods—cocoa and pure sugar—Ghirardelli's supplies the maximum nutriment at minimum cost. Always keep a can on hand.

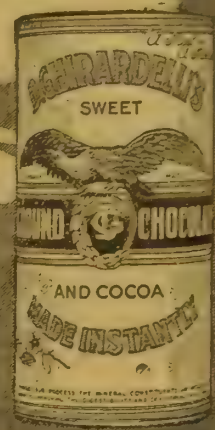
In  $\frac{1}{2}$  lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

D. GHIRARDELLI CO.

Since 1852

San Francisco

# Ghirardelli's Ground Chocolate



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—built to battle rough roads  
Horse Shoe tires make good

—and more than good.  
They have fought and won their way to being recognized as the tire of "mileage + economy."

## HORSE SHOE TIRES



For instance Horse Shoe Ford Non-Skids are guaranteed seventy-five hundred miles, but that's merely minimum mileage—the maximum mileage in Horse Shoes would seem incredible if it were not so repeatedly demonstrated in the experience of Horse Shoe owners.

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HOLT AND INTERNATIONAL HARVESTER TRACTORS USED FOR DEMONSTRATION

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.



## Los Angeles Market

Los Angeles, April 24, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....39  
Dairy Exchange price past week on ex-  
tras.  
April 17 18 19 20 22 23  
18 ... 38 38 38 39 39  
Rets. wk. ending April 23, 440,100 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. ....28  
Eastern Daisies .....27  
Domestic Swiss .....40

## EGGS

Exchange quotations. Prices to re-  
tailers 2 to 4 cents higher.  
Fresh extras .....40  
Pullets .....38  
Case Count .....38  
Dairy Exchange prices past week on  
fresh extras.  
April 17 18 19 20 22 23  
18 ... 39 40 40 40 40 40  
Rets. wk. ending April 23, 3905 cases.

## POULTRY

We quote to producers:  
Food administration now allows sale of  
hens for eating.  
Broilers .....30@34

Fryers .....36  
Hens, small, 20; heavy .....26  
Roasters, 3 lbs. and up .....34  
Ducks, lb. ....20@27  
Roosters, old .....14  
Turkeys .....30@34  
Geese, lb. ....20  
Rabbits, live, 17@18; dr. ....35

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, April  
24, by the Cudahy Company.  
Cattle—  
Beef steers, av. 1000-1100 lbs. ....10.50@11.00  
Heifers, good .....8.00@8.50  
Cows, good .....8.00@8.50  
Canners .....5.00@5.50  
Hogs—  
Av. 125 lbs. ....15.00  
Av. 150 lbs. ....16.00  
Av. 175-225 lbs. ....17.00  
Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent. ....12.00  
Prime wethers .....10.00  
Ewes .....13.50@14.00  
Lambs .....10.50@11.00  
Yearlings .....10.50@11.00

## POTATOES

Wholesale selling price:  
Oregon Early Rose .....2.25  
Northern Burbank, cwt. ....1.80@1.85  
Idaho Russets .....1.55@1.60  
Locals .....1.20@1.25  
New, lb. ....8  
Sweets, lug .....1.60

## ONIONS

Wholesale selling price, cwt.:  
Brown .....1.45@1.50  
White .....8.00  
Crystal Wax, cr. ....1.65  
Garlic .....8

## VEGETABLES

Wholesale prices:  
Artichokes, doz. ....60@80  
Jerusalem, lb. ....7½  
Asparagus .....11@13  
Asparagus .....7@8  
Beans, Wax, lb. ....15@16  
Beets, sk. ....2.00  
Cabbage, lb., 3@3½, sk. ....1.75  
Red, lb. ....5  
Carrots, doz. ....30  
Cauliflower, doz. ....1.25  
Celery, doz. ....70  
Cucumbers — Hothouse, doz. ....75@2.50  
Egg Plant, lb. ....25  
Horseradish, lb. ....15  
Lettuce, doz. ....30@35  
Leeks .....35  
Mint, doz. ....40  
Onions, green, doz. ....25@30  
Peas, Tel., lb. ....7@7½  
Peppers, Chili, lb. ....30  
Parsnips, doz. ....40  
Parsley, doz. ....20  
Radish, doz. ....20  
Rhubarb, C. W. bx. ....1.25  
Strawberry .....1.50  
Romaine, doz. ....30  
Spinach, doz. ....30  
Squash—Crockneck .....70@75  
Hubbard, lb. ....3½  
Summer, cr. ....1.15  
Tomatoes, lug .....2.35@2.50  
Turnips, doz. ....80  
Watercress, doz. ....35@40

## FRUITS

Wholesale prices:  
Apples—King David .....2.00@2.25  
King David .....2.00@2.25  
W. W. Pearmain .....1.65@2.25  
Spitzenberg .....2.50@3.00  
Y. Newton .....1.00@2.25  
Bananas, lb. ....6@6½  
Loquats, lb. ....8  
Strawberries, tray .....1.75

## CITRUS

Lemons, packed, 5.50@5.75; loose....4.50  
Juice .....3.50  
Oranges—Navels, bx. ....3.75@6.00  
Valencias .....6.25  
Grapefruit .....8.00  
Limes, basket .....75  
Tangerines, lug .....2.25

## DRIED FRUITS

These are not prices to producers but  
prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, ¼c less.  
Apples, evaporated, 50s, 16; extra ch.,  
16½; apricots, ch., 16½; extra ch., 17½;  
fy., 18½; pears, 12; peaches, ch., 11; ex.  
ch., 12; fy., 12½; citron, 30 lb.; lemon  
peel, 25; orange peel, 25; prunes, 20-30s,  
17; 30-40s, 15½; 40-50s, 14½; 50-60s,  
13½; 60-70s, 12-7-8; 70-80s, 11½.  
Figs—Calmyrinas, bx., 2.25; black, 25-lb.  
bx., 3.00; white, 3.00; 10-lb. Adriatic layer  
figs, 1.75.

## NUTS

Almonds—Not growers' prices but prices  
of wholesaler to retailer.  
I. X. L. ....25  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Associ-  
ation named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....16  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size  
as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

## RICE

See San Francisco rice market.

## BEANS

These are prices made by wholesaler to  
retailer.  
Lady Washington .....14.25  
Limas .....14.00  
Pinks .....9.00  
Manchurian Reds .....9.25  
Baby Mex. ....9.50  
Garbanzos .....10.00@11.00  
Small Whites .....14.25  
Blackeyes .....10.00  
Tepary .....10.00@11.00  
Lentils .....25.00

## HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oats .....26.00@28.00  
Volunteer Oat .....14.00@16.00  
Wheat .....23.00@26.00  
Barley .....24.00@27.00  
Alfalfa .....19.00@21.00

The Alfalfa Growers' Association of  
Southern California quotes:  
Alfalfa, \$30.00 per ton f. o. b. where  
the \$1.50 freight rate applies, and \$29.00  
f. o. b. where the \$2.50 freight rate ap-  
plies.

## GRAIN AND FEEDSTUFFS

With new barley harvesting on in the  
Imperial it is probable prices on all  
grains may be established soon but as  
yet only chaos obtains and only indi-  
vidual barter can determine price of the  
feeds or grains.

## San Francisco Markets

San Francisco, April 23, 1918.

## BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:  
Two-pound squares, parchment wrap-  
per, ½c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.  
Dairy Exchange quotations, lb.:  
Extras .....40½

## NUTS

Almonds—Cal. Almond Growers' Exch.  
Gross prices: Nonpareils, 21½; I. X. L.,  
19½; Ne Plus, 18½; Drakes, 16; hard  
shell, 11½.  
Chestnuts, Cal. lb. ....10@30  
Peanuts, Va. ....18

Prices on butter are practically 15 cents above year ago this date.

Prices Extras past week and year ago:  
April 16 17 18 19 20 22  
18 ... 40 40 40 40 40½ 41  
17 ... 40½ 40 39 39 38½  
Rets. wk. ending April 22, 800,300 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal. Flats, 28; Y. Am. ....27½  
Jack cheese, full cream .....26@27  
Half skim .....14@17

## EGGS

Dairy Exchange Quotations:  
Extras .....40½  
Firsts .....40  
Selected Pullets .....38  
Firsts .....33  
Prices Extra past wk. and yr ago:  
April 16 17 18 19 20 22  
18 ... 40 40 40½ 40½ 40 40½  
17 ... 32 33 33½ 33 34½  
Rets. wk. ending April 22, 21,530 cases.

## POULTRY

We quote to producers, lb.:  
The food administration now allows  
sale of hens for food. Prices are expect-  
ed to come down.  
Roosters .....21@23  
Per lb.: Broilers and fryers, ¼ to 1½  
lbs., 35@42; 1½ to 3 lbs., 40@45; hens,  
large, 27@29; small, 25@26; old roosters,  
21@23; ducks, per lb., 30@31; geese, 27@  
30.  
Squabs, doz. ....3.50@5.00  
Belgian Hares, live, lb. ....17@18

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ¼ to ½c  
more.  
Steers, lb., 11½@12; thin, 7@11; cows  
and heifers, 8@10; thin, 6½@7½; calves,  
8@11.  
Sheep—Lb. gross weight: Fat, unshorn  
wethers, 14½@15; ewes, 12@12½; lambs,  
yearlings, 16@17; milk, 14@14½; shorn  
sheep, 1½@2 less.  
Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 16; 140 to 300 lbs., 17½; 300 to  
400 lbs., 17.

## POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks .....1.40@1.60  
River .....1.50@1.60  
Yakima Gems .....90@1.30  
Sweets .....5.00@7.00  
New, lb. ....4@5  
Seed—Wholesale, per 100 lbs.: Early  
Rose, British Queen, American Wonder,  
1.50@2.00; Burbank, low top, 1.50@1.75;  
high top, 1.50@1.75; Garnet Chile, 2.75@  
3.00; White Rose, 2.00@2.25; Early Jack-  
son, 2.50@3.00; inferior and off stocks at  
lower prices.

## ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....90@1.00  
Bermudas .....2.00@3.00  
Garlic, lb. ....3@3½

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. ....10@40  
Asparagus, lb. ....4@8  
Beets, sk. ....75@1.00  
Beans, lb., String, 20; Wax .....12½@15  
Carrots, sk. ....85@1.00  
Cauliflower, doz. ....30@60  
Celery, cr. ....2.00@2.25  
Cucumbers, bx. ....2.00@2.75  
Egg Plant, lb. ....5@12½  
Lettuce, cr. ....1.25@1.50  
Onions, green, bx. ....65@75  
Parsnips, sk. ....85@1.00  
Peas, lb. ....1@5½  
Peppers, Bell, lb., 5@15; Chile .....12½@15  
Pumpkins, sk. ....85@1.00  
Rhubarb, Straw, bx. ....75@1.25  
Squash, Cream, lug .....75@1.00  
San Jose .....1.00@1.25  
Summer, cr. ....1.25@1.50  
Spinach, cr. ....65@75  
Tomatoes .....1.50@2.75  
Turnips, sk. ....75

## FRESH FRUITS

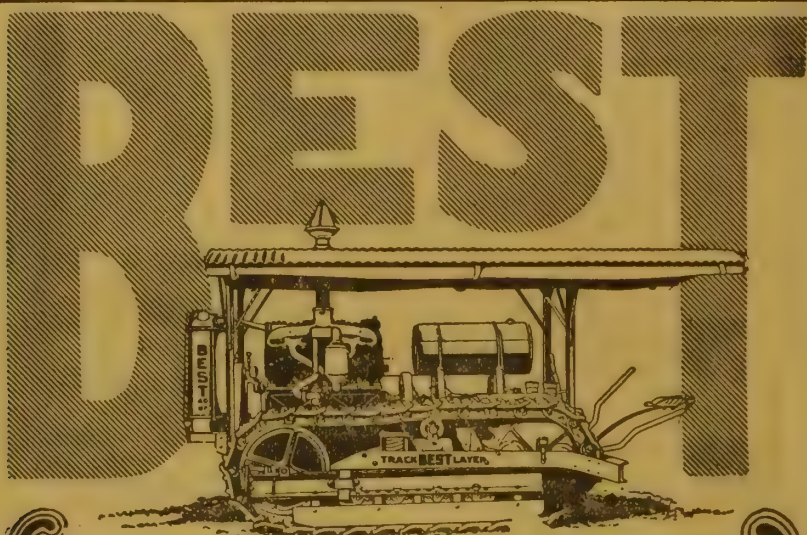
Apples—Spitzenberg, 1.50@2.00; Red  
1.00@1.50; Newton Pippins, 1.00@1.75.  
Pears—Winter Nellis bx., 1.50@2.25;  
winter pears, lug, 1.50@1.75.  
Avocados, doz. ....3.00@6.00  
Bananas, Hawaiian, lb. ....Nominal  
Loquats, lb. ....12½@15  
Pineapple, doz. ....Nominal  
Strawberries, ch. ....8.00@12.00  
Citrus Fruits—Lemons, bx., according  
to size, fy., 3.50@6.00; lemons, 3.50@  
4.50; grapefruit, fy., 2.50@3.25; ch., 2.00@  
2.50. Oranges—Bx., navel, 3.50@6.00; Va-  
lencias, from 100s to 228s, 5.25@6.00.

## DRIED FRUITS

Not producers' prices but prices of  
wholesaler to retailer.  
Peaches—Unpeeled, bulk basis, stand-  
ard, 10; ch. 10½; extra ch., 11; fy., 11½.  
Apricots—Bulk basis: Standard, 18½;  
ch., 15; extra ch., 15½; fy., 16½; extra fy.,  
17½; fy. Moorpark, 17½; extra fy., 18½.  
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8;  
40s, 8½; 30s, 9½.  
Apples—In 50-lb. bxs., lb.: Fy., 10; ex-  
tra ch., 15; ch., 16.  
Pears—Bulk basis, lb.: Fancy, 10½;  
ex. ch., 9; ch., 8½; standard, 7.  
Raisins—Cr.: Sun Maid, seeded, 10-oz.  
cartons, 4.20 for 48s and 6.15 for 36s; fy.,  
4.20 for 48s and 3.15 for 36s; do, 12-oz., 45  
to 50, 5.25; ch., 10-oz. cartons, 3.00 for  
36s; do, 12-oz. cartons, 45 to 50, 3.10.  
In bulk: Sundried, 1.75; fy., 1.90; ch.,  
1.75.  
Sulphur-bleached Thompsons, ex. fy.,  
5.37½; fy., 5.12½; ch., 4.87½; soda-  
bleached, 4.75.  
Loose: One-crown, 4.15; two-crown,  
3.40; three-crown, nominal; four-crown,  
3.20.

## NUTS

Almonds—Cal. Almond Growers' Exch.  
Gross prices: Nonpareils, 21½; I. X. L.,  
19½; Ne Plus, 18½; Drakes, 16; hard  
shell, 11½.  
Chestnuts, Cal. lb. ....10@30  
Peanuts, Va. ....18



## TRACKLAYER TRACTORS are SUPERIOR

THE man who purchases a product which he  
knows to be superior enjoys an extra sense of  
satisfaction. Purchasers of BEST tractors know  
that the BEST is superior. It has been demon-  
strated in farm and plantation work, and heavy  
hauling in the mountains and deserts throughout  
the world for many years as a superior product.

Scores of large concerns having had wide experience  
with various makes of tractors have standardized on  
the BEST.

For continuous service and increased net  
profits, buy the BEST.

**C. L. BEST GAS TRACTION CO.,** San Leandro, Cal.

C. L. Best, President. J. R. Buck, 2nd Vice Pres. and Treas.  
H. C. Montgomery, 1st V. Pres. and General Manager.

## Commercial Beans for Commerce

Plant the right variety in the right place:  
Pintos and Teparys away from the coast on mesa land, with or without irrigation.  
Hewitson Bush and Fordhook Limas on heavy or adobe soil.  
Limas and Blue Pod Navys on loam soil near the coast.  
Lady Washington on more sandy soil.  
Apply Westbrock to the seed when planted on sandy or loam soil.  
Plant only the New Mexican Pintos. We have a carload just received.

**AGGELER & MUSSER SEED CO.**

6th and Alameda Sts.

Los Angeles, Cal.

## ECONOMY STOCK POWDER

FOR HOGS, HORSES, CATTLE AND SHEEP

Eliminate Bloating, Abortion and any derangement of  
the system by feeding Economy Powder regularly. Will  
also check and eliminate calf scours.

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ECONOMY HOG AND CATTLE POWDER CO.

Hearst Bldg., San Francisco, Cal.

## HEREFORDS

A large herd of selected stock to choose from.  
Everything sold is guaranteed as represented.  
Why send East for breeding stock when we can supply your needs. Save  
time and money by writing us for particulars.

Cottrell &amp; Packard, Tempe, Arizona

Members Pacific Coast Hereford Breeders Association



Pecans, lb. ....19@20  
Pine Nuts .....22@25

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19; amber, 15.

BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....13.90@14.10  
Bayous .....9.00@9.25  
Small Whites .....Nominal  
Large Whites .....Nominal  
Mexican Reds .....9.40@9.60  
Blackeyes .....8.75@8.90  
Pinks .....8.00@8.15  
Red Kidney .....Nominal  
Cranberry .....Nominal  
Teparies .....10.50@11.00

RICE

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

HAY

Under date of April 20, Scott, Wagner & Miller says:  
Receipts past week 307 tons. There has been a fair demand for strictly choice wheat or red oat hay, and a few cars of these grades have been placed to advantage, but the ordinary and poorer grades of hay have had to take care of themselves as no one seems to be in the market for them. Especially so is the case with stock hay. The stock men are buying practically nothing and whatever hay of this description arrives must be sacrificed as there is plenty of grass on the hills for feed purposes.  
Alfalfa is in good supply and is being offered for sale quite freely. First crop of alfalfa and in some sections a little volunteer hay is being cut so a carload is likely to be in evidence most any time on the market.  
There is no demand for straw.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling must be added according to conditions.

Fancy Wheat Hay (light five wire bale) ....	27.00@28.00
No. 1 Wheat or Wheat and Oat Hay.....	24.00@26.00
No. 2 Wheat or Wheat and Oat Hay .....	21.00@24.00
Choice Tame Oat Hay .....	24.00@26.00
Other Tame Oat Hay .....	21.00@23.00
Wild Oat Hay .....	20.00@22.00
Barley Hay .....	20.00@23.00
Alfalfa .....	19.00@21.00
Stock Hay .....	15.00@17.00
No. 1 Barley Straw .....	50@80

GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

SEEDS

Prices in round lots, lb.:	
Millet, recleaned .....	5@5½
Alfalfa, lb. ....	20@21
Flax .....	7@7½
Hemp .....	5@5½
Rape .....	2½@3

Citrus Fruit Market

Los Angeles, April 24, 1918.

The slight sag of some days is being covered, and better prices are being obtained. Valencia's are now topping the market. Some decay has been shown but most stock is going forward in good condition.

Lemons are not high but warm weather will soon give the market an upward trend and the big crop is promised a cordial reception.

Shipments

Shipments of oranges to date from Southern California since November 1, 1917: 5901 cars; lemons, 2068; total, 7869. To same date last season: Oranges, 19,729; lemons, 3394; total, 23,123. From Central California to date: Oranges, 2384; lemons, 115; total, 2499. To same date last season: Oranges, 4062; lemons, 164; total, 4226. From Northern California to date: Oranges, 203; last year same date, 844.

AT THE AUCTIONS

April 17

New York: 19 oranges, 3 lem. Prices somewhat lower. Nav. 2.95-5.15, Seed. 3.25-6.20, Sweets 3.75-6.45, lem. 3.20-4.30, Tang halves 3.20-4.50.  
Philadelphia: 10 cars, Mikes 4.85-5.90, Seed. 3.65-5.45, Val. 5.25, lem. 5.10.  
St. Louis: 5 cars, Nav. 2.90-3.40, Val. 3.40-4.80, Seed. 3.45-5.05, lem. 2.45-5.15.

April 18

New York: 23 oranges, 2 lem. Market stronger. Nav. 2.75-6.45, Sweets 2.65-6.30, Mikes 3.95-6.60, Val. 5.60-7.35, lem. 3.00-3.80.  
Boston: 9 cars. Nav. 3.55-6.05.

April 19

Cincinnati: 4 cars, Nav. 4.10-5.25, Val. 4.10-6.10, lem. 5.05-5.45.  
St. Louis: 4 cars, Nav. 4.05-5.10, Val. 4.30-5.20, Sweets 4.15-4.55, lem. 2.85-3.65.

April 22

New York: 31 oranges, 2 lem. Nav. 2.75-6.30, Val. 4.30-7.40, Sweets 3.45-6.00, Mikes 4.25-6.35, Seeds. 3.85-5.25, lem. 3.00-4.30.  
Boston: 19 cars, Market higher. Nav. 2.00-6.30, Val. 4.45-6.60, Seeds. 4.40-5.80, Mikes 5.05-5.95, lem. 2.75-5.25.

Pittsburg: 8 cars, Nav. 2.95-5.25, Val. 3.25-5.65, Seeds. 2.90-5.25, lem. 1.50-4.55.  
Cleveland: 8 cars, Nav. 3.60-5.50, Val. 2.90-5.55, Seeds. 2.00-4.35, lem. 3.20-4.20.  
St. Louis: 3 cars, Nav. 3.20-3.85, Val. 5.30-6.15, Sweets 5.70, Seeds. 5.40, lem. 4.20-4.95.  
April 23  
New York: 21 oranges, 1 lem. Nav.

2.85-5.60, Val. 4.80-7.55, Seeds. 3.30-6.15, Sweets. 2.75-5.15, Mikes 4.95-5.35, lem. 3.70-4.30.  
Philadelphia: 7 cars, Nav. 3.00-4.60, Val. 3.50-5.80, Mikes 4.45-5.35, Seeds. 4.00-4.25, lem. 3.35-4.45.  
Boston: 11 cars, Nav. 4.15-5.30, Val. 4.20-6.15, Seeds. 3.75-4.60, lem. 5.20-6.10.

BERNSTEIN'S POLAND-CHINA SALE

Written for California Cultivator

The reduction sale of Poland-China hogs, held by W. Bernstein at Hanford, April 17, demonstrated the popularity of this well known herd. Sixty head sold for a total of \$4712, making an average of \$79.30 per head. The average was low because most of the animals sold were late fall pigs, but the older animals brought excellent prices.

The top boar was Young Jumbo, a son of R. H. Whitten's Jumbo Model, who went to W. L. Hoag & Son of Grangeville for \$400. They also secured a fine sow for \$125.

The next highest boar was King's Big Bone Leader, going to W. T. Dice of Fowler and Charles Gatewood & Son of Fresno for \$300.

The top sow, King's Rosebud 2nd, went to Mr. Dice for \$300. H. D. McCune secured a choice yearling sow in Rosebud Quality 1st, paying \$230, and A. Buckland & Son of Fresno took her litter mate at \$210.

Mrs. Leta L. Losleben of Visalia bought the largest number, securing nine head. H. N. Martin of Atwater purchased seven.

The other buyers included W. E. Martin, Visalia; W. L. Choisser, Riverdale; Howard C. Peterson, Reedley; F. E. Fay, Tipton; W. H. Richards, Visalia; Leo E. Hubbard, Lemoore; H. D. McCune, Lemoore; C. O. Gould, Carruthers; J. A. Raymond, Angiola; Walter C. Ficklin, Kerman; T. E. Cochran, Corcoran; J. Q. Martin, Atwater; G. B. Martin, Visalia; R. G. Hamblin, Kingsburg; A. J. Vanchif, Riverdale; M. M. Dyer, Chowchilla; and Dr. J. A. Crawshaw, William Hill, R. L. Waltz, John Bernstein, M. Bassett and F. V. Smith of Hanford.

An October gilt, donated by Mr. Bernstein to the Red Cross, was purchased by Dr. J. A. Crawshaw for \$72.50.

GERMAIN'S MOVES TO BIG NEW QUARTERS

The Germain Seed and Plant Company has leased spacious quarters on the first floor of the Kerckhoff Building at the northeast corner of Sixth and Main streets, Los Angeles, which will be occupied about July 1, exclusively by the retail department of the company. This department embraces vegetable and flower seeds, poultry supplies, insecticides, fertilizers and a nursery department limited to small vegetable plants and small ornamental trees and shrubs. The removal to Sixth and Main was made imperative by the wonderful growth of the business during the past five years. The present quarters at 326-330 South Main Street are greatly overcrowded.

The wholesale and jobbing business of the company will be conducted in large, specially arranged quarters in the Los Angeles Union Terminal Building. A space 127½ by 100 feet, and seven stories high, has been taken. The large seed experimental and trial grounds, and also the large nursery of the company on the Whittier road, will be maintained. The Germain Seed and Plant Company is one of the largest seed establishments in America. It was founded in 1871 by Eugene Germain, who was one of the early pioneers of Los Angeles.

WEATHER CONDITIONS

Stations	Rainfall		Temp.
	Wk.	Season. Norm.	
Eureka .....	.02	24.01	41.35
Red Bluff .....	.00	11.91	22.69
Sacramento .....	.00	10.58	18.43
San Francisco .....	.00	11.48	20.88
San Jose .....	.00	9.35	15.72
Fresno .....	.00	9.75	8.57
San Luis Obispo .....	.00	17.05	18.77
Los Angeles .....	.00	18.42	14.87
San Diego .....	.00	7.91	9.36

Rip? Never!

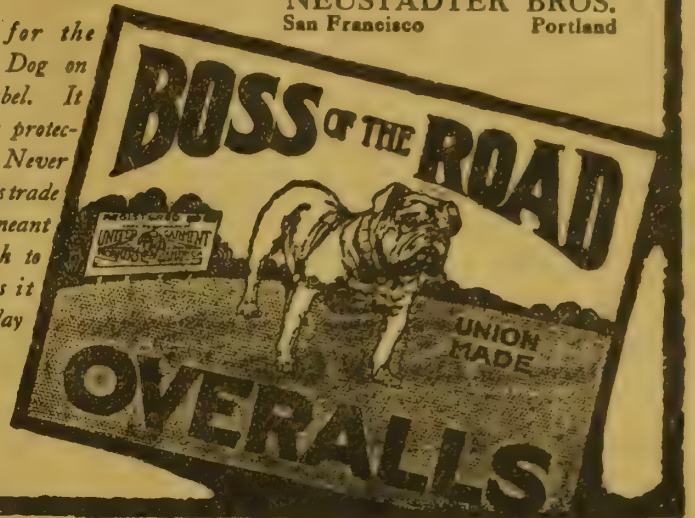
You wouldn't expect your Boss of the Road Overalls to rip. You know better. The seams are so stoutly stitched that they last the life of the garment.

Other features you've come to like so well: big, swinging pockets—roomy but not baggy; hold-fast, patent buttons; reinforced strain points; extra full seat insuring comfort and ease; wide cut legs so you can pull 'em on over woolen pants. Altogether the best-wearing, best-fitting work garment you can get.

That's why it is *always* economy to buy Boss of the Road Overalls—a Neustadter product.

NEUSTADTER BROS.  
San Francisco Portland

Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today



Hercules Engines

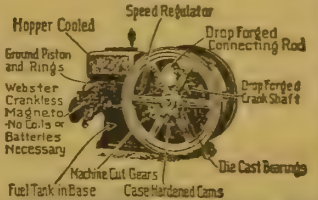
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Land will only produce LARGE AND PROFITABLE CROPS when sufficiently irrigated.

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Submit your pumping problems to us.

DEALERS: We have a very liberal proposition for unoccupied territory—write us.



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The Pump and Engine House of the Pacific Coast  
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Write for Illustrated Price List.

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Can make immediate delivery

Body made from single sheet of galvanized open hearth steel, ten feet long, with extra heavy taper collar on one end and band of heavy steel on the other—making each section 10½ feet; made with lock seam (four thicknesses of steel), which gives unusual strength and durability, besides absolute proof against leakage. Manufactured by

WOOLWINE METAL PRODUCTS COMPANY  
Eighth Street and Santa Fe Avenue, Los Angeles, Cal. Phones—F1088—Pico 3600

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Pipe, Pipe Fittings, Brass Goods, Tanks, Wind Mills.



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# United States Tires



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# CALIFORNIA CULTIVATOR

and *LIVESTOCK* and *DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

May 4, 1918

SAN FRANCISCO

## Corn Sure Does Grow in California



California Should Grow More Than 2,000,000 Bushels. It Will This Year. One Concern in This State Uses Monthly in Excess of 1000 Tons of Corn, Mostly Imported at \$11.00 Freight Per Ton.



# Model Bean Cultivator



Killefer Quality



Killefer Efficiency

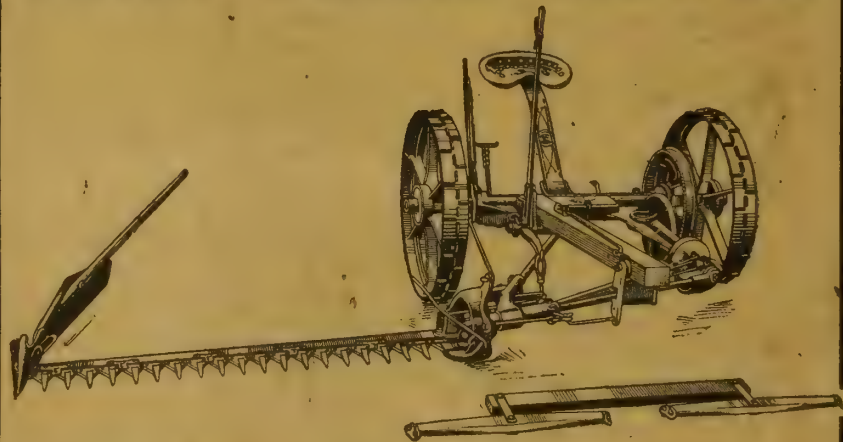


This Cultivator, like most of our implements, has been developed at the request of Dealers and Ranchers for a strong, simply constructed cultivator, capable of doing their work deeper and better than possible with the light Eastern-made tools. The frame is one piece of high carbon steel without joints to work loose or sag and holds the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device which holds it rigidly on both sides. A man's weight on the extreme end will not spring it out of line. The seat is set far enough back to give an unobstructed view of the rows and the foot control is very easy on the driver.

An important item for the Bean Growers' consideration is that all parts and repairs are easily and quickly obtained without the delay of sending East for them.

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# JOHN DEERE MOWER



The Simplest and Strongest Mower on Market

**A. F. GEORGE CO.**

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Gould's Centrifugal  
**PUMPS**

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**MOTORS**

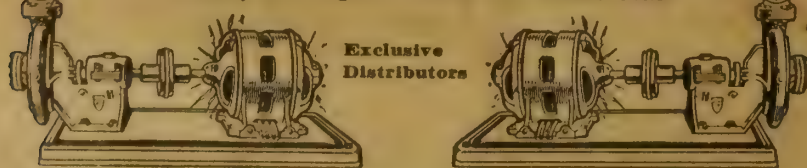
Will help You to raise larger and more profitable crops

Insure against drought. Give your land sufficient water independent of the rains. Let Goulds and Crocker Wheeler Units do your pumping economically.

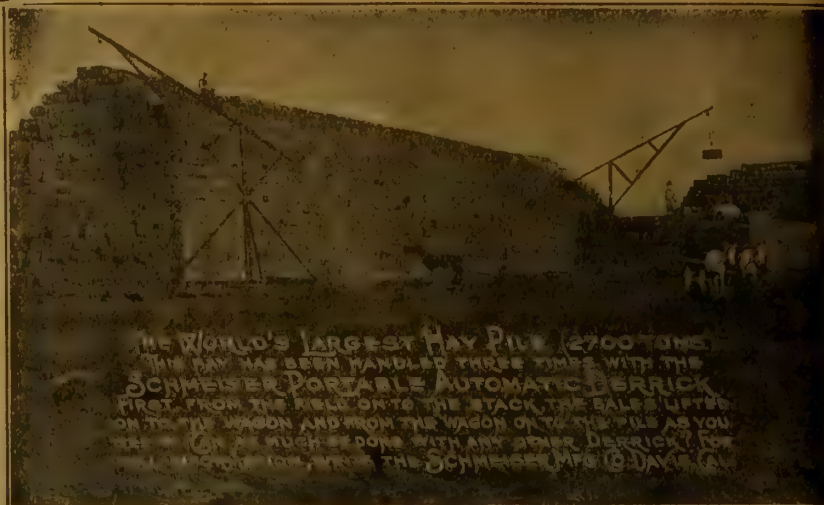
Don't delay—Submit us your pumping problems. Write or call now for information.

DEALERS:—Write for Unoccupied Territory.

**SMITH-BOOTH-USHER CO., Los Angeles**  
The Pump and Engine House of the Pacific Coast



# "The Schmeiser Way Makes the Farm Pay"



If you are paying more than 35 cents per ton for stacking your hay, you are losing money. You can stack it for less than that if you use the

**Schmeiser Improved Portable Automatic Derrick**

Will Do the Work of 12 Men

**"The World's Greatest Hay Stacker"**

Stacks hay baled or loose, Saves Labor, Saves Time, Saves Money. More Schmeiser Portable Automatic Derricks are sold on the Pacific Coast than all other hay stackers combined. The reason is:

**"The Schmeiser Way Makes the Farm Pay"**

For particulars, write today to

**Schmeiser Manufacturing Company**

22 Mechanic St., Davis, California

Manufacturers of  
Sure Pop Almond Huller and Separator, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises; Schmeiser Alfalfa Land Leveler and Checker. Wooden and Steel Checkers with Swivel Wheels, and

**Schmeiser Improved Portable Automatic Derrick**

WE SELL MARTIN DITCHERS.

# Get 'em Quick!

Rid your place of squirrels, gophers, prairie dogs, etc. Do it now when the young of these crop-destroying pests are being born. It's easy and cheap—when the ground is full of moisture to

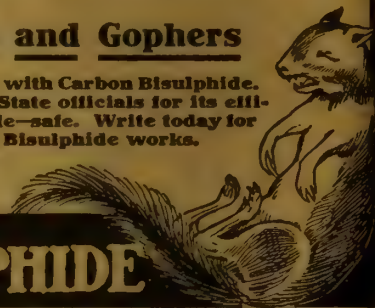
**Exterminate Squirrels and Gophers**

and other rodent pests. Just gas them with Carbon Bisulphide. Used and recommended by U. S. and State officials for its efficiency and economy. Simple to handle—safe. Write today for prices and folder telling how Carbon Bisulphide works.

**WHEELER, REYNOLDS & STAUFFER**

626 California St., San Francisco, Cal.

with  
**CARBON BISULPHIDE**



**Quality**

—yes, and top notch quality is built into

every roll of Pioneer Roofing.

Made of the best materials by the most expert artisans in a modern up-to-date factory by a company with an experience of 30 successful years—these are reasons why

you should specify and demand this roofing of proven quality.

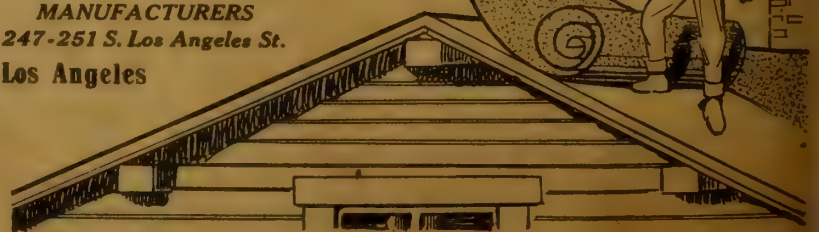
**Pioneer Roofing**

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Los Angeles





## Prevent Hog Cholera Losses

Feeds are High, Market is Strong, Demand is Insistent for More Pork. High Cost Feeds Will Not Permit Swine Disease Losses and Leave Profit. Clean Up the Cholera. The Serum-Virus Method is a Success

**I**N the live stock industry there is no disease more dreaded than hog cholera. It is so little understood, even after three-quarters of a century of history in this country, that the subject has but to be mentioned in scientific circles and a general discussion is quickly taken up. In fact, the name itself is said to be a misnomer, for as cholera is understood in human beings it is entirely different from the so-called hog cholera. Some scientists have in-

"The 13 years, from 1833 to 1845, inclusive, form a period of years in which but ten swine diseases, supposed by the writers to have been hog cholera, were mentioned in these replies. It is evident that during this period hogs were generally healthy throughout the country and that the losses from disease were not sufficient to attract much attention. The nature of the disease referred to as existing so long ago, may, of course, be questioned at this day, and we have no means of deciding whether or not

been issuing information in the form of bulletins and circulars for nearly a score of years. One of the first is Circular No. 3 by A. R. Ward, giving symptoms and instruction as to how the disease is spread. Other publications are Circulars No. 68, Prevention of Hog Cholera; No. 89, Hog Cholera and its Prevention, No. 106, Direction for Using Anti-Hog Cholera Serum, No. 132, When to Vaccinate, No. 176, Hog Cholera Prevention and the Serum Treatment; Bulletin 229, Cholera Prevention and Preventive Serum.

These may all be secured by request to Agricultural Experiment Station, University of California. In addition the United States department of agriculture has issued many bulletins and circulars touching every phase of this disease and its control, as have also the licensed commercial laboratories.

A word as to treatment. Unless the breeder has at least a measure of technical knowledge on the use of the needle and the nature of the disease and, in addition, is an extremely careful worker, treatment should be placed in the hands of a qualified veterinarian.

On this point the United States Live Stock Sanitary Association has resolved: "In our opinion serum should be used only by competent practicing veterinarians. The use of serum by farmers and incompetent laymen should be discouraged as far as possible."

Laboratories engaged in the manufacture of serum and virus are maintained by nearly every experiment station, but 90 per cent of the serum and virus used is produced by licensed laboratories which make it their entire business to supply these biological products. Their licenses are issued by the United States Bureau of Animal Industry, and the establishments are under the constant inspection of agents of the bureau.

Only indifference or negligence on the part of the swine breeder is the occasion for an outbreak of hog chol-

era in these days when every pound of pork possible should be produced.

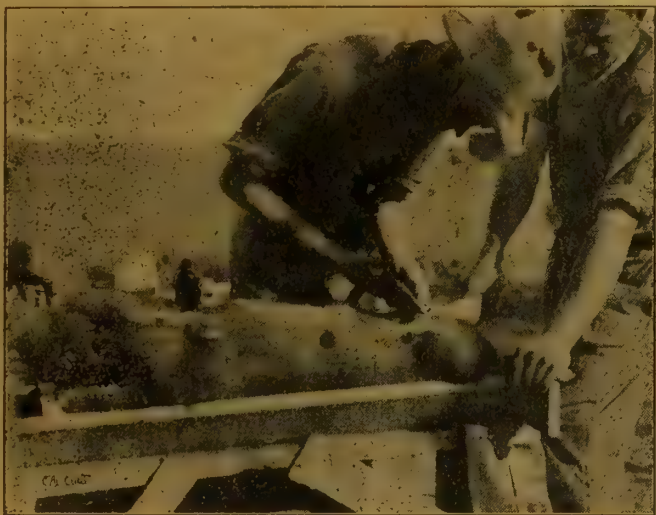
Hog cholera serum has given to itself a bad name at times because of its lacking effectiveness or because of complications which have arisen after its use. For some time scientists have referred to sterilized serum, and some laboratories are now putting out both the ordinary type, or defibrinated blood known as bloody serum, and the sterile, germ-free type. We believe that a time will come when the government will insist on the marketing of sterile serum in inter-state trade, for it cannot control distribution in intra-state trade. It possesses very definite advantages over the other and these advantages are summarized by the Cutter laboratory, which is producing both kinds of serum, as follows:

1. Greater absorbability. The removal of all the solid constituents of the blood from the sterile product makes for rapid absorption. Slow absorption frequently produces discoloration of the meat around the site of injection, and if the animal should be killed before this absorption has completely taken place this discoloration would show in the dressed meat and affect the sale price.

2. The sterile serum is 20 per cent more effective, volume for volume, because of the elimination of those solid constituents that have no immunizing value.

3. The sterile serum has better keeping qualities for being sterile it cannot undergo change, and it can be kept for a period of about two years without being refrigerated.

4. It absolutely does away with the danger of abscesses, and abscesses incident to the use of an insterile or contaminated serum have the effect of stunting the animals and frequently destroying a whole ham. It is true that we have never had an abscess reported following the use of our defibrinated blood serum, but it is also true that abscesses have not uncommonly followed the use of insterile serum in the past.



Practical Hog Cholera Prevention

The administering of serum and virus calls for expert work. Be sure that your pigs are immunized by a man who thoroughly understands his work and the necessity for extreme care and cleanliness. Provide "trough" or bench for the young pig, which enables perfect control. Note iron band at lower left corner of engraving, under which pig's nose is put. Then, with two attendants, the pig is held perfectly quiet, while the operator can work with certainty.

isted upon "pig typhoid" as the more proper term. But the name has been so long and so generally applied that it will doubtless always remain.

When the disease was first noticed and described there was little agreement among medical men and veterinarians as to the cause, the means of dissemination, or as to whether there were not several different diseases included under the one term, hog cholera, as claimed by some, or whether there was one disease with different manifestations, as claimed by others, and the results of the earlier investigations of the disease by the modern methods of bacteriological research, conducted by the most competent authorities, were conflicting.

As to history, we note the following in the Fourth and Fifth Annual Reports of the Bureau of Animal Industry for the years 1887 and 1888.

"The first outbreak of the disease supposed to be hog cholera that is referred to occurred in Ohio in 1833. It was reported from one county in South Carolina in 1837 and from one in Georgia as having existed in 1838. It existed in 1840 in one county in Alabama, one in Florida, one in Illinois and one in Indiana. In 1843 it is reported from one county in North Carolina. In 1844 one county of New York reports being affected. Its presence in 1845 is only mentioned by one correspondent from Kentucky.

any particular outbreak was cholera or some non-contagious malady due to local conditions. It is reasonable to conclude, however, that the correspondents (from whom this information was gathered) were correct in their opinion in most cases, because, since 1845, the outbreaks mentioned became more numerous year by year until we find nearly the whole country involved. This rapid increase of the number of affected sections seems to indicate that a contagious disease had been introduced and carried to widely separated sections of the country from which it extended until, with a year favorable to its propagation, we find a sudden and alarming increase.

"Whether the outbreak which occurred in Ohio in 1833 was the first introduction of hog cholera in this country or not cannot now be determined. It seems reasonably certain, however, that the contagion was imported from Europe with some of the animals that were brought from there to improve our breeds of swine. Having once been introduced it spread gradually, following the lines of commerce and being a long time confined to them, until extending step by step, it has at one time or another invaded every section of the country in which swine raising is a prominent industry."

In this state the agricultural experiment station of the university has



Table with Syringes and Appliances

With clean paper cover and bottles conveniently arranged work of treating hogs is facilitated.



# Farm for Profit

## and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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Uplands  
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You may be the man we are looking for if you can sell Fertilizer Materials successfully.

ADDRESS



Fertilizer Dept.

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California

**CITRUS Seed Bed Stock** Sour Orange Seed Bed Stock, strong, thrifty, one year plants 10 inches and up. Absolutely free of scale.  
**Walker-Hubbard Nursery Co.**  
San Fernando, Cal. Office First National Bank Bldg.

# LIME

Pulverized Limestone .....\$3.35 Per ton  
Ground Limestone.....\$2.50 Per ton

This is the One Element Lacking in Most California Soils. Write for Booklet  
**Riverside Portland Cement Co.**  
640 Title Insurance Bldg., Los Angeles, Cal.

When writing advertisers, mention The Cultivator.

## Another Philippine Citrus Fruit

By P. J. Wester, Agricultural Adviser, Department of Mindanao and Sulu

**T**HE Philippines already hold first rank in the number of indigenous forms of the genus Citrus, several of which are additions to the citrus fruits, others being merely of botanical interest, and this very fact is a promise of discovery of still unrecorded species in the less explored regions of the Archipelago. Aside from a purely botanical point of view, new forms are at present also of great interest to the fruit grower and plant breeder as opening up new possibilities in hybridization, especially in connection with the problem of breeding new types resistant or immune to the citrus canker, *Pseudomonas citri* Hasse.

The "miaray" described and named below was found by the writer in August, 1917, in Impolutao in the interior of the Province of Bukidnon, Mindanao, at an elevation of 750 meters.

With its willowy, slender, drooping branches and dense crown of dark-green foliage, the miaray (pronounced meearay) is an exceedingly handsome ornamental tree. The fruit is about the size of a lime, not unlike an immature orange, usually growing singly in the axils of the leaves. It is pleasantly acid and may be used like the lime. The pubescence on the twigs is one of the interesting features of the miaray in a genus where nearly all species are glabrous. The foliage is more reminiscent of the mandarin than any other species and it is hoped that this apparently new form will prove as resistant to the citrus canker as the mandarin.

The clean, vigorous growth of the tree indicates that it is likely to prove a desirable stock for other cultivated varieties of the citrus fruits.

While too much reliance cannot be placed on this statement it is said by the native inhabitants in Impolutao that the miaray grows wild in the forests of Bukidnon, whence it has been brought under cultivation, and it is said to be grown in various other municipalities of the province. At any rate, the writer, who has devoted considerable time to the study of the Philippine citrus fruits, has never found this form in any other part of the Islands, and he believes it sufficiently distinct from all others to deserve rank as a separate species.

### Miaray

A handsome tree about six meters in height, with a dense crown of dark green foliage and slender, willowy, drooping branches; young growth pubescent, the hairs remaining on the twigs and the midrib beneath even some time after those attain maturity; spines small and rather weak frequently absent; leaves averaging 8 to 12 centimeters in length, rarely exceeding 16 centimeters, 35 rarely more than 55 millimeters wide, elliptical oblong or ovate to lanceolate somewhat undulate, more conspicuously crenate on apical half; base broadly acute; apex almost caudate slightly margined. Flowers not seen. Fruits axillary, usually solitary, rarely germinate, 32 to 38 millimeter long, 35 to 40 millimeters in equatorial diameter; form slightly oblate compressed toward base, flattened at apex, commonly with a slight circular depression around stigmatic area; skin medium thick, smooth, adhering to flesh; locules nearly always 10, very rarely 9, adherent to each other; juice cells rather small; flesh greenish gray, sharply but pleasantly acid rather recalling the lemon; juice quite abundant; seeds comparatively large.

## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Sugar Beet Lime

In your issue of April 6 answering question "Lime or Lime Rock, Which is Best?" you state that sugar beet lime carries a very small proportion of phosphoric acid and humus material. I have been told by furnishers of sugar beet lime that it carries about the following: Organic matter six per cent, phosphoric acid .53 per cent, nitrogen .33 per cent, potash .56 per cent. Will you please state if an average analysis would contain about the above, and what might be average moisture content. How would price average in comparison with ground limestone?—Subscriber, Porterville.

This question was submitted to R. R. Snowden, who answers:

"The mineral content of sugar beet lime varies with the locality where the beets are grown. For instance, the lime produced at Huntington Beach will show different fertilizer

element percentages from that produced at Chino. This I think is due to different analysis of plants grown under different conditions of soil and tillage. In my judgment, unit for unit of actual lime, the sugar beet lime is worth 25 per cent more than the ground limestone on account of mechanical condition; but look out for the high moisture content in the former, which is often 30 per cent and more. To make a just comparison not only the moisture should be deducted, but the cost of freight and handling of this water should be taken into account, since this is large."

### Peanut Shucks or "Pops"

I don't think that you have given the correct answer to question as to peanut shucks, or as the peanut raisers of Virginia call them, "pops," on page 365 of the Cultivator of March 23. In the peanut sections of Virginia pops are laid to a shortage of lime in the soil and large quantities of lime



University Farm Picnic, 1918

One little section on the 800 acre farm of the University of California, in Yolo County. The Cultivator camera was located on the edge of the big administration building and looking down on thousands of automobiles and a few of the thousands of people attending this greatest of California farm gatherings. It may be noted that this picture is made up of three small photos.





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or marl are used for growing the large nuts; also the lighter soils are used. The best crops I ever saw grown there were grown in a very drouthy year. I grew at the rate of 80 bushels, or 2400 pounds, per acre that year, and crops of 100 bushels of the large nuts were reported that year.

I have found that the small bunch or Spanish nut will grow and fill on almost any soil, and it is a much richer, more tender nut, contains more oil, is more easily digested and is the nut that is generally used for nut butter and salted peanuts. I have grown them here in San Diego County on uplands without irrigation and they filled perfectly. Last year a neighbor grew them with the large, or Virginia, nuts under irrigation, and while from 30 to 50 per cent of the large kind were pops the Spanish filled perfectly.

I raised in a young orange grove of one acre in the San Gabriel Valley 700 pounds of fine Spanish nuts planted after June 1st, and in that locality neighbors reported the large nuts a failure.

So you see it is more a case of growing the kinds that will do well on your soil, and the Spanish will succeed here in Southern California on all but the heavy clays, and they can be planted from March 15 to June 1. They should be planted and cultivated just as beans are, but care should be taken not to cultivate close to plants after they begin to set nuts.

We can all make our own nut butter and the peanut can be used in almost as many ways as cream or butter can.—A. F. Ames, Fallbrook.

### Water Glass

In the Cultivator of April 13 I read directions for preserving eggs in water glass. I have inquired at poultry supply houses but they say they never heard of any such thing. Please inform me where I can purchase water glass.—Subscriber, Etiwanda.

Water glass is the common name for sodium silicate and the one by which it is almost invariably ordered from druggists, grocers, or dealers in poultry supplies. Perhaps your dealers handle it under the former name.

### Residue from Acetylene Tank

We have an acetylene gas plant, Model B, in which we place calcium carbide into the feed generator. We buy 100 pounds. The residue is a white thick milky substance, and I would like to know if this substance can be put to any beneficial use.—Subscriber.

The residue has a value in that it is rich in lime and lime is valuable for most of our soils. Probably the better way would be to pour out in shallow pool and when dried it could be pulverized and scattered on the land. We have not heard of its being mixed with sand or soil before drying, but it is possible this would permit of easier pulverizing.

### TIMES CHANGE

With the sickle a man could harvest half an acre a day.

With the scythe a man could harvest one acre a day.

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California is now ranked as one of the cotton producing states of the Union. The entire output ginned in the United States in 1917 was 11,231,263 bales, of which California produced 56,810 bales. Texas is the big cotton grower; last year producing over 3,000,000 bales.



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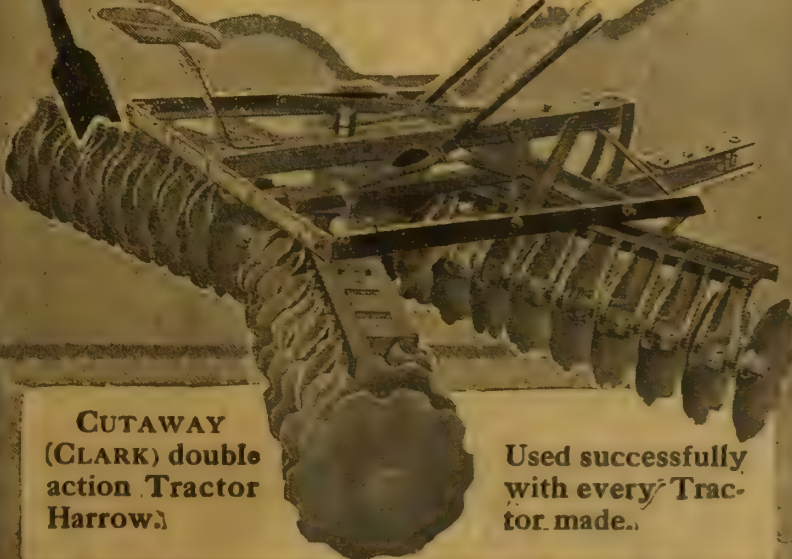
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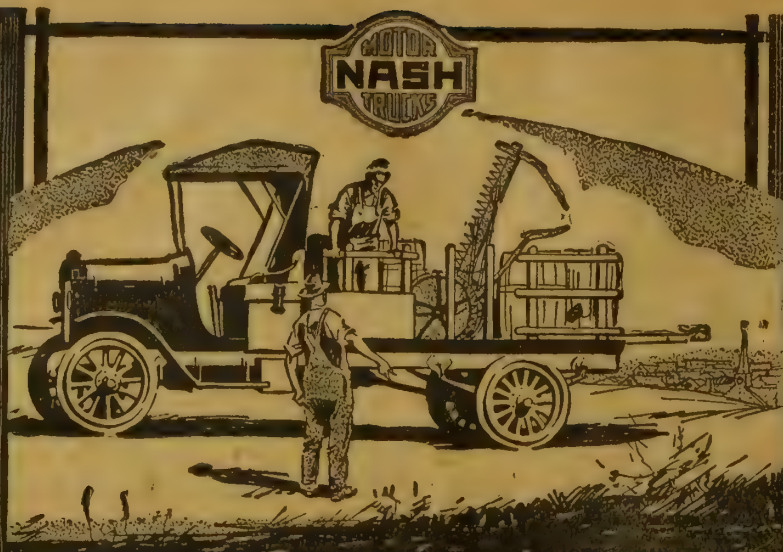
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## Fruit Crop Report

**S**INCE last issue some of our contributors have revised downward their first figures. Weather conditions not the most favorable at a critical time have slightly shaded former estimates. In the main California now has reasonable assurance of a good crop of deciduous fruit and nuts.

Aratus Everett, Moorpark, Ventura County

Since writing you a week ago the apricots in this vicinity have been dropping more than we anticipated. The crop will likely be from 60 to 75 per cent of normal instead of the former estimate I made to you of 100 per cent.

G. W. Harney, Horticultural Commissioner, Yuba County

Apricots 30 per cent, almonds 20, peaches and prunes normal.

Thompson Seedless grapes are showing enormous crop on old vines. Young vines seem to show some damage.

F. W. Waite, Horticultural Commissioner, Imperial County

Apricots show a 60 per cent crop, loss being caused by rain while in bloom.

A. Hancock, Bakersfield, Kern County

Apricots 90 per cent, peaches 95, almonds 90, prunes 90.

The fruit situation for Kern County is good. I believe all kinds of fruit are in good condition, and although they bloomed late are growing fast and catching up, and think will ripen about usual time. I have found only one thing less than full crop and that is the early apricots (Newcastle) but the late ones are very heavy. Medium ones good average crop. The prospects are really for a full crop but so as to err on the safe side I have placed it about 90 per cent.

Fred K. Howard, Commissioner of Horticulture, Kings County

Kindly revise recent crop estimate of apricot crop to read 75 per cent of normal.

E. S. Norton, Inspector Horticultural Commission, Sutter County

Making a rough guess at the true fruit outlook in Sutter County for the ensuing year. The almond crop has been estimated at 60 per cent of a normal crop; cherries promise nearly a full crop; peaches vary according to variety—some have a full crop, others are much lighter; apricots have set well, but there is a probability of many dropping later on; prunes have set well, but they are now in their critical stage, so it is not safe to report definitely on them just now. There are many conditions that may change the crop estimate later. But this is my best guess today.

F. C. Brosius, Horticultural Commissioner, Sacramento County

In re your inquiry for crop conditions at the present time, it is rather early, but the following is the estimated condition at this date: Apricots 90 per cent, peaches 75, almonds 85, cherries 90, all prunes 75, berries 100, pears 100. The heavy frosts the last of March was the cause of shortage of peaches and prunes.

D. D. Sharp, Horticultural Commissioner, Riverside County

Apricots 75 per cent, peaches 90, almonds 100, cherries 100, prunes 90.

M. Sharpe, Vacaville, Solano County

Apricots 50 per cent, peaches 75, almonds 50, cherries 125, prunes possibly 75.

J. W. Mills, Farm Adviser Solano County

Apricots are very spotted, some places being a full crop and other places less than half so you had better figure on about 60 per cent. Peaches are a full crop, almonds about 60 per cent. Cherries better than last year and prunes less than 50 per cent.

Geo. C. Nevins, Hemet, Riverside County

Our recent 'quake experience has so overshadowed our fruit interests that it is difficult to get back to orchard conditions. While most of the brick

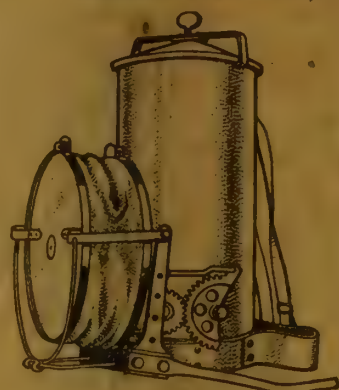
buildings are ruined, and many of the chimneys of frame residences are on the ground, fruit trees are promising their best.

The apricot orchards that bore heavily last season will have only 50 to 60 per cent of a crop, but the many orchards that were shy last year are full (100 per cent), and the many young trees coming into bearing will more than make up for any shortage in some of the old orchards so we look for more cots than the Hemet region has ever before produced. Peaches will probably be good for more than 100 per cent of normal crop. Oranges are blooming full, and walnuts are good, older orchards, 80 to 90 per cent, and more young trees just beginning to fruit. No almonds, cherries, nor prunes grown here.

Lester C. Reed, Simi, Ventura County

In regard to your inquiry will say

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think 80 per cent of a normal crop a fair estimated for the Simi Valley. Some orchards have 100 per cent crops, while others which blossomed late have only 60 per cent. I have been in nearly every apricot section of the county and I find it all very much the same way. There has been a heavy drop due to some unknown cause, it being especially bad among the late blossoms.

Chamber of Commerce, Paso Robles, San Luis Obispo County

Apricots, peaches and almonds show a 75 per cent crop this year. Cherries

show a 100 per cent crop, and prunes indicate an 85 per cent crop this season.

A. A. Brock, Horticultural Commissioner, Ventura County

We now expect about 70 per cent of a normal apricot crop. In some sections there will be fully 100 per cent while in other sections it is very probable there will be 50 per cent. In fact in some orchards, so I have been informed by my inspectors, it is almost impossible to find a single cot.

I have no information of the peach, almond and cherry, which are all of minor importance in this county.

close early in May, open again early in July, and continue only until a need for the youngsters develops, as determined by a committee of farmers; when a six weeks vacation will be declared to permit the youngsters to work in the fruit harvest in the county.

One hundred fifty Napa business men have signed up to do a week's work in the fields whenever called upon, while St. Helena offers one hundred more. It is believed that these numbers can be doubled if the demand becomes pressing. A local labor exchange, run by the farm bureau, will carry ads in the local papers and already has a bulletin board at the court house posted with notices. Sixteen local agents report to the labor committee and form a network organization through the entire county.

Vacaville, early anticipating its coming needs, is arranging to hire a local man for labor generally, who will be charged with the organizing of two big camps to handle 100 people each. These are to be provided with showers and patent toilets, electric lights and other reasonable conveniences. These people fully realize to get good help and keep them, comfortable camps and conditions must be established.

Growers from Contra Costa County have arranged to meet the representatives of the San Francisco Y. M. C. A.

with a view to taking a camp of boys for their peak load season. Continued next week.

## Farm Help for the Coming Harvest

Written for California Cultivator By R. L. Adams, State Farm Labor Agent

The questions foremost in the minds of all who are interested in the farm labor situation for this season are:

1. Is there an actual shortage, and
2. If so, how is it to be met?

A survey conducted by my office during the months of February and March shows that a shortage above the supply of workers in sight may be expected to the extent of 12,000 men during August and September, — the "peak load" of farm labor demands in this state. Starting with a small shortage in February, the increasing demand for man power rapidly mounts to this figure of 12,000 for the two months given.

After September the need rapidly declines until an estimated shortage of 800 in December marks the low limit.

Any estimate of coming shortage is necessarily largely a matter of opinion since changes in weather conditions, demands by other industrial activities and increase of supply through unexpected sources will change the situation. These figures represent, however, the best opinion of men qualified to pass upon matters of this kind and too much emphasis cannot be placed upon the fact that a shortage is imminent and to meet this shortage everything must be done to result in the obtaining of additional workers.

As we see it, there are only two ways of meeting the situation. The first is by the better utilization of present available sources, and the other is by importation of labor from other countries.

Taking up the importation of labor, first, it may be said in passing that of all the countries investigated as a part of our 1917 work, that Mexico and China are the only two having a surplus. For reasons known to all, Mexico at the present time is the only one of these countries from which labor can be drawn.

By a working agreement with the United States department of labor and living up to their requirements, it is possible to obtain Mexicans but importation is expensive and beset with numerous difficulties. Even at that, some importation is in my opinion bound to be necessary for kinds of work and certain sections where our own people will not or cannot readily adapt themselves to conditions.

The only other method is better utilization of our available supplies. This includes the various movements to utilize more extensively women, high school boys, city dwellers, retired farmers and men now engaged in non-essential enterprises who can be released for farm work and other industrial occupations of a nature necessary to the conduct of the war.

Following a series of meetings scattered over the state, the situation seems to crystallize itself into two points of view. Railroads, farmers, and to some extent this office, are convinced that while much can be done toward better utilization of labor, some importation over and above this available labor is needed. Organized labor, guardians of public welfare, and many individuals, believe that the situation can be largely, if not wholly, met by redistribution and full use of the labor within our borders. That the matter must go through another season to demonstrate more clearly than has as yet been the case which opinion is correct, seems a foregone conclusion.

Certain it is, that extensive interest in the whole general use of labor

heretofore not seriously considered will be a part of the 1918 program and is beyond question.

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2. By voluntary agreement of business men to go out into the fields for one week's time whenever called upon.

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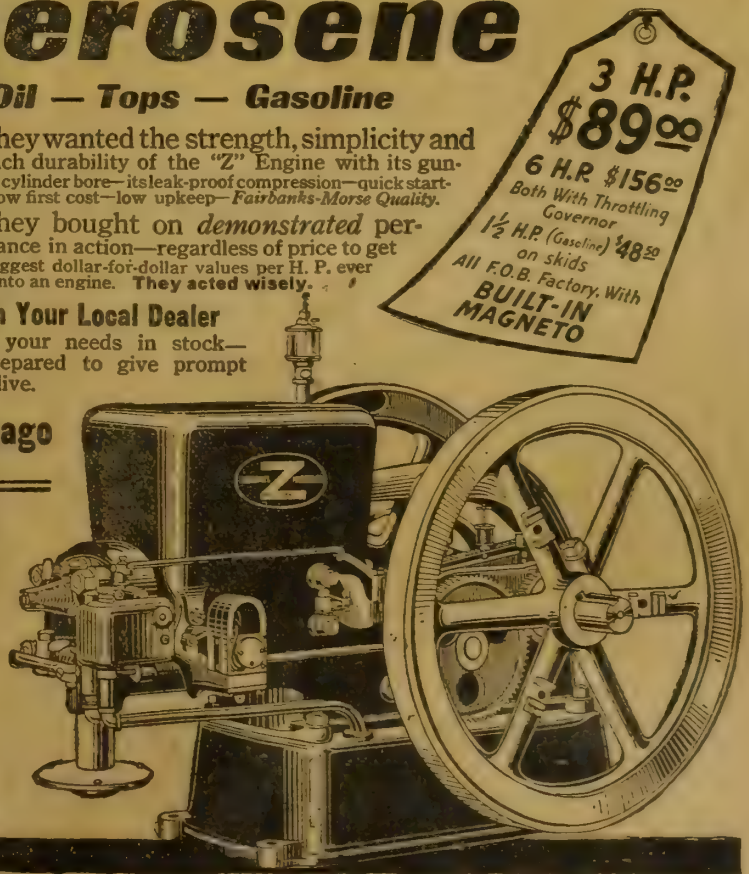
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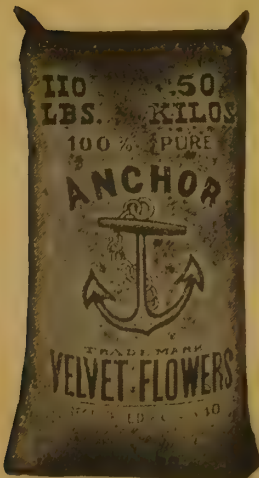
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## This Month in the Ornamental Garden Northern California

Written for California Cultivator By A. R. Gould



HERE has been quite a spell of hot weather during the month just passed, and the dry winds also helped to keep us very busy with the hose and we shall find it necessary to use the hoe and small cultivating tools to keep the surface of the flower beds in shape. Special care and attention should be given to the lawns just now, especially to those newly sown, as they must not be allowed to dry out and they should be kept very free from weeds. Those who are anxious to impart a fresh green appearance to their old lawn should apply an artificial manure. Never use farmyard manure unless you wish to introduce an endless crops of weeds.

### Planting Out

This term is full of meaning, and we wish to convey the fact that this month's work will be very important and will mean a gay garden if we utilize our space for planting showy annuals. The following should be planted during the month: Sunflower, large flowering and miniature grandiflora type; marigold, African tall and dwarf French types; dianthus, mixed; antirrhinums (snapdragons), in named varieties in solid beds of color; centaurea cyanus or cornflower and sweet sultan; cosmos, early varieties and the new double types, the latter being a great acquisition; gaillardia, double annual type; chrysanthemum coronarium, white and tricolor mixed; calliopsis, Golden Wave and the dwarf types, Tiger, Star, Beauty and Crimson King; candytuft, the giant hyacinth flowered form; zinnias in variety; stock, Ten-week and asters in solid colors, Comet and Crego's. The single type of asters are also very pretty.

See that the bed or border is fairly moist at the time of planting and choose the evening or early morning for the work. Keep the sprinkler going for some time after and satisfy yourself that the plants are put in firmly.

### Edging Plants

There is quite an assortment of edging plants, the most popular being

Golden Feather pyrethrum, lobelia, ageratum, violas, alyssum and echeveria. Some of these subjects are also used as a groundwork for some solid color effects. In fact we recently interplanted antirrhinum "Fiery Cross" with Ageratum Mauve Beauty, and should it so happen that the Antirrhinum or Snapdragon only gets a bad attack of "rust" and thus gives us only a short flowering season we shall remove it and still have a fine color display until frost. It is advisable to use some good judgment in selecting an edging for flower beds of solid colors, blue Lobelia would for instance go very well with a bed of white or rose pink asters, and it would also look well with deep yellow shades. Violas, blue, make an excellent edging to a bed of red roses. Echeverias are succulent plants and do very well in a dry situation; they are used mostly in formal or carpet bedding.

### Dahlias

The ground should have been well prepared for these and all tubers should be planted this month; also the young plants raised from seed. If you wish to propagate from a certain variety take the first shoots from the tuber when two inches or so in length and after making the "cutting" insert in sand where if kept moist it will root readily.

### Chrysanthemums

Cuttings of these should be placed in sand beds without delay and many rooted shoots can be taken from the old clumps of those grown last season. Some of the earlier varieties will require stakes towards the end of the month, this refers to the clumps of last season which are generally left in and will provide excellent cut flowers.

### Roses

Mildew and aphid or green fly are the two worst enemies of our roses this month. For the latter we can always recommend black leaf 40, a nicotine preparation used with an efficient sprayer. The former fungoid disease is generally due to sudden climatic

## VEGETABLE CHART FOR USE IN SOUTHERN CALIFORNIA

FOR HOME AND SCHOOL GARDENING BY CLAYTON F. PALMER, LOS ANGELES CITY SCHOOLS

NAME OF VEGETABLE	WHEN TO SOW OR PLANT												O-IN OPEN- GROUND; D: IN DEEP BED; H-IN HOT BED; P: PLANTS	Amount of seed for 100 ft. of row	Depth to sow or plant (inches)	Number of seeds per foot of row	Number of days to come up	Distance apart to sow or plant in rows (inches)	Distance apart to sow or plant in rows (feet)	Number of days to reach maturity
	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.								
BEAN (bush)		0	0	0	0	0	0	0						8-10 oz	1-2	3-5	3-10	4-6	16-20 in	45-70
BEAN (lima)				0	0									¼ lb.	1-2	2-3	6-12	8-10	20-24 in	75-100
BEAN (pole)			0	0	0	0								6-8 oz	1-2	2-3	6-10	8-10	30-40 in	65-90
BEEF (Dk)	0	0	0	0	0	0	0	0	0	0	0	0	0	1 oz	¼-½	6-10	7-10	3-5	14-16 in	65-85
CHARD (Dk)	0	0	0	0	0	0	0	0	0	0	0	0	0	½ oz	¼-½	3-6	7-10	6-10	14-18 in	70-90
CABBAGE	0	0	0	0	0	0	0	0	0	0	0	0	0	10-200 seeds	¼-½	8-12	3-10	20-30	24-36 in	100-180
CARROT (Dk)	0	0	0	0	0		0	0	0	0				½ oz	¼-½	10-20	10-18	2-3	14-16 in	85-120
CELERY (Dk)					0	0	0	0	0	0	0	0	0	10-200 seeds	½"		10-20	6-10	14-18 in	100-170
CORN			0	0	0	0	0							¼ lb.	1-2	2	4-8	12	24-36 in	65-90
CUCUMBER		0	0	0	0									10-100 seeds	½-1	10-12	6-10	Thin to 3 plants	14-16 in	60-90
Egg PLANT	H	H	DP	DP	P									10-200 seeds	¼-½		8-16	2-4	36 in	100-130
KALE	0	0	0	0	0		0	0	0	0	0	0	0	10-200 seeds	¼-½	8-12	8-10	12-18	24-30 in	95-120
KOHL-RABI (Dk)	0	0	0	0	0		0	0	0	0	0	0	0	10-200 seeds	½	8-12	3-10	4-6	18-16 in	90-115
LETTUCE (Dk)	0	0	0	0	0	0	0	0	0	0	0	0	0	10-200 seeds	½-1	8-12	3-8	6-12	14-16 in	80-100
ONION (Dk)	DP	DP	DP	DP			0	0	0	0	0	0	0	2 oz	½-1	12-18	7-10	2-4	12-16 in	120-160
PARSNIP (Dk)	0	0	0				0	0	0	0				½-1 oz	½-1	10-20	10-24	3-6	14-18 in	130-160
PEA	0	0	0				0	0	0	0	0	0	0	1 lb.	2-3	6-9	6-10	3-4	18-24 in	70-80
PEPPER	H	DP	DP	DP	P									10-100 seeds	¼-½		7-12	10	24-30 in	100-120
POTATO (IRISH)	P	P	P				P	P						3 lbs.	3-6	Thin to 12 in apart	10-20	12-14	24-30 in	80-130
POTATO (SWEET)			P	P	P									2 lbs.	3-6	Thin to 12 in apart		16	30-36 in	140-180
RADISH (Dk)	0	0	0	0	0		0	0	0	0	0	0	0	1 oz	½-1	8-12	3-5	2-3	10-12 in	20-40
SALSIFY (Dk)	0	0	0				0	0						½-1 oz	1	6-10	6-10	3-6	14-16 in	120-170
SPINACH (Dk)	0	0	0	0	0		0	0	0	0	0	0	0	1 oz	1	5-8	6-10	5-8	14-16 in	85-95
SQUASH (bush)		0	0	0	0	0								10-200 seeds	1-1½	6-12	3-10	Thin to 3 plants	14-16 in	60-90
SQUASH (running)		0	0	0	0									10-200 seeds	1-1½	6-12	3-10	Thin to 3 plants	14-16 in	100-120
TOMATO	H	DP	DP	DP	P									10-200 seeds	½		3-10	24-30 in	60-120	
TURNIP (Dk)	0	0	0				0	0	0	0	0	0	0	½ oz	½-1	6-10	4-8	4-6	14-16 in	60-90

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changes, and naturally those plants which are of a weakly nature and in an exposed situation generally suffer the most. There is generally the first wave of the disease which appears early in the spring when the young leaves are expanding and the second wave occurs generally a few months hence and attacks also the young wood. It is at this stage that winter spores are produced and perpetuated for another season. If the early spring attack is stamped out there is less danger of it becoming very severe on plants in an ordinary position.

Sulphur in dry or liquid form has been used effectively for several years and recently the writer has secured very excellent results by the use of

"Qua Sul," a liquid sulphur combined with a certain fertilizing agent. Rust, another troublesome fungoid disease, attacks certain varieties more than others and appears on the underside of the leaves. All infected leaves should be collected and burnt, and as soon as there is any indication of its appearance the plants should be sprayed with a solution of sulphate of copper. This should be used as a preventive.

#### Begonias

Of the tuberous there are now many choice types such as single, double, frilled, crested and pendulent. Secure tubers without delay and start them into growth in a warm shaded spot in boxes of leaf soil. Fibrous types may be planted out at once.

## This Month in the Vegetable Garden Southern California

Written for California Cultivator By D. F. Reichard

**I**T IS gratifying to see the number of war gardens well under way. It is imperative that they be carried through to full fruition. Every bit of food that can be grown in the dooryard garden and used is that much more left in the regular channels to be sent across the water to help fight our battles.

For those who have not their garden under way there is still time to prepare for summer crops. Wet the ground to be used thoroughly and work up by spading or plowing at least ten inches deep and pulverize. If there is a heavy growth of weeds on the piece clean them off because turning under so much roughage at this late date allows too much air space and the soil dries out before the young plants or seed that you put in could get well started. Roughage or green manure should be turned under while there is still enough time and natural moisture to decay it.

In the gardens that are going now the time to watch them closely for the enemies—aphis, slugs, weeds, miller and so forth; also see that the moisture is kept up so that the plants maintain a continuous steady growth.

At the first sign of aphis spray, especially on the under side of the foliage, with Black Leaf 40. For slugs snail and all chewing insects use arsenic poisons either as a spray or dust. As a preventive apply tobacco dust or slacked lime as soon as the seed comes up or the plants are set out. Weeds are controlled by vigorous use of hoe and cultivator. Millar and fungus disease remedies are Bordeaux mixture, lime-sulphur solution and sulphur, either applied as a spray or in the dry form by dusting. The control and eradication of these garden enemies is essential for the maximum returns from a garden and the maximum we must have this year. Cultivation helps materially in the control of pests as well as the all-important service of keeping the soil in condition for holding moisture and admitting air in proper quantities.

Seeds of all varieties of vegetables may be sown this month with success, excepting peas, turnips, cauliflower and cabbage which require cool conditions either as to climate or soil. This is especially a good time to start melons, squash, beans, corn, tomatoes and peppers, all of which require warm weather.

### Northern California

Written for California Cultivator  
By A. R. Gould

**W**E NOTE that appeals are still going forth to increase the food supply and where there is a water supply on hand there is really no excuse for anyone. There is still time to sow some war crops and many tons can be shipped to the Allies.

**Corn**  
Make an extended sowing of those varieties mentioned last month. Keep the cultivator at work amongst those plants which are some inches high.

**Peppers**  
Plant eggplant and Chinese Giant and Red Chili peppers in a warm situ-

ation and keep well watered for a few days and if possible shade the young plants.

#### Parsley

Thin out and transplant this month the strongest seedlings and plant six to eight inches apart.

#### Cucumbers

Thin these out in the mounds, leaving one or two plants to the mound. Never let these suffer for want of water and keep the soil well cultivated between the plants. If field cultivation is adopted they should be planted in rows four feet apart.

#### Squash, Muskmelon and Watermelon

These should be thinned out as advised for cucumbers and strict attention should be given to watering this month. Grow these well out in the open in the warmest situation you can find and remember that squash will keep quite a long time and are good stock feed, while a splendid preserve can be made from the Vegetable Marrow, when fully matured. Make an extensive planting of squash.

#### Potatoes

Keep the cultivator at work through the rows. Planting of the main crop should have been completed.

#### Tomatoes

Planting of these should also be completed this month, and as it is a fairly easy crop to grow and needs little attention after having become established in the field it should be largely grown. The San Jose Canner is the most popular commercial variety grown.

#### Leeks and Celery

Towards the end of the month the

young seedlings of these will be ready for planting out into prepared trenches. They should be planted six to eight inches apart in the trench.

#### Turnips

Make another sowing of Early Snowball variety.

#### Lettuce

Sow Los Angeles and Iceberg, the latter is noted for withstanding the hot weather.

#### Beans

Make successional sowings of those varieties mentioned last month. Our state is noted for its bean crops and there is still room for a large increase in production. It is a good war time crop and will also improve the soil wherever you plant it. A little grown but excellent shell bean for winter, is the White Creaseback. The Soya bean has of late years come rapidly to the front, and besides being very valuable for the oil it contains, a fine flour is made from it which has considerable food value. It is especially valuable to grow as an orchard crop as it produces abundant nodules on the roots and thus leaves considerable nitrogen in the soil. There are quite a number of varieties but the largest should be secured for general planting. Plant it this month extensively and give it a warm position.

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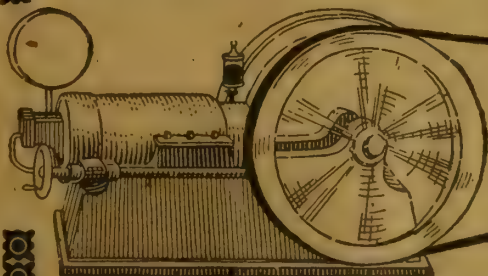
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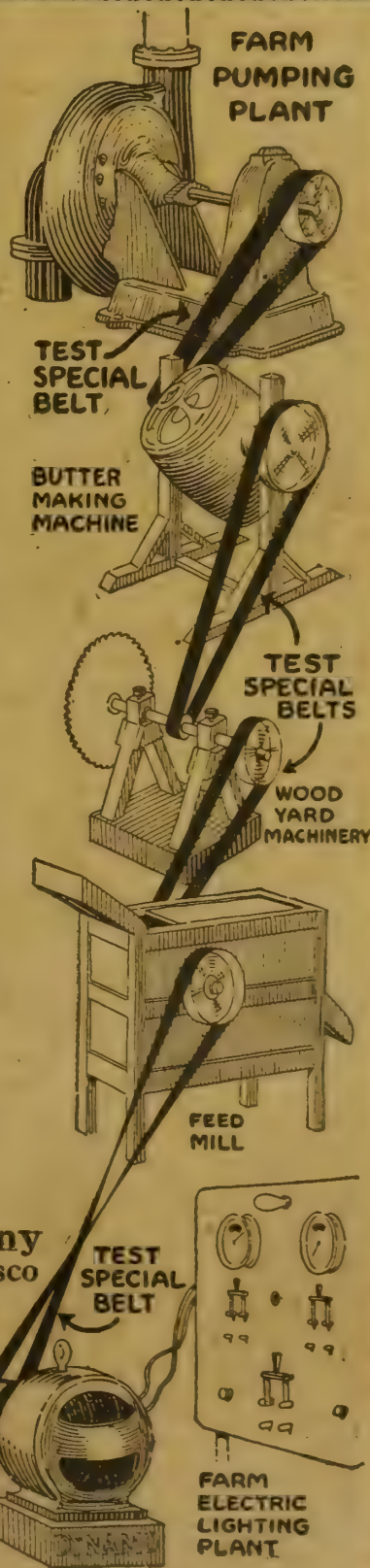
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A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established 1901,  
Combined with California Cultivator 1916

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Saturday, May 4, 1918

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## THIS WEEK'S COVER

With a freight rate of \$11 per ton, and the demand in California for corn food products greater than ever, it is unfortunate that we grow so little of this wealth producer. This state does not produce one-tenth as much corn as does the little state of New Jersey, and New Jersey lacks a whole lot of being a corn-state. California's production per acre is greater than that of many of the regular corn states, and with the long season and irrigation possibilities the acreage should be far greater. The past three years has seen a material increase in corn production because of the campaign of the millers who are using thousands of tons monthly. The photo which appears on the cover of this issue shows how well corn does grow in Tulare County.

The equal of this may be seen in many another county in the state if one will open his eyes next fall. Let's produce more corn and pay less freight, especially at this time of congestion in transportation.

## OVER THE TOP

California and all the nation has raised more than its quota. There may be sections that will fall short, but we are glad to say that as a rule none of these are rural sections. A look over the returns from California shows that the sections that are the quickest to respond with the full, and sometimes over 100 per cent, quota have been agricultural counties or sections. Now comes thrift stamp day with all the country making plans for special observation May 6, next Monday. Boy Scouts are making preparation for this great day, and it is anticipated the state will roll up millions of dollars in purchase of war savings and thrift stamps.

## CHEER UP

The appeal has often been made to keep the boys at cantonments and in trenches cheered up with letters from home and from the old friends. This has been answered, at least as to quantity of mail, by such floods of letters that the postal department has appealed for relief so far as possible. The war department is also asking for relief from one type of letter which is sometimes sent to the boys. This is the type which has to do with the discouragements and gloomy things. A fellow confronted with the hardships which naturally accompany army life and doubtless with the ever-present longing to see and be with home folks, is not helped or made a better fighter by gloomy things in home letters. Let us pick out the cheering and better features of home life to write about, and especially the noble deeds and the sacrifices being made by the home folks that the forces in the field may be made more comfortable and more efficient. If there are slackers and wasters and indifferent or even pro-Germans, let us fight it out here at home. "Whatsoever things are true,

## FARM LOAN RESTRICTIONS

A Glenn County subscriber has written for our opinion as to the method of handling farm loans followed by the farm loan bank at Berkeley. We know that in a general way the bank has made many loans on California lands; likewise that it has felt compelled to withhold some loans. We have talked with some of the officials of the bank, and the embarrassment of the situation has been explained. In a word, this method of banking in the United States is absolutely new; there is no precedent, and the management is most desirous of making a complete success of this movement which should be of wonderful advantage to agricultural interests. One of the principal foundation stones of sound finance is stability, and we doubt not every successful banker has his bump of caution fully developed. The management of the federal farm loan, without the advantage of any similar movement in the past to guide them, are possibly a bit over-cautious. It is possible this caution may lead to stagnation, or the failure in development of some lands, which, if properly financed, might be successfully developed. But let our subscriber speak:

"As one of the appraisers for the local association I know that the land in question is good, fertile soil, that only needs irrigation and develop-

## Put Out the Fires!

Put out the fires! save the waste! save the pastures! save the water sheds! were ideas expressed in many ways at the fire prevention meeting held in Napa last Saturday. This county is surely organized and proposes to pass on its enthusiasm and organization benefits to all the state, hence to other counties.

The sweep of a blaze across one grain field can easily nullify the efforts of a thousand patriotic families in food conservation. The Germans would gladly expend a thousand shells to effect as much damage. If submarines dealt as great a loss, Berlin might exultantly chronicle the fact.

whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report; if there be any virtue and if there be any praise, think on these things."

## ORANGES BY WATER

A subscriber and oranger grower asks of the Cultivator as to the probability of some of the ships now building on the Pacific Coast being commissioned to carry California citrus fruits and other products to Atlantic Coast consumers. Present indications are that the citrus fruit crop next season will be one of the state's greatest. Trees are in excellent condition, and blooming has been heavy. It is a hardy prophet, however, who will make definite prediction this early in the season. More, it is a hardy prophet who will predict the direction of travel of our Pacific-made steamships. These are not days for fulfillment of prophecy, so we can only express a wish, and that is that the world's traffic may be so arranged that shipments may be made by way of the canal. This matter will rest, however, entirely with the board at Washington where only world necessities are considered. It may be noted that Southern California had hoped to send the first of the completed vessels of the now-building Liberty Fleet, direct to France and Belgium, with a free will offering of the entire shipload to the hungry kiddies of those two countries. The shipping board has not as yet seen its way to give permission for such use of the vessels, but America is building vessels as never before, and perhaps by the time the next crop of oranges is ripe our carrying capacity may be increased so rail transportation may be relieved of some of its burden.

ment to double in value. The land now sells at \$75 to \$90 per acre. As the main expense of development comes at the beginning, installment of pumping plant, etc., and as that was the purpose of the applications, it does not seem as if the bank was quite fair in this matter. If they feel that the value of the land is not sufficient they should allow a smaller loan."

To the application the Berkeley bank replied:

"Upon looking at the report of the appraiser we discover that you have not yet developed your irrigation system."

"We feel that we cannot make a loan upon your land until such time as you have made an effort to develop the system and your land has been prepared for irrigation. A 40 acre area of dry land we do not feel to be sufficient to make a loan upon."

"Under the ruling of the farm loan board we feel it would be impossible to comply with your request to make a loan for the development of water until you have gone some distance yourself in this regard. We would advise you strongly to get started in this direction and sometime later on renew your application to this bank."

Now, we have driven over that portion of Glenn County in which these lands are located. They are not far from that district of Orland where the government reclamation service considered lands well worth changing the advancement of a large sum of money in order to form a federal reclamation district. Those lands have proved wonderful producers, and we believe that there is not a single settler who has lapsed on his payments, and, frankly, if we had the decision in the matter of loaning on these lands, and the loan was to be used in carrying water to them and if closer inspection had confirmed our present belief, we would have considered them a worthy and a safe investment. We believe the time will come when the federal farm loan board will feel safe in advancing money on lands which its caution now prevents.

The board is handling other peoples money. Bonds are to be sold to provide the coin for other loans. Those bonds must be kept at par. Careful management and prompt interest payments will do it.

## This Week's War Notes

Troops, formerly the National Guard of California, are reported to be on the way to France.

R. S. Golstein, convicted of producing a seditious photo-play, Spirit of '76, has been sentenced in Los Angeles to ten years imprisonment and \$5000 fine.

A movement for efficiency, or at least the cutting of a vast amount of red tape, is indicated by the appointment of Chas. M. Schwab, the head of the great steel manufacturing interests, to have entire charge of ship building and of John D. Ryan, former copper king, to have entire direction of the army's great aircraft production program.

It appeared early in the week that a break might be made between Germany and Holland. German troops massed along the frontier and certain demands as to transportation through Holland and the furnishing to Germany of certain supplies were made, which Holland refused. Later dispatches intimate that Holland has conceded most of the Teuton demands. During the contention German papers calling Holland's attention to the fate of Belgium were largely circulated through Holland.

Secretary Baker's appreciation of the size of the job America has taken is shown by claims made in Washington that he will appear before the military committee and make an appeal for an army of at least 7,000,000 men. In both army and navy there are now about 2,000,000. If the present war plans are carried out it will mean the assembling and drilling of 5,000,000 more. A year ago the total forces of the United States aggregated approximately 160,000. Secretary Baker will ask that draft age be raised to 40. A new draft is anticipated providing for two units of 500,000 each.

The most spectacular and thrilling event of the week has been the attack of the British navy under the leadership of Vice-admiral Sir Roger Keyes, on the ports of Ostend and Zeebrugge. H. M. S. Vindictive, with several torpedo boat destroyers and submarines, together with cruisers loaded with cement, entered the harbors, destroyed immense quantities of stores and supplies, marines remaining more than an hour at their destructive work, and sank the cement laden cruisers in the mouth of the harbors so as to seriously interfere with the use of the harbors as submarine supply bases.

The Teuton army is reported as again marching on Petrograd with an ultimatum to Russia that it will be captured unless all able-bodied German prisoners are released and returned to Germany at once and all invalid Germans given care under direction of physicians from neutral countries. In return Germany agrees to release all invalid Russian prisoners which she holds and to retain and "employ" all able-bodied Russians. There have been rumors of counter revolutions, one in particular claimed to be engineered by German sympathizers, aiming to put on the throne Alexis, son of the former emperor, under the regency of Grand Duke Michael Alexandrovich.

The fiercest of the fight on the Flanders and French front has been back and forth around the city of Ypres which as we go to press is nearly surrounded. The Allies are making a wonderful fight; the resistance on Monday being declared the bitterest since the drive which began March 21. The policy with the Allied troops has been to make strenuous resistance and sacrifice as few men as possible. The Sammies are now definitely located on the line east of Amiens and are known to control a section of several miles, both as to artillery and infantry. They are repeatedly attacked but have maintained their line. French troops have recaptured Locre near Kemmel and some other points of strategic value. It is rumored there will soon be 40,000 Chinese troops in France. The long range gun continues the bombardment of Paris, without material result, however. The line south of Verdun has repulsed some severe attacks by the Germans. In upper Alsace Germans were defeated and many prisoners taken. One factor in German operations in the use of tanks modeled on the English tank.



# Agricultural News Notes of the Pacific Coast

## Northern California

Last year's wheat is being rapidly cleaned up from all warehouses.

Butte County will plant 30,000 acres of rice, which is 10,000 greater than last year.

Rice planting is much later than usual, partly because of shortage of tractor supply.

Wheat being held by California farmers is soon to be requisitioned by the food commissioner.

The Feather River is "scouring," and shippers are hoping that it may again become a navigable river.

Butte County rice planting is late but the acreage will be 30,000 which is 10,000 more than any preceding year.

Merritt is urging every wheat grower to refrain from cutting wheat for hay and grow every possible bushel of grain.

The city council of Auburn, Placer County, has repealed its ordinance forbidding the keeping of pigs within the city limits.

Farmers of Placer County met at Auburn last Tuesday for the purpose of organizing a farmers mutual insurance society.

Napa County is making preparation for the utilization of pupils of the public schools in the solving of the strenuous labor problem.

The rice growers have sent a man to Washington to secure a revision of the excess profits tax so as to give justice to the land renter.

"What is better than a pig on a farm?" is answered by the farm bureau of Eldorado County with "Two pigs," which is their slogan.

An orange grower of Palermo, Butte County, is installing orchard heaters which give more heat and less smoke than any heretofore used.

Farmers of Irrigation District Number 108 in the Sacramento Valley will produce this year about 5000 acres of wheat and about 40,000 acres of barley.

Federal Food Commissioner Merritt has taken entire charge of the fishing industry of the state under orders from the food administrator at Washington.

Master Frank L. Hunt of the California State Grange has written to every member in California and urged subscriptions and fullest support to Third Liberty Loan.

Eldorado County farm bureau is planning a good roads day, squirrel extermination week, many valuable center meetings, and sent an immense delegation to the University Farm picnic.

The biggest annual event in the Sacramento Valley is the picnic at the University Farm, Davis. It was estimated that the attendance last Saturday was in excess of 18,000 people.

May meetings of the Sacramento farm bureau are: May 1, Elverta; 2, Rio Linda; 3, Galt; 9, Elk Grove; 10, Arcade; 11, Picnic Del Paso Park; 13, Orangevale; 14, Fair Oaks; 15, Del Paso.

Yolo County rice producers have been in conference with members of the food administration and the food administration pledges itself to aid the rice growers in record production for Yolo County.

## Central California

Kern County is promised three big cotton gins.

Corcoran, Kings County, will plant 500 acres of cotton.

Riverbank, Stanislaus County, is the latest to plant rice.

Aromas, San Benito County, grange recently held its annual banquet.

Ripon farmers have contracted 500 acres of cantaloupes and 200 of peas.

The San Joaquin Valley was visited by a severe frost early in April, the severest since 1911.

The Valley Fruit Growers' Exchange has settled upon a maximum wage of \$4.00 per day without board.

Tulare County has decided to hold its annual Tulare County Citrus Fair some time in December in Visalia.

Cattlemen of Monterey County recently organized at King City. John L. Matthews was chosen president.

Nearly all the farmers in the Manteca section of San Joaquin County are growing tomatoes for canneries.

Cattlemen's meeting has been called for May 7 at Bakersfield; May 8 at Porterville in the forenoon, afternoon at Visalia.

Egyptian long staple cotton planters are finishing the campaign, though all admit the seed should have been in the ground prior to May 1.

Santa Clara County milk dealers have organized a milk bottle exchange, this exchange to be a clearing house where they may be returned to their owners.

May meetings of farm centers in Fresno County: Riverdale, May 2; Raisin, 6, 8:30 p. m.; Easton-Oleander, 9, 8:00 p. m.; Kerman, 10; Selma, 11; Monmouth, 13; Reedley, 15.

Santa Clara County farmers are organizing the United Farmers of Santa Clara County. It hopes to be in a position to permanently aid agricultural and horticultural interests.

Cotton growers recently have observed a planting demonstration in the Kearney Vineyard, Fresno. The San Joaquin Valley Egyptian Cotton Growers' Association has been organized.

The Foothill Orange Grove packing house near Porterville was recently destroyed by fire with a loss of \$25,000. The federal department of justice is investigating as it is feared the fire was of incendiary origin.

San Joaquin County farm bureau center meetings for May: Farmington, May 1; Lavelle, 3; Thornton, 6; Linden, 8; Douglas, 9; Tracy, 10; Lockeford, 13; Ripon, 16; Manteca, 17; directors meeting at Stockton, 11.

San Joaquin Valley bee keepers have organized the Central California Honey Products Cooperative Exchange. The five directors are: Willis Lynch of Stockton, F. W. Burtch, Mike Marony, H. M. King, M. C. Richter, all of Modesto. The place of business for the present will be Modesto.

The directors of the Kings County farm bureau passed unanimously the following resolution: "Therefore, be it resolved, that we enter our protest against the continued waste of food-stuffs in the manufacture of intoxicating liquors and also against the open saloon, it being the greatest menace to the production and conservation of food."

## Southern California

Los Angeles recently sent 800 men to Camp Lewis.

Alfalfa ranchers are cutting and delivering new crop.

The Navel shipping season has closed in several orange sections.

Stockholders of the Hemet Apricot Growers recently met and elected directors.

An Ontario pigeon fancier with a large number of homing pigeons has volunteered and been accepted in the signal reserve corps.

Imperial Valley's fat hog sale ranged from \$16.54 to \$17.10. The minimum price was only a shade below the ruling Kansas City prices on the same day.

Oxnard farm center is discussing siloing of beet tops, and another season some will try the European method of siloing in trenches and covering with straw and dirt.

A Los Angeles County sardine packer, because of request from the government, will make experimental packing of sardines in peanut oil instead of the usual olive oil.

The Imperial Valley Dairymen's Association held its first meeting at El Centro, April 15. After one week they have signed up a total of over 5000 cows or nearly one-third of the cows in the valley.

The committee of Riverside County producers in favor of a farm school in the south similar to the one at Davis are still in action and appealing for consideration of the interests of the southern end of the state.

The Imperial Valley Milk Producers' Association will hold barbecue and mass meeting at El Centro on April 15, with speakers from the northern associations, for the purpose of perfecting the organization.

Investigations as to the value of bees in orange groves have been made by various bee keepers of the southern end of the state, and it is now claimed that where bees are abundant, even with Navels, the production is greater.

The cow testing department of the Imperial County farm bureau shows 46 cows producing over 45 pounds butter fat for the month of March. Pretty, owned by A. Visser, Holtville, leads the list with a production of 66.2 pounds.

Imperial Valley irrigators are concerned over a ruling of the war department in effect that unless the district elects to ultimately connect with the Laguna dam the department will withhold permission to place temporary weirs below Hanlon heading.

Two pigs fed by the Holtville High School Pig Club, six months old, and brought to the farm bureau auction sale at El Centro, weighed 505 pounds. Twenty-one others averaged 184 pounds after four months feeding by the school children. Dr. Crandall states that each of the children cleared about \$9.00 on his pig after deducting cost for feed and labor.

M. J. Pickering, from whose address on subsoiling we quoted April 20, informs us that we are seriously in error in locating La Habra in Los Angeles County. Orange County is proud of every inch of itself, and every resident has pride in being rightly located.

## The Coast and General

Day-old chicks may now be sent by mail.

Washington County, Idaho, has a fully organized farm bureau.

Hood River apple growers received over \$600,000 for last year's crop.

An immense bulk grain elevator is being constructed at Bates Siding, Oregon.

A careful canvass of the food situation in Washington, D. C. shows a 76 per cent increase over 1913 prices.

Beet growers of Walla Walla, Washington, and other nearby points will increase their acreage to 18,000, this largely because of \$10 price.

Live stock breeders of Montrose, Colorado, have agreed to give pure bred cow and calf to every soldier who enlists from that section.

Vegetable growers of Cuba and the Isle of Pines are concerned over the shortage of shipping facilities and fear the industry may be ruined.

Tillamook County, Oregon, recently held a Jersey sale at which one bull sold for \$1700, one cow for \$850, and the average of the sale was \$340.

Range stockmen of Arizona are adapting portions of their ranges to general farming. The campaign is on to make each ranch self supporting so far as possible.

State Horticultural Inspector Graham of Idaho reports serious injury to neither prunes nor apples by the recent frosts. Peaches have been seriously harmed.

Maricopa County, Arizona, dairymen have asked the national food commission that the price of milk in the Salt River Valley be fixed to cover cost of production.

Orange growers of Florida are making a campaign to have the leading varieties reduced to Parson Brown, Homosassas, Pineapple and Valencias.

Salt River Valley, Arizona, egg producers are organizing for the better marketing and storage of eggs. Facilities have already been secured for the storage of 600 cases of eggs.

The district horticultural inspector of Yakima, Washington, has been making extensive experiments in codling moth control. Excellent returns were shown from economical spraying conducted last year.

Louisiana will produce about 280,000 acres of sugar cane, this compared with 293,000 in 1917. This reduction is explained by the fact that growers have gone more largely into cotton, corn and rice.

The French ministry of war has reported favorably on a trial ration of seaweeds for horses. During part of the experiment seaweed was substituted entirely for oats. The horses increased in weight and general condition.

Definite arrangements are now made for an aerial mail service between Washington and New York, which will begin May 15, even the landing places at both ends having been provided for, and hangars are now building.

The Isle of Pines vegetable growers are compelled to suffer loss because of rains softening peppers and making it impossible for them to harvest crops ready for market, while the orange grove owners in the same island are highly gratified at the abundant rains.





*IT IS DUE to ourselves and to prospective users of Cutter's Anti-Hog Cholera Serum and Hog Cholera Virus to say that up to 1917 we had not produced either of these articles.*

*But it is also due to ourselves and prospective users to say that when we did start to produce them we had back of us twenty years of experience in producing serums and viruses for human and animal use, and in that respect we were better qualified to produce them than laboratories which, while they have been producing Anti-Hog Cholera Serum and Hog Cholera Virus for a few years, lack the experience in producing high-grade laboratory products that The Cutter Laboratory possesses.*

*This experience enabled us to plan, build, equip and conduct what is conceded to be the most up-to-date and best-equipped plant in the world for the production of Anti-Hog Cholera Serum and Hog Cholera Virus, a picture of which is reproduced on this page.*

*Our record of several million c.c. sold and used within the first year after production commenced, without one single complaint of bad results or lack of realization of expected good results, is also due to that same more than ordinary knowledge of the proper conduct of laboratory processes which our organization possesses.*

*This same laboratory (and field experience, too) leads us strongly to urge the use of Refined Germ-free Serum.*

*Measure for measure, a properly prepared, clear, sterile serum gives greater protection than the old type (defibrinated blood) serum does, because all the inert, solid constituents of the blood have been removed.*

*This refining process does not remove any of the immunity-producing substances.*

*It is the same type of serum as Diphtheria and Tetanus Antitoxic Serums (the "Globulin" type is not referred to in this connection), and one might just as well argue for the use of a contaminated Anti-Diphtheritic Serum as to argue for the use of the old defibrinated blood type of Anti-Hog Cholera Serum.*

*There is only one valid argument for the old type of serum, it is cheaper to produce and can therefore be sold for less.*

*But this is offset by the greater absorbability of the Refined Serum, its freedom from the possibility of abscess formation and discoloration of the flesh at point of injection, and its 20 per cent greater potency.*

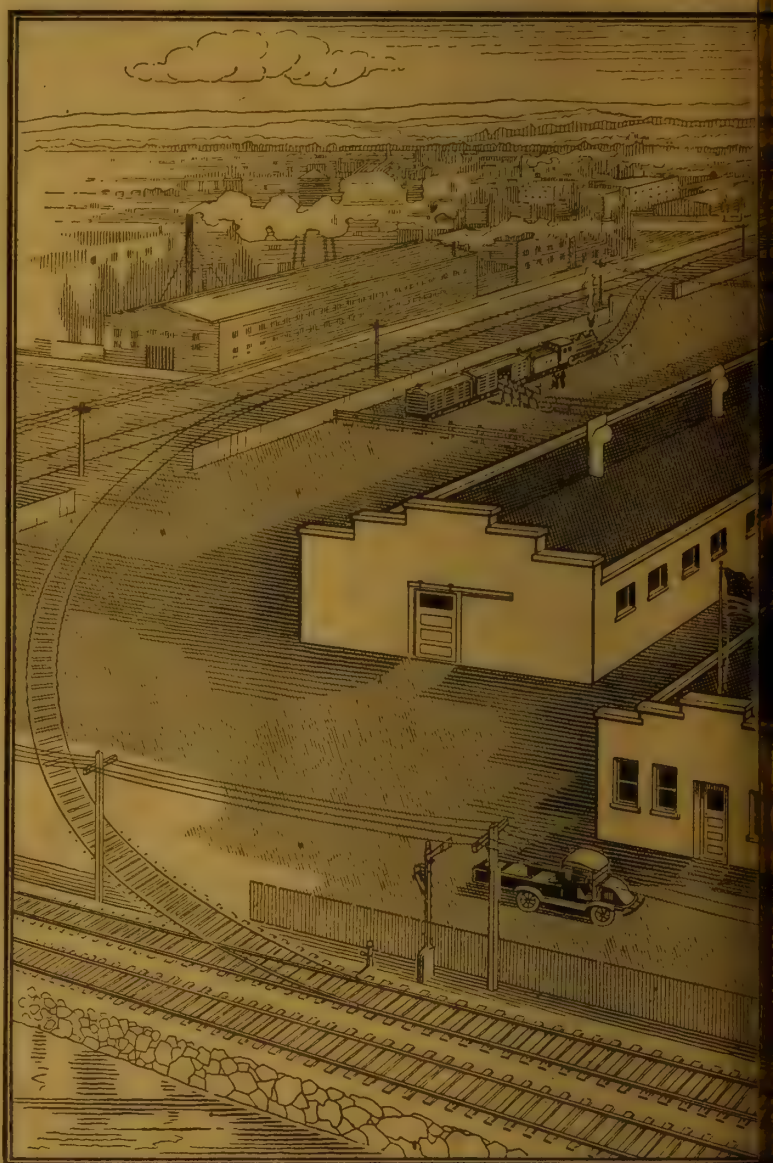
# CUTTER'S REFINED ANTI-HOG CHOLERA

Produced and

## The Cutter

Berkeley

"THE LABORATORY"



A General View of One of the Largest and the Most Up-to-date

### PRICE LIST

Cutter's Refined Germ-free Anti-Hog Cholera Serum is supplied in 50 c.c., 250 c.c., and 500 c.c. bottles, at 2½ cents per c.c. This low price was made to popularize this superior product. We pay express charges.

Cutter's Defibrinated Blood Type of Anti-Hog Cholera Serum is supplied in appropriate size bottles at 1½ cents per c.c. This is the best serum of this type that can possibly be produced. We pay express charges.

Hog Cholera Virus for use with either type of Serum is supplied in 50 c.c. bottles at 1½ cents per c.c. We pay express charges.

Let your Veterinarian order for you, and encourage him to be liberal in estimating the amount of serum to use. There is always some wastage, besides, safety lies in giving more than may be needed rather than in trying to figure too fine.



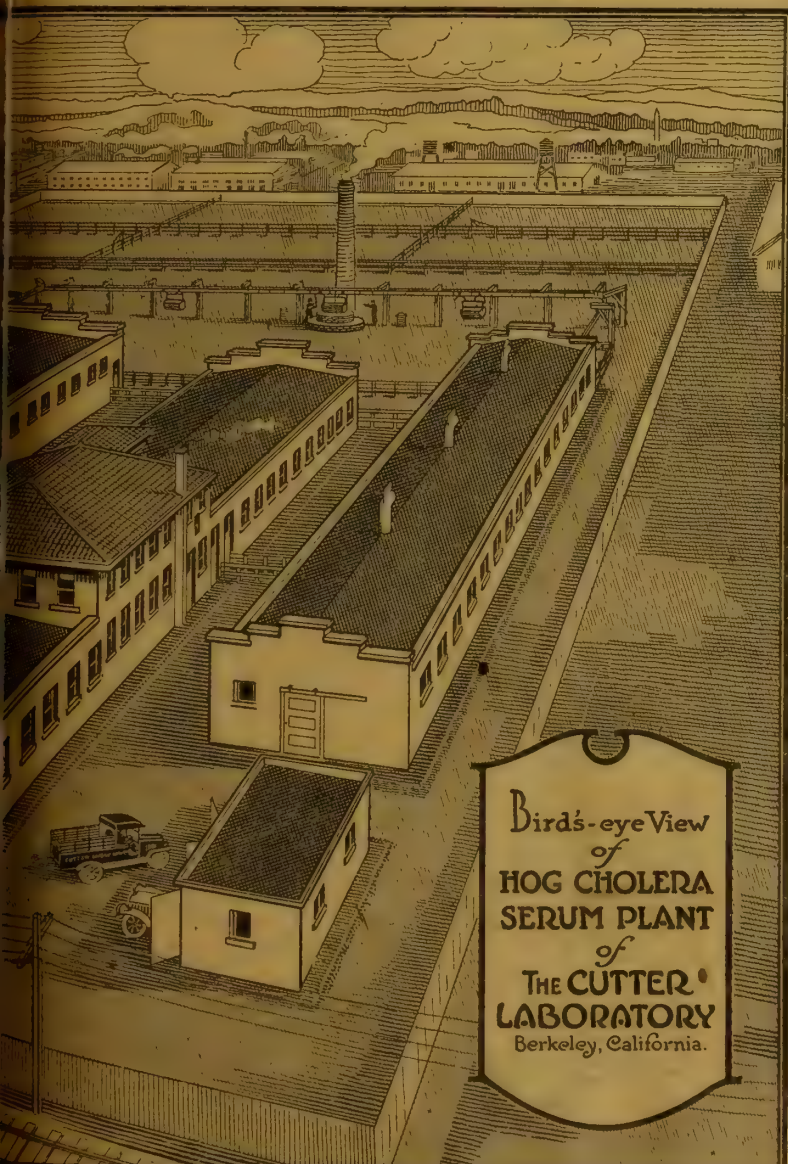
# GERM-FREE SERUM

License by

## Laboratory

California

AT KNOWS HOW"



Best-Equipped Anti-Hog Cholera Serum Plants in the World

Should your Veterinarian be prejudiced in favor of some other serum, there is probably a reason that concerns him but not you, but it should make you more insistent that Cutter's Serum be used. Insist on Cutter's and order direct from us should you have trouble getting it. We ship, day or night, by earliest prepaid express.

Correspondence is solicited with veterinarians and stockmen who are interested in our new Germ-free Blackleg Filtrate and Anthrax Vaccine, and also from those having stock in Anthrax infected districts. Cutter's Anti-Anthrax Serum and Anthrax Spore Vaccine make stock raising safe in such districts.

Our new plant for the production of Anthrax Vaccine and Anti-Anthrax Serum is the largest and best equipped plant in the world devoted exclusively to the production of these two articles.



WHENEVER any producer seriously argues that the old type serum is equal to or better than the clear, sterile serum, talks glibly of the danger of "filtering out the immune bodies," set it down that either he is not equipped to produce the clear, sterile serum, or he is trying to cover his ignorance of serum values with a camouflage of words.

We produce both types of serum, and our defibrinated blood (old type) serum is the best that can possibly be produced, but the sooner veterinarians and hog raisers switch over to the use of the refined germ-free, the sooner will they be in line with the advice and practice of the best authorities.

We advise, too, that while the hog raiser should know enough about vaccination operations to be a judge as to whether they are being conducted right, he should nevertheless neither do the work himself nor trust Tom, Dick and Harry.

Get a competent veterinarian, his every-day experience with the hypodermic syringe and ordinary surgical technique beat theoretical knowledge or the knowledge that comes from only occasional practice.

A good veterinarian, like a good physician, is worthy of his hire, and in the skillful handling of vaccination operations he more than saves what his fees amount to.

We have just issued a special pamphlet giving the latest in the theory and practice of proper procedure in the administration of serum and virus and the proper handling of animals before, during and after vaccination.

It was intended more particularly for the veterinarian, but it should also be in the hands of every hog raiser.

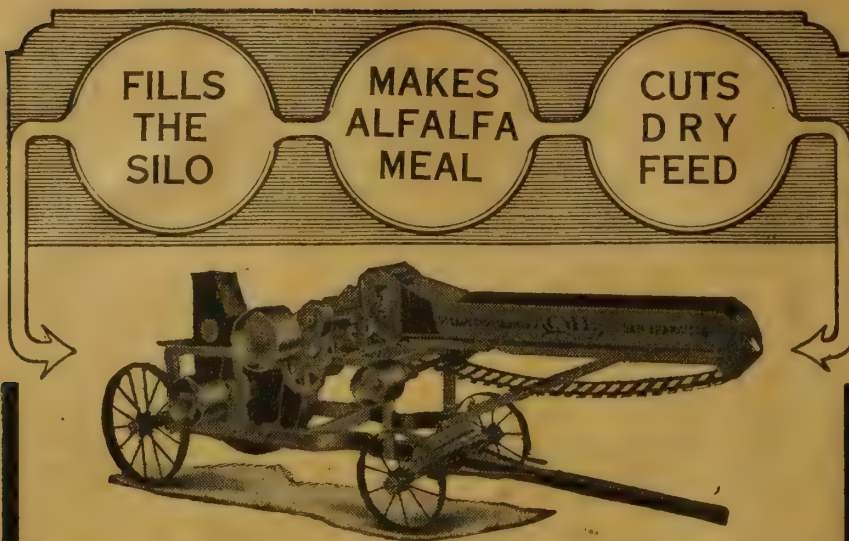
If the hog raiser reads it carefully he will know that he is not qualified or prepared to be anything but a lay helper in properly conducted work; but he will also know whether the operator is really up-to-date in his conceptions and practice.

Write for this pamphlet giving "Special and Detailed Information Concerning Hog Cholera Immunization," also for booklet, "Hog Cholera Prevention."

Whether the old or the new type serum is used, stockmen should insist on the use of Cutter's Serum and Virus, because they are made by "The Laboratory That Knows How," and in not one single instance have they failed to give satisfactory results.

Owners of purebred swine should insist that Cutter's Refined Germ-free Serum be used. For it is "penny wise and pound foolish" to pay big prices for purebred boars and sows and then trust the lives of their progeny to the old type serum when for a few cents more per dose a safe and absolutely germ-free serum may be used.





## The ACME Cutter

The same Acme Cutter that fills your silo can be used to your profit at all seasons of the year in CUTTING DRY FEED and MAKING ALFALFA MEAL.

### Cut Your Dry Feed

10 per cent to 20 per cent of the bulk hay fed to stock is WASTED. Part is trampled under foot. The coarse hay is noded out and not eaten. Alfalfa is worth \$30.00 per ton. The average waste is 15 per cent or \$4.50 per ton. Avoid this loss by running your hay through an Acme Cutter. Make your hay go farther—feed more cattle. **HOW MANY TONS OF ALFALFA WILL YOU FEED THIS YEAR?**

The Light Running Acme is an all steel frame machine. Built in SEVEN SIZES. Would you like the catalog and sample of alfalfa meal?

**De Laval Dairy Supply Co.**  
IDEAL GREEN FEED SILOS—ALPHA ENGINES  
61 Beale St. San Francisco, Cal.

## FRESH COWS

are especially desirable right now and there will be some mighty good ones as well as a good number of heavy springers in the

### North San Joaquin Breeders First Consignment Sale

**50 REGISTERED HOLSTEINS 50**

At Miller's Stables, 11th and G Sts.

**Modesto, California, Thursday, May 9, 1918**

Remember that this sale is made up of choice consignments from reputable breeders, J. W. Benoit, Modesto, selling practically his entire milking herd, Gotshall & Magruder selling a large number of good cows and heifers, R. L. Holmes selling a pair of beautiful young cows, H. E. Cornwell putting in a right good heifer that he doesn't want to sell at all, and J. A. Pelanda selling some good ones that are in prime shape to make money for their new owners right away.

DAIRYMEN, don't overlook the fact that there are six splendid young bulls in this sale, the kind you need to improve your herd.

Every animal guaranteed to be a breeder, tuberculin tested and sold subject to tuberculin retest, every animal pledged to absolute sale.

Management of

### California Breeders Sales and Pedigree Company

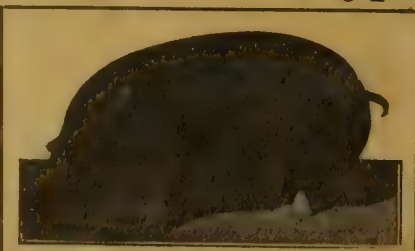
J. M. Henderson, Jr., President C. L. Hughes, Sales Manager  
Sacramento, California.  
Auctioneers—Col. Ben A. Rhoades, Col. Cy N. Clark.

## Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

**M. Bassett**

Hanford, Kings County, Cal.



## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
"IT MAKES THEM FAT"

Hauser Packing Co.

Los Angeles

## Arizona Livestock

Written for California Cultivator By A. L. Spellmeyer

**A**RIZONA is relied upon for the bulk of the yearlings and stock cattle imported into California. Southern Utah and Nevada also furnish thousands of feeder steers, but the Arizona market and conditions generally in cattle, lambs and wool are more or less indicative of general prices and conditions.

This is written in early March, and by the time of publication prices and conditions may be changed, as there seem indications of a temporary slackening market on yearlings and steers, a high lamb price, an advancing fat steer price, stronger pork prices and a sluggish wool demand, any or all of which may change very swiftly.

The usual buyers' slump is to be expected in cattle in April, especially feeders and stockers, but demand is so much greater than supply that before the deliveries in large volume commence prices are sure to be stronger.

There are in Arizona many buyers who have been taking all the yearlings, twos and threes they can get worth the money. Prices have ranged from \$35 for southern and light cattle up to \$37.50 for the better grades and \$40 for the best yearlings. No authentic \$45 sales have been reported. Twos and threes are in big demand at \$10 to \$15 for twos over the yearling price. No great demand has developed for stockers, cows or heifers as yet.

Apparently Central and Northern Arizona are already closely contracted as I have been through the state recently and ran across a number of buyers who had not been able to fill their needs. There are a few thousand yearlings left in the Kirkland-Prescott country at \$36 to \$38, also a limited number unsold in the Verde country. In the Globe vicinity the steers have been closely contracted except one bunch of 2000 yearlings and 2000 cows which had not been sold ten days ago. These cows were sellers choice, which means old cows and were held at \$40. There were some good cows also for sale held at \$50. Calves are figured about \$20 extra on the average. Most of the Apache reservation spring deliveries are already contracted. Our own outfit sold a bunch of good twos and threes to a Bishop, California, man at \$60, and we can get \$40 for our yearlings any time. We have offered a bunch of twos, heifers and young cows with calves, at \$50 for good heifers and \$60 for top grade Hereford young cows and heifers and \$20 extra

for calves at side, but no contracts were closed. We offered a bunch of big old cows at \$45 and \$20 extra for calves, with no takers, as the best old cow offer we drew was \$37.50, which of course was by a speculator who figured on a big profit. Therefore no stock cattle or definite cow price seems established in Arizona, and although there is \$100 cow and calf talk there is no action to justify such a price.

From the returns of the old cows and young canners shipped lately to Kansas City it is very probable that every surplus cow sold from Arizona will go East for the meat tins, as some light Southern cows brought \$48 to \$56, which would not have sold on the local Western market higher than \$30 to \$40.

It seems a waste and pity for many thousands of good young breeding stock to go into killing pens, and it seems out of proportion that a cow is apparently worth on the Western market hardly more than its increase for one year. There will probably be less than 20,000 good cows sold this year in Arizona, and what are sold are on account of the limits set by reservation and forest permits and forced turning and cutting down. It would seem a good opportunity for the food administration to exercise a good word with the department of interior towards finding a place for good young breeding stock on some reservation, forest or national park range, for the war period, as no cattle owner cares to sell cows if he can find a place to run them.

The Snowflake-Holbrook associated cattle men are holding a bunch of some 2000 yearling steers of good bone and quality at \$40 for June and July delivery, and it seems reasonably certain unless \$40 or near it is realized they will be held over.

The Bainbridge steers at Phoenix sold without cut a month ago for \$11.60. A fine bunch of fed steers which will go close to 1600 pounds for the tops and over 1200 pounds for the tails and average over 1300 pounds is the Cowden bunch. It is expected from present Kansas City indications that this bunch will probably bring 13 to 14 cents net, and go East, as the Western packers seem backward and loath to go over 12 cents for beef. The Burnt Ranch near Phoenix is feeding a bunch of a thousand or so calves since last fall. They are a good bunch of dehorned calves which should come out nice and fat at about 700 pounds and bring a fancy price when fat. Feed has been so high it will take better than 12 cents to come out even on any fancy fed cattle.

## Milk Goats

A well known importer of live stock states that "the goat of Switzerland is the Swiss peasant's cow, the Swiss baby's foster mother, a blessing to the sanitariums for invalids, and a godsend to the poor," in England and in many other parts of Europe people who leave the city during the summer months, either for their country homes or for travel, often take a milk goat with them in order to insure a supply of good milk of uniform quality. In this country the fact that the goat will supply sufficient milk for the average family at low cost and can be kept where it is impossible to keep a cow, is beginning to appeal to many.

A doe that produces three pints a day is considered only a fair milker, while the production of two quarts is good, and the production of three quarts is considered as excellent. Goat's milk is nearly always pure white. The small size of the fat globules is one of its chief characteristics. In consequence the cream rises very slowly and never so thoroughly as in the case of cow's milk. If it is properly produced and handled, it will keep sweet as long as cow's milk, and there should not be any goaty odor. The milk can be utilized for the same purposes as cow's milk, but is less satisfactory for making butter and perhaps better for making cheese.

Feed for Goats

Goats should receive a liberal quan-

tity of succulent feed such as silage, mangel wurzels, carrots, rutabagas, parsnips, or turnips. The grain feeds best suited for their rations are corn, oats, bran, barley, and linseed oil meal or oil cake. A ration that has been used in the government herd, and which has proved to be very satisfactory for milk goats during the winter season, consists of two pounds of alfalfa or clover hay, one and one-half pounds of silage or turnips, and from one to two pounds of grain. The grain ration consisted of a mixture of 100 pounds corn, 100 pounds oats, 50 pounds bran, and ten pounds linseed oil meal. All feed offered the goats should be clean and of good quality. Plenty of rock salt should be kept before them, and occasionally a small quantity of fine salt mixed with the grain feed. A good supply of fresh water is necessary.

### ANNUAL MEETING OF GUERNSEY CATTLE CLUB

The annual meeting of the American Guernsey Cattle Club will be held at the Auditorium Hotel, Chicago, Illinois, Wednesday, May 15, 1918, at 10:30 a. m. The business of the meeting will consist of: Report of the year's work of the club's office; recommendation of the executive committee; election of officers.

America is slowly but surely lining up for a lasting peace at any price.



## MORE RANGE THROWN OPEN

Thousands of Head in National Forests in 1918

As a war measure, the national forests of California carried in 1917 a total of 49,010 head of sheep and goats and 10,970 cattle, horses and

swine in excess of the numbers carried during 1916. Feeling, however, that the grazing resources of the national forests should, during this emergency, be utilized to their utmost, Assistant District Forester C. E. Rachford, in charge of the grazing work for the forest service in California, arranged last spring for the services of eight grazing experts. These men were assigned to an examination of the national forests to determine what should be done in water development and other range improvements in order to make available every possible acre of national forest range for California's cattle and sheep.

Based upon their inspections and the reports of the forest supervisors, it is estimated that the national forests of California are capable of supporting a further increase of 162,265 sheep and goats and 39,878 cattle, horses and swine, by the time all the range improvement work contemplated has been completed.

It is hoped, according to Acting District Forester Headley, that sufficient range improvement work can be done so that 1918 will see an addition over 1917 of some 87,000 sheep and goats and 16,000 cattle, horses and swine. If the work progresses satisfactorily, and the desired increase is obtained, this will represent for the past two years an increase of 32 per cent in sheep and goats, and nearly 13 per cent in cattle, horses and swine.

### MANURE A NECESSITY

Another Reason Why You Should Keep a Few Pigs or Chickens

Farm Adviser Carl Williams writes that in traveling over Sacramento County he has noted numerous orchards badly in need of organic matter but in which there are no cover crops, either natural or artificial, growing. He adds:

"How can an orchardist expect to get a good crop of fruit from land that is so dead a cover crop won't grow on it? No matter what he expects it is a sure thing he won't get it. The only way to rebuild the soil of such an orchard is by manure. Manure must be applied first before a cover crop will grow. Manure and proper cover crops with lime will bring this land back to its original productiveness. You can't buy manure, either the price is too high or you can't get it. Therefore, keep some livestock and produce it. No man has a right to call himself a farmer who plays a trick like that on nature and gets away with it."

### CATTLEMEN'S MEETINGS

A series of meetings of cattlemen of California in conjunction with members of the federal live stock commission and of the United States forest service have been held at many points in California. One held in Los Angeles last Friday, while not largely attended, brought together a bunch of representative cattlemen, and Assistant District Forester Rachford made address outlining efforts which the forest service is making to aid in greater beef and mutton production. President Nares of the California Cattlemen's Association also spoke of the willingness of the cattlemen to aid in every way. The question of markets was referred to as calling for some attention, and representative packers, Frank Hauser and Mr. Kelly, representing two large Coast packing house interests, expressed their desire to aid. Chairman True of the federal live stock commission was not present at the Los Angeles meeting, but so far as he can command his time is assisting in the campaign.

### VENTURA WILL IMPROVE LIMAS

The Lima Bean Growers' Association is backing County Agent Essig of Ventura in his work among members of the farm bureau along the line of selecting and improving bean seed. Systematic work will be undertaken by a large number of growers.

One festival day which has been consistently observed by one town in this state is May Day, observed by Dixon, Solano County. The festival this year instead of being held on May 1 was deferred until a more convenient date, May 4. Queen Dorothy extends to the Cultivator and all its readers hearty greetings.

## TAGUS

### Percherons

Large stud of prize winners to choose from.

Fillies, colts, brood mares or stallions old enough for service for sale at all times.

Write for price list to,

(Horse Dept.)

Pacific States Corp.

Tulare, Cal.

H. G. MERRITT, Jr., Manager

## APPLETON Silo Filler

Its new features save you money. For years famous for dependability, great capacity and light running, the Appleton now has new features which make it the biggest labor, time and money-saving silo filler. Get the proof—free catalog describes these improvements. Write today.

H. C. Shaw Co.,  
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Two FREE Books

Four Sizes

## PASTURE

Summer Feed for  
450 to 500 Head Cattle  
May to Nov. inclusive

INQUIRE OF

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## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy

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## AYRSHIRES

REGISTERED

Herd Sire, Dairy King of Arizona  
CHOICE BREEDING STOCK FOR SALE

A. MACMINN

Phoenix Ariz.

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Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.

For particulars write

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Expert Live Stock Auctioneers

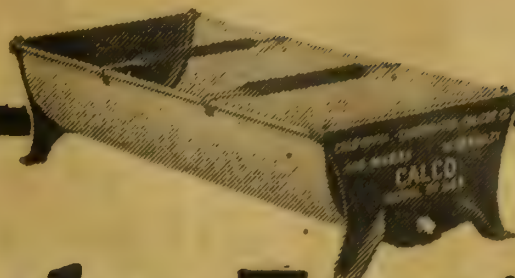
Pure Bred Stock Sales a Specialty

Sales conducted in all parts of California and adjoining States. Twenty-five

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## Calco Troughs

Raising hogs for profit demands sanitary and easily cleanable drinking and feeding troughs.

Calco Troughs—with round bottoms and smooth metal sides—are easily cleanable. Cross bars prevent hogs lying in troughs.

Made of rust-resisting Armco Iron and cast iron—strong, rigid, yet light.

The low cost covers years of use and service.

Diameter	Depth	Length	Price
10 1/4"	5-5/16"	24"	\$ 2.75
10 1/4"	5-5/16"	120"	6.55
14"	7-3/16"	24"	3.70
14"	7-3/16"	120"	8.20

Other models in same depth and diameter 40 and 60 inches in length.

Simply attach check to this advertisement, giving name, address and size wanted, or write for detailed price list.

California Corrugated Culvert Co.

WEST BERKELEY  
408 Parker Street

LOS ANGELES  
419 Leroy Street



## Kansas Germ Free Fluid Vaccine For BLACKLEG

This seal is our word of honor and your protection. If it is not on the label of every bottle don't use it. Only the original carries this signature.



DENVER, COLO. WICHITA, KANS.  
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Made by Dr. O. M. Franklin, Originator  
Holds the record of immunizing more than a Half Million Calves against Blackleg with

— only one handling of each calf — has stood the test of time—easy and safe to use—cannot give the disease to calves or spread it in pastures.

Leading cattlemen use it exclusively and recommend it to their friends—ask any of them or write to the nearest office for references and free Booklet on Blackleg.

The Kansas Blackleg Serum Co.

## Don't Overlook a Necessity!



Hot weather, like it did last year, will find you without a necessity. Buy now and be prepared to cool your milk and cream.

### The Chilly King Cooler

is a cooler that is easily kept clean; the milk flows on the outside cooling surface which is absolutely seamless and free from dirt collecting cracks or corners; 100 per cent efficient.

Write for free descriptive circular on coolers.

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WEBER'S TUBULAR SANITARY MILK COOLER.

O. J. Weber Co.

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Clean and Clear as Water



Awarded Gold Medal Pan-Pac. Expo.

## For Calf Scours

B-K treatment is saving many calves. Scouring calves indicate a germ infection that is likely to run through your entire herd with serious losses.

The loss of one calf is bad enough, but nothing compared to your loss when the infection spreads—as it will unless checked. Then your year's work in building up your herd is wasted—your profits lost.

Leading breeders testify that B-K stops scours. It is powerful in killing germs. When used internally B-K kills the germs in the mouth, throat and digestive tract, heals inflamed membranes, relieves irritation. B-K may be given freely in drinking water.

If your dealer does not have B-K, send us his name.

FREE BULLETINS: Send for complete information—"Special trial offer" and our calf bulletin No. 136.

General Laboratories

3128 So. Dickinson St.  
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## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

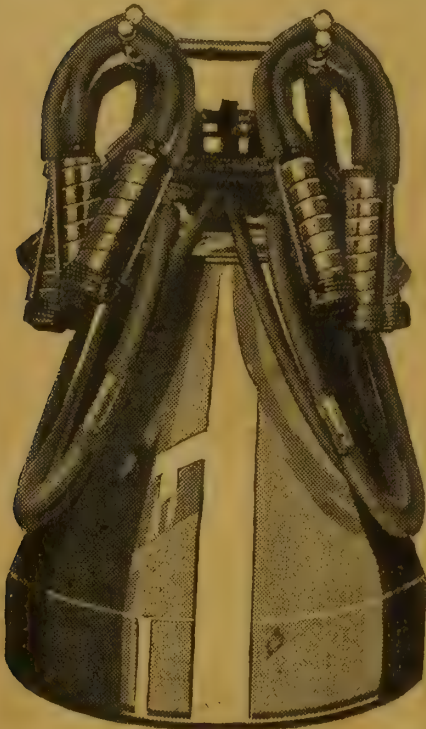
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## The Labor Problem Solved



**ONE** man with a Perfection Milker can do the work of three men at milking time. In case of emergency your wife or your little boy or girl can do it.

The Perfection milks as the calf does—suction, downward squeeze, release. The Perfection is simple. It does not easily get out of order. No harness to bother with. The Perfection teat cup fits all sizes of teats. The pail is made of "Wear-Ever" aluminum, easy to clean and non-rusting.

L. C. Richards of Grand Forks, No. Dak., says:

"The Perfection Milker is doing fine. We milk 40 cows in an hour easily and the men like the work. With the present scarcity of help, I am afraid to think of what might happen if we did not have the Perfection."

C. E. Van Meter of Loveland, Col., says:

"The Perfection Milking Machine is giving entire satisfaction. We are saving one man's work with it on 20 cows, which will pay for the machine in 10 months."

Let the Perfection Milker relieve you of the labor problem and you will find that the world will seem much brighter.

Write for your free copy of our new illustrated catalog. You will find in it much valuable information.

**Perfection Manufacturing Company**

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**BAG BALM**  
MADE BY THE KOW-KURE PEOPLE

is a great healing ointment that should find a place in every dairy. It assists the normal, easy milk yield by keeping the udder healthy and free from sores, cuts, chaps, bruises, cracks, bunchees and inflammation. Caked Bag responds quickly to the penetrating, healing powers of Bag Balm. Cow Pox, fever spots and any exterior sore are promptly removed. Have Bag Balm on hand to keep little hurts from getting big.

Sold in generous 50c packages by feed dealers and druggists. Write for free booklet, "Dairy Wrinkles."

DAIRY ASSOCIATION CO., LYNDONVILLE, VT.

Just One of My Good Ones

**Educator's Pet 541362**

A splendid sow bred to King Orion Cherry who was first prize at Ohio and Indiana. She is out of Educator 2nd out of Educator, out of Ohio Chief. She carries Crimson Wonder A and Crimson Chief blood. Her blood lines are the best in the world.

GET ONE OF HER PIGS

**H. P. Slocum and Sons**  
Willows, California

**DUROC JERSEYS**

We are selling a hog that a farmer will want to buy at a price a farmer can afford to pay.

Write for illustrated booklet telling about our Berkshire herd and

**Star Leader**



**ECONOMY STOCK POWDER**  
FOR HOGS, HORSES, CATTLE AND SHEEP

Eliminate Bloating, Abortion and any derangement of the system by feeding Economy Powder regularly. Will also check and eliminate calf scours.

WRITE FOR FREE SAMPLE AND STOCK BOOK.

**ECONOMY HOG AND CATTLE POWDER CO.**

Hearst Bldg., San Francisco, Cal.

## RECEIPTS AT STOCKYARDS IN MARCH

Receipts of cattle and hogs at stockyards in the United States during March of this year were greater than receipts in March, 1917, according to the monthly stockyards report issued today by the bureau of markets, United States department of agriculture. Receipts of cattle and hogs for the three months of 1918 exceed receipts for the same period in 1917.

March receipts at 56 yards were: Cattle, 1918, 1,688,029; 1917, 1,324,995; hogs, 1918, 4,372,136; 1917, 3,367,588; sheep, 1918, 1,223,120; 1917, 1,232,543.

**Total Shipments from Stockyards**  
Shipments of cattle, hogs and sheep from stockyards all showed increases during March, 1918, over March, 1917, and the first three months' total for cattle and hogs was greater in 1918 than in 1917. Total shipments for March, 1918, were: Cattle, 642,910; hogs, 1,707,170; sheep, 552,397. The March, 1917, figures were: Cattle, 469,187; hogs, 1,151,787; sheep, 439,840. Stocker and feeder shipments as a class, included in above figures, also showed increase in March, 1918, over March, 1917.

More cattle and hogs were slaughtered at 45 cities in March, 1918, than in March, 1917. The figures, giving 1918 totals first, were: Cattle, 997,115, 810,507; hogs, 2,625,400, 2,220,476; sheep, 653,783, 782,552.

Increased receipts and shipments of horses and mules at 43 cities are shown by the report, the March figures, with 1918 given first, were: Receipts, 117,768, 109,108; shipments, 114,076, 107,109.

## THE HOG OF TODAY

Written for California Cultivator by Walter E. Gatton

The history of the hog industry of the United States is of the most wonderful interest, not only in the enlargement of the enterprise, but in the improvement of type by careful breeding. It is safe to say that more improvement has been made by breeders of hogs than any other class of breeders. This progress dates from 1865 and shows a revolution in the standard of the various associations, so that instead of the old rough, slow growing hogs of long ago, we now have the vigorous, easy feeders, weighing from 150 to 250 pounds at six months of age, and many boars of various breeds weigh from 500 to 1000 pounds at from two to four years of age, and sows of the same age weigh from 300 to 750 pounds. These hogs go to flesh instead of lard, and thus make short and thrifty feeders. Moreover, the breeders of today are carefully selecting their breeding stock and the development is steadily increasing.

## Field Notes From the Live Stock Men

Eldorado Winifred, the senior two year old registered heifer that recently made official records of 25.15 pounds butter from 529.5 pounds milk in seven days has now completed her 30 day official test with a production of 2416.2 pounds milk and 99.02 pounds butter, averaging over 80 pounds milk per day for the period. She is owned by Alex Whaley, Tulare, who bred her, and who also bred her dam, Winifred Hotaling 3d, the 32.19 pound cow that sold for \$1750 in the Guaranty Sale.

Hollywood Farm, Hollywood, Washington, will consign six splendid animals from their herd of registered Holsteins to the great Milwaukee sale to be held in June following the annual meeting of the Holstein-Friesian Association of America.

The stocker and feeder market at Fort Worth, Texas, has strengthened slightly, following good rains, though the improvement is not so marked as yard traders anticipate it will be in a few days. There has not been a great deal of life in the stocker and feeder trade that recently has taken only the better grades, which have been scarce.

Market-ward movement of fat lambs and cattle from the Arkansas Valley of Colorado feeding district during the first 15 days of April amounted to 14,333 sheep and 1936 cattle, which practically equalled the number shipped during the last half of March. A total of 47,393 sheep and 10,499

## THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

**Gombault's Caustic Balsam**  
IT HAS NO EQUAL

For the Human Body

It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Bolls, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$100.00 paid in doctor's bills."

Price \$1.50 per bottle. Sold by druggists, or sent by express prepaid. Write for Booklet B. THE LAWRENCE-WILLIAMS COMPANY, Cleveland, O.



**SANTA ANITA RANCHO**



Anaokia Breeding Farm

## Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahrudd we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahrudd, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

## Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

## Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence invited

Anita M. Baldwin

Santa Anita

W. H. Taylor, Supl.

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## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

## REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchesne and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

**Whittier State School**  
WHITTIER, CALIFORNIA

## Shorthorns

Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

Visitors welcome — information cheerfully given.

**T. T. Miller**

So. Normandie St., Los Angeles, Cal.

## Duroc-Jersey Hogs AT IRELAND

Ranch at Owensmouth  
City Office: 1219 Brockman Bldg., Los Angeles  
Spring Boars by Orion Cherry King V (Reformer) For Sale



cattle was left on feed in the valley April 15. For the first time since January there were no reports of any cattle or sheep being taken off feed, due no doubt to an advancing market, the present tendency being toward keeping the stock in feed lots as long as possible.

Practically \$70,000 realized from carlot sales of hogs on the Omaha market since late in February has been turned over to local chapters of the Red Cross in the communities from which the hogs were contributed.

Our representative has just visited the L. A. Denker herd at Saugus and certainly saw some very fine Hampshires. Mr. Denker has about 30 fine brood sows and about 100 spring pigs. Director is at the head of his herd and now weighs close to the 1000 pound mark. Zodiac Wonder, the first prize under six months pig at the state fair last year, has developed into a first class prospect for the fall shows. He was bred by Mr. Denker and is a hog that any breeder would be proud to say he bred. Mr. Denker expects to show 22 head at Sacramento and about 65 or 70 head at the Liberty Show this fall. They are making their self feeders from the government plans and they are surely first class feeders.

Wm. J. Hanlon, an attorney, and Joseph Hurley, a civil engineer, are contemplating starting a fine herd of hogs in Los Angeles County. They have not definitely decided on what breed or exactly when, but it will be in the near future as they wish to make a big show this fall. They expect to get their entire herd from the best Eastern breeding.

The asylum at Patton recently purchased a few fine specimens of Hampshire hogs from the Llano Vista Rancho. They wish to experiment with these hogs along with the other breeds.

Fred Hughes, Los Angeles, has branched out into the greater industry, the hog business. Mr. Hughes selected for his choice the Hampshires, having bought a few extra fine animals from the Llano Vista Rancho of Perris.

A. J. Wallace of Sunland has started a nice herd of Hampshires, having bought his stock from the L. A. Denker herd. Mr. Wallace has certainly shown good judgment in his selections as he has some very fine specimens. His pigs were weaned at eight weeks and weighed 39 pounds, showing that Mr. Wallace also knows how to care for little pigs. He expects to have his pigs ready to show at the Liberty Show this fall.

Mr. Jamison of Tehachapi has just purchased 25 more bred Hampshire sows from the Conejo Ranch, which were shipped this week. Mr. Jamison is getting a very extensive herd of Hampshires, as this makes 75 brood sows recently purchased from the Conejo.

Mr. Kirkham of Zelzah purchased a fine lot of brood sows from the Conejo Ranch. There are some excellent sows in this herd.

Geo. A. Murphy reports sale of 11 Berkshire hogs to Thomas & Ettinger of Rio Vista.

#### Book Review

#### SOUTHERN PORK PRODUCTION

"Southern Pork Production," by P. V. Ewing, Texas agricultural experiment station, published by Orange Judd Company, New York; \$1.50 net.

As his title suggests, Professor Ewing's book fits itself to southern conditions. Special emphasis has been placed on the practical side of pork production. Southern hog growers have been freely consulted, and as Professor Ewing says in the preface "The farm press of the South has assisted materially in the preparation of the manuscript."

There are ten chapters touching upon economic aspects, principles, breeds, judging, showing, feeding, management, diseases and their control, marketing, and the last chapter is given to pork—its composition, as a food, slaughtering, classification, pork cuts, for home use, time of butchering, killing, scalding, scraping, etc.

The book opens with discussion of the importance of soil conservation and of the advantages offered by live-stock and especially hog growing in soil upbuilding. While the book is sectional to an extent, its 286 pages are so full of practical information that it is of value to every farm library.

**BESS BURKE ORMSBY**  
Minnesota has the honor of having a 40 pound cow. The pure bred Hol-

stein, Bess Burke Ormsby 203801, recently completed her test with the production of 42.31 pounds of butter

in seven days, the 28th pure bred Holstein cow that has yielded more than 40 pounds of butter in a week.



Bess Burke Ormsby

Bess Burke Ormsby has a record of 21.39 pounds of butter in seven days as a two year old with a yearly record of 856.46 pounds of butter made from 17,935.7 pounds of milk. Her next record was made at the age of four years, one month, at which time she yielded 29.32 pounds of butter from 553.1 pounds of milk in seven days. This time she freshened at two months over five years and her figures for the first seven days were 42.31 pounds of butter made from 558 pounds of milk. She is running very nicely and will be continued for a yearly mark. Her sire is Sir Pietertje Ormsby Mercedes 186784. Her dam is Spring Brook Bess Burke 98734. She was bred and is now owned by E. C. Schroeder, Moorhead, Minnesota.

The return ticket for our boys in France will be secured largely through American savings of wheat, sugar and fats.



## Facts you should know about the market for live stock and meat

*In Swift & Company's  
1918 Year Book. Sent FREE  
on request. Write for copy*

**T**HIS book presents, clearly and frankly, a study of live stock buying and meat selling—a description of the market conditions that determine the prices you get for your live stock.

It describes the producing and marketing steps from your farm to the table of the consumer. It explains also how the part played by Swift & Company enables you to obtain for your live stock the highest market figures.

The full value to you, of this part played by Swift & Company—how it affords you a ready cash market for your live stock, and how it passes along the meat products to the consumer on the lowest operating expense and profit and with highest efficiency—is shown in this book.

Write for your copy of Swift & Company's 1918 Year Book now—a postal will do. Every page presents facts that you as a stockman and farmer should know.

Address Swift & Company  
4127 Packers Avenue  
Union Stock Yards, Chicago

Swift & Company, U. S. A.





## Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 31,000 readers, weekly.  
Liner rates: Single insertion 3c per word;  
yearly contracts 2½c per word; 35c per issue minimum charge.

### TREES

**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

### AVOCADOS

The Spinks is easily the best variety that has fruited in California. It combines the good points of all the others with none of their defects. A rugged, prolific tree and a superb fruit. Field grown trees of this and other well known varieties, including the Rey, Linda, Sharpless, Fuerte, I. X. L., Caribou and others, \$3.00 to \$5.00 each. Liberal discount in quantities. W. A. Spinks, Duarte, California.

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Avocado Trees**, budded, Fuerte variety; a hardy, vigorous grower, bears a rich, delicious fruit. Eighty per cent of all avocado trees planted this year were of the Fuerte variety. Our trees are field grown, straight, symmetrical, with large balls. Send for illustrated, descriptive circular, showing prices. WEST INDIA GARDENS, Altadena, California.

**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencias on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, California.

**By Far the Lowest Priced means of reaching a buyer for what you have to sell is through classified advertisements in California Cultivator.** The cost is only 3 cents per word per issue, with a minimum of 35 cents.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Valencia Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**For Sale**—About 25,000 uncultured lemons, Navel and Valencias of the very highest character of pedigreed stock must be removed at an early day from present location. Will sell in the field at 10 cents apiece. Apply John Hinkle, Lordsburg, California.

**Closing Out**—15,000 choice Orange and Lemon trees for sale. Marsh seedless grapefruit, Eureka lemons, Washington Navel and Valencias. Two year old buds, 30 cents each or in hundred lots 25 cents. F. A. Anderson, Elsinore, California.

**For Sale**—All Kinds Citrus Nursery stock, 1 and 2 year buds, fine roots. Y. Yamaguchi, Box 574, Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

**For Sale**—Valencias, Washington Navel and lemon trees, 2 years old, size ¾ inch to 1 inch up. Thirty thousand trees altogether. M. Matayoshi, P. O. Box 4, Baldwin Park, Cal.

**Avocado Trees**—Budded; the FUERTE variety is hardest, and bears fruits of the highest quality. Send for new illustrated descriptive circular. WEST INDIA GARDENS, Altadena, California.

### SPECIAL

**SHARPLESS AVOCADO TREES**  
Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsurgi, 23rd St., Upland, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, La-Manda Park, Cal.

**For Sale**—Orange seed and seedlings, budded citrus and avocado trees. Paul B. Magee, Colorado and Huntington Drive, Pasadena, Cal.

**For Sale**—Citrus trees and Seed stock at your own price. Write or come. B. C. Dodson, Glendora, California.

**Budding**—Citrus, Avocado. Paul B. Magee, Colorado and Huntington Drive, Pasadena.

**For Sale**—Choice two year old Valencia trees. A. O. Haver, San Dimas, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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Fords can burn half coal oil, all distillate, or cheapest gasoline, using our 1918 Carburetor; 34 miles per gallon guaranteed. Easy starting. Great power increase. Attach it yourself. Big profit selling for us. 30 days trial. Money back guarantee. Styles to fit any automobile. Air-Friction Carburetor Company, 313 Madison Street, Dayton, Ohio.

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**Tested Bean Seed**—Hardy, upland grown seed beans will increase your yields. We carry a complete stock of Teparys, Mexican Red, Pinks, Lady Washington, Small Whites, Red Kidney, Blackeyes, Bluepods and Pintos. All seed tested by U. S. Department of Agriculture. Get our booklet Bean Varieties and their Local Adaptations. A dictionary on bean seed. Write for prices before planting season. Desk B, BOMBERGER SEED CO., Modesto, California.

**Alfalfa Seed**—Others come and go. We have been in the alfalfa seed business, growing and selling, for forty years. We handle vast quantities of it. We make it a specialty. Our customers dot the entire globe, practically. If you want reliable stock, seed that can be depended upon, either alfalfa or other seeds, write or wire us for quotations, samples and advice. V. A. Peterson Alfalfa Seed Co., Arbutuck, Cal.

**For Sale**—Recleaned Alfalfa Seed showing high germination test and free of dodder or noxious weed seeds. Have more seed than I can use. Let's deal direct. Price 19c per pound. Orders filled promptly. Send your order today. James Henry, Box 986, Modesto, California.

**For Sale**—White Egyptian corn, Feterita, Red Milo Maize, Dwarf White Milo Maize, Common California Alfalfa, Common Choice Recleaned Arizona Alfalfa, S. Peruvian Alfalfa, Amber Cane, Sudan, Artichokes. Wholesale prices in large quantities. Hay in carloads. Box 501, Fowler, California.

**Plant a Few Acres of Dwarf Milo Maize** for seed. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sudan Grass Seed**—We offer a limited quantity of fancy recleaned Sudan at an attractive price. Write today for samples and prices. Orders filled in the order they are received. Desk B, Bomberger Seed Co., Modesto, California.

**Tomato Plants**—Hardy plants grown only from best selected stock of seeds known to the "Canning Trade." Several thousands of both Early and mid-season varieties. Price reasonable. Tinell, Yucaipa, California.

**Gladiolus Bulbs** that will bloom. Mixture of new named varieties all colors. Dozen 40 cents. Beautiful Pendleton, dozen 60 cents. Post free. Cash with order. W. H. Kingsley, Hayward, California.

**Corn, Plant It**—Squaw Hickory King, King Phillip, 1 pound 10c, \$8.00 per hundred pounds f. o. b. Los Angeles. Western Seed Co., 116 E. 7th St., Los Angeles.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Sudan Grass Seed**, clean and mature and free of Johnson grass 25c pound in small lots, post prepaid, 20c pound in 100 pound lots, F. O. B. Perris. E. C. Talbot, R. F. D. Box 5, Perris, California.

**Pumpkins** make good stock food. Yellow crook neck Cushman 85c per pound, post paid. Western Seed Co., 116 E. 7th St., Los Angeles.

**For Sale**—Yellow sweet potato plants, fine and large ones. Send for price. C. J. Hart, R. D. 1, Box 35, Garden Grove, California.

**For Sale**—Pink beans, Choice seed, Hand cleaned. Ten cents per pound in lots of fifty pounds or over. A. Osburn, Redlands, Cal.

**Strawberry Plants**—Everbearing, strong, northern grown. Americus, \$1.50 per 100; \$3.00 per 250. F. I. Moffet, Ellensburg, Washington.

**Soudan Grass**—For Sale. Large or small lots. Prices right. Immediate delivery. Write for quotations. A. W. Greathead, Box 270 R. D., San Jose, California.

**For Sale**—Amber Cane Sorghum seed in lots of 100 pounds and over. For prices write P. O. Box 507, Atwater, California.

**Red Jersey Sweet Potato plants** 50c per Hundred. Post Paid. R. M. PLYMPTON, Arroyo Grande, California.

**I Have a Ton of Sudan and Alfalfa Seed.** Prices right. Pure. H. S. Garrison, Murrietta, California.

**For Sale**—About 500 good avocado seeds for immediate use. C. P. Taft, Orange, California.

**For Sale**—Yellow Sweet Potato plants \$2.50 per 1000. W. L. Lutz, R. F. D. 3 Box 7, Santa Ana.

**For Sale**—Genuine dwarf milo seed. Any amount to two tons, 5 cents pound. B. A. Overland, Route 1 Box 23, Visalia.

### LIVE STOCK

**Sheep for Sale**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Moo, St. Helena, California.

**For Sale or Exchange** for land near coast, large black registered Jacks and Jennets, good as can be found in California. Address A. L. Allen, Perris, California.

**Registered Shires**—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

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**Lumber-Sash-Doors-Plumbing - Supplies**—Building materials of all kinds. New and second hand. A. R. W. shingles 60c per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

### FARM LANDS FOR SALE

**For Sale**—340 acre river ranch near Modesto on Tuolumne River, 160 acres upland, deep rich sandy loam, free from alkali. 100 acres of which is checked up, balance all ditched. 60 acres in alfalfa, particularly adapted to growth of alfalfa, beans, trees and vines. 180 acres of bottom land rich sediment loam, all cleared with exception of about 30 acres. 100 acres being rented under term lease for \$1800, per year, some of the best prune, Bartlett pear, bean and garden land in this part of the state. 3 acres pear orchard growing on property at present. The land is well improved with good buildings to value of \$7500 and fences to value of \$2500 all in good condition and conveniently arranged for handling of dairy stock and hogs. Included with the property is 3 head horses and harness, full set of farm machinery and tools, five head cows, 1 Jersey cow, and chickens, all growing crops with exception of rented land, consisting of 90 acres of barley, 40 acres Egyptian corn just planted, 60 acres alfalfa hay and 3 acres of pears. This ranch is in first class condition and will bring income at once. Price \$225 per acre. Mortgage \$26,000 for 8½ years at 6 per cent. Parties desiring to view property, not agents, will be met by owner in Modesto at any time and shown over property. Address G. E. Brinkerhoff, Route D, Box 122 A, Modesto.

**Buy Land Where They Raise the Prize Crops**, in Snohomish County. 40 acre farms, \$25 per acre. Ten yearly payments, 8 per cent interest. Visit our offices and see the great exhibit of PRIZE WINNING Vegetables, Fruits, Grains, Alfalfa and other Grasses raised on adjoining farms. They prove our claims that this is the best land in Western Washington. Paved roads. Four passenger trains a day. Graded Schools, Cannery, Creamery, Cheese Factory. Plenty of work for the laboring man in the mills and camps, where 75 settlers are all boosters. DON'T LOSE A DAY in asking for our illustrated literature. BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

**No. 1053—14 Acres**—Price \$1700. Well fenced, good frame dwelling, 2½ stories with store, in excellent neighborhood. Has stable for horses and cows, barn, garage, poultry house and other out-buildings; fruit. 5 miles from County seat, near railroad station. An excellent business proposition and a pleasant country home. Catalogue. Russell Realty Co., Baltimore, Maryland.

**For Sale or Exchange**—60 acres rich, alluvial silt soil. Level. Irrigated, ready for crop. Real alfalfa land. Domestic water on place. Plenty of irrigation water. 1¼ miles from town, churches, grammar and accredited high school. Half cash, half trade, anywhere. Make your proposition now. Chas. McNeely, Alhambra, California.

**For Sale**—A Big Producing 320 Acre vineyard, 200 acres muscats, 40 acres Thompsons, 35 acres Malagasy, 10 acres Emperors, also figs and olives. Buildings and equipment. Income about \$30,000. Terms \$30,000 cash, balance easy. 100 Acres rich level land, no alkali or hard pan. Water right and pumping plant, buildings, fenced and cross fenced. Near town and high school. Raw land selling at \$150 per acre. Price for quick sale \$165 per acre. R. Vallidigham, 2514 Tulare St., Fresno, California.

**For Sale**—40 acres, 8 miles from Sacramento, on macadamized road. 10 acres alfalfa, 10 acres tokay grapes, 10 acres oats, 150 pears, 50 walnut trees. Family orchard, two pumping plants, barn, 8 room modern house, \$9,000, terms. Owner, R. 2, Box 1570, Sacramento, California.

**For Sale**—18 acres land in Jasmine citrus lands district, Kern County, S.W. cor. Sec. 12. Cheap for cash. F. S. CHAPMAN, Piru, California.

**For Sale or Exchange**—4 acres in city of Santa Cruz, for Los Angeles or Orange County acreage. William Richard, Santa Cruz, Cal.

**For Sale**—40 acres good land close to Exeter, California, \$100 per acre. J. E. Wright, Visalia, California.

### WANTED

**WANTED—WORKING FOREMAN FOR 300 ACRE INSTITUTION FARM ON COAST.** SINGLE MAN OF CLEAN HABITS. MUST BE FAMILIAR WITH MODERN FARM METHODS, AND CARE OF LIVE STOCK. THIS IS AN OPPORTUNITY FOR THE RIGHT MAN. POSITION PERMANENT AND SALARY ADJUSTABLE WITH ABILITY. STATE QUALIFICATIONS IN FIRST LETTER AND HURRY. ADDRESS BOX 627, SANTA BARBARA, CALIFORNIA.

**Will Manage Ranch**—A strong, experienced and reliable Scotchman desires a position as manager on a ranch. He has had eight years experience in California and understands the breeding and caring for the various lines of live stock; also field crops and orcharding. He is a man of family and a naturalized American citizen. Address Richard Duncan, 1037 W. 43rd St., Los Angeles, California.

**Wanted**—Position with working interest as manager of large ranch. Have had wide experience in all branches. Part salary, balance in percentage of profits made. Lock Box 220, Oakland, California.

**Wanted**—Experienced pruner for citrus trees. Man between 30 and 40. In answering state experience and wages. NATHAN W. BLANCHARD INVESTMENT CO., Santa Paula, California.

**Wanted**—Permanent Position by expert traction engineer. Can handle any make. Caterpillar preferred. O. Care Cultivator.

### GEESSE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now they won't last long. Chas. McNeely, Alhambra, Cal.

### MISCELLANEOUS

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

### POULTRY

**White Leghorn Baby Chicks**—Here is our sworn income for taxes: January 1, 1917, we had 1968 hens, net income to January 1, 1918, \$3,339.60. Had it been less, we would have reported less. The income from our hatchery is a separate account and not included in our income report. All grain fed bought at wholesale. Our White Leghorns pay. If you want to have an income from poultry order babies from us. Chicks ordered now for May delivery will be \$10.00 per 100. Lyon Hatchery, Gardena.

### RABBITS, AND THEIR CARE

We are distributing agents for the Western Rabbit Book—one of the best and most authoritative books of its kind published. Tells you how to raise, feed, breed and care for rabbits.

### WESTERN POULTRY BOOK

We are California distributing agents for Mrs. A. Basley's well known Western Poultry Book—a practical book by a practical poultry raiser. Special price, 50 cents.

### GERMAIN SEED AND PLANT CO.

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**Model Poultry Farm**, White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

**Baby Chicks**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Baby Chicks**, 8-12 week pullets, eggs. Breeders, from 200-233 trapped nest layers. Eight popular varieties, clearing \$5.00 yearly. Everything reduced price. May. Limited number. Customers clearing \$59 on 10 hens, \$617 on 110 last year. James Heeson, Pasadena, California.

**Baby Chicks**, Ancona, Rhode Island Reds, \$16.00 per 100. Barred Rocks, \$17.50. MacFarlane Quality White Leghorn, \$12. Many other breeds hatching every week. D. E. Doke, 743 So. Los Angeles St., Los Angeles.

**For Sale**—Anconas the most popular breed today. "There's a reason." Small eaters and heavy layers of large eggs. Five breeding pens. Eggs of guaranteed fertility \$1 per 15; \$6 per 100. A. E. Nelson, El Monte, Cal.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 15. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

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**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**East Side Poultry Yards**, White Leghorn chicks every week from culled and Hoganized stock, two and three years old. Prices reduced for May. E. J. Look, 255 So. Eighteenth St., San Jose.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks** with the Stevenson Hatchery, Watsonville, Cal.

**Headquarters for Baby Chicks** of standard breeds. Shipped to all points within 40 hours' travel from Fresno and on Freemarket. Phone 2544W, Hall & Rohrs, cor. Clark and Belmont, Fresno, California.

**White Leghorn Baby Chix** from heavy-laying (Hoganized) stock; \$10 per 100. We guarantee safe arrival. THE PIONEER HATCHERY, 409 Sixth St., Petaluma, California.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns.** Folder and price list. B. W. Archibald, Soquel, Santa Cruz County, California.

**Chix**—Buff, Brown, and White Leghorns (Barron strains). Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**"Eastman's Bred-to-Lay"** Hoganized, trap-nested Barred Plymouth Rocks; April chicks, March eggs. Fairmead Poultry Farm, Fairmead, California.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**Trapped Nest White Leghorns**—Official 30 egg records, also eggs from above \$2 per 15, \$3 per 100. Circular. Hudson Poultry Farm, Escondido, Cal.

**For Sale**—Barred Rock, R. I. Red and White Leghorn chicks. Reduced prices. Fine stock. Madera Hatchery, Madera, Cal.

**"Barclays Barred Beauties"**—Grand exhibition cockerels, cocks and eggs. G. S. Barclay, R. A. Lindsay.

**Famous Tom Barron White Leghorn** eggs \$2.00. E. F. Barclay, Lindsay, Cal.

**For Sale**—Pheasants and eggs. Six varieties. Box Y, Watsonville, California.

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**Go into Business for Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

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**For Sale**—Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.



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**Make Big Money**—You can, even at present price of grain, if you have our famous Whitten Ranch Poland-Chinas—the mammoth, prolific, fast-growing, easy-feeding kind. Special sale of weaned pigs, many sired by our great \$1000 Jumbo Model. Prices reasonable; satisfaction guaranteed; everything immune. Send for free illustrated booklet, "Hogs for Profit." Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 519B Marsh-Strong Bldg., Los Angeles.

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## —GRAPE WILD FARMS—

At present the oldest boars we have to offer are of September and October farrow. They are by Royal Superbus and Fashion Longfellow 27th. We also have a limited number of gilts to offer, bred for May farrow.

A. B. HUMPHREY,  
Escalon, San Joaquin County, California.

Poland-Chinas—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

"Billiken" Chester Whites—The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

**For Sale**—Must sell at once—Small herd of Duroc-Jersey hogs. Headed by "Red Rock Defender" an 800 pound boar, just in good breeding condition. Four large brood sows with about twenty weanlings unsold. One 8 months boar 280 pounds. Several gilts.

R. Q. WICKHAM, ELDRIDGE, CALIF.  
Registered Poland-Chinas of the medium type. Three sows to farrow their fourth litters in June and two boars, one two years old sired by Panama Chief. The other 3½ years old. Prices very reasonable. Wm. D. Bear, Chalfant, California.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

Copro (Made from cocoanuts)—Best hog feed. Your dealer, or Lee Chamberlain & Co., Los Angeles, Cal.

Duroc-Jerseys—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

Berkshire 5 months old boar out of first prize sow. A dandy for \$35. Martin Preston, Route 1, Box 124, Colton California.

Large Type Poland-Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

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Duroc-Jerseys—We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs—"Size with Quality." H. C. Witherow, Palo Cedro, Cal.

Registered Poland-Chinas—Service boars and weaning pigs for sale now. Best stock. C. R. Hanna, Riverside, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, Cal.

Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

Poland-Chinas—A few good breeding boars. S. F. Williams, Orland, Cal.

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Toppenburg Milch Goats—Rae P. Williams, Federal Realty Building, Oakland, Cal.

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SAVE YOU HALF MATERIAL GUARANTEED USED PLOWS, CULTIVATORS, DRILLS—Extension disc cultivator, \$28.50; single disc riding plow, \$47.50; 14-in. Gilpin Deere riding plow, \$32.50; 4-gang Stockton, fine shape, \$27.50; spike harrows, \$16; mowers, \$39.50; rakes, \$25; corn planter, \$22; spring tooth harrow; sundries, cheapest in town. BEET DRILLS—Ready to ship, \$39 up. WINDMILLS, MORE FOR LESS—16-ft. mills for irrigating, \$95; 8, 10, 12-ft. mills. Now is time to get what you want, when we have complete stock ranch tools. HOW'S THIS? 50,000 gal. Redwood tank, lug hoops and 40 ft. tank stand, \$375; 1100 gal. redwood, \$13; 1500 gal. \$22; galv. drums, \$4; 30 gal. hot water boilers, \$3.50; 8000 gal. heavy corrugated galv. tank, \$135; 10,000 gal. heavy corrugated galv. tank, \$175; 900 gal. heavy riveted steel tank, \$68; wagon tanks, \$23 to \$48; new, used redwood and galv. tanks all sizes.

1200 feet fine 4-in. O. D. casing, 29½ cents. COMPLETE PUMPING PLANT NEARLY new 40 hp. West Coast engine and large double acting deep well plunger for 350-ft. well with 9-in. cylinder and 350 feet 11-in. casing cost \$4500, our price \$1950. DEMMITT CO., downtown office, upstairs, 120 N. Main St., Los Angeles.

**For Sale**—One 18 h. p. "Olds" distillate engine, mounted on wagon. One 50 h. p. "Olds" distillate engine; one 20 h. p. "Muncie" oil engine; one water well drilling rig; one wooden wagon running gear. The above used machinery may be priced at our shop. Will be sold at a very low figure. Dunn Manufacturing Co., Oxnard, Cal.

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All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

## WEISSBAUM PIPE WORKS.

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**For Sale or Exchange**—One 30-60 Hart-Parr tractor; one 6-14 in. bottom tractor plow, good repair, price \$1650. Consider horses, mules, lots or acreage. See machinery at BRILES, 216 N. Los Angeles Street, Los Angeles, or address Box 125, Upland, California.

Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**To Swap**—Fine rooming house, 8 rooms on Olive street, Los Angeles, always rented. Want ranch tools, pump, engine, pipe. Address Box M, Care Cultivator.

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Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Nevada Guernsey Farm, Yountville, Napa Co., Cal.

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies.** Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Gullford, Owners.

**For Sale**—Pure bred Holstein yearling bull, Colantha De Kol Jones 232316. Tuberculin tested, ¾ white, and a fine individual. Sire, Aaggie Lad Colantha Jewel, dam, Oak De Kol Jones 2nd. Price \$115. G. A. Whitman, 1672 Flske Ave., Pasadena, California.

Pedigreed Bull Calves, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit. tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, Cal.

Venadera Jerseys, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

Ayrshires (registered)—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix Ariz

Sunshine Farm Jerseys—Bulls from officially tested dams for sale. E. E. Greenough, Merced

**For Sale**—One registered Guernsey bull four years old. Abram Marron, Jr., Box 10, Oceanside.

Registered Holstein Bulls of various ages for sale. Milbrae Dairy, Milbrae, Cal.

Registered Jerseys—1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

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Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

**For Sale**—One 15-30 Gas Pull Rumley engine, cost \$2000.00, will take \$1500.00. Abram Marron, Jr., Box 10, Oceanside.

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## WITTE ENGINE WORKS,

3100 Oakland Av., Kansas City, Mo.  
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## Three Rules for Raising Turkeys

Written for California Cultivator By Jean A. Koethen



THE baby turkey is an anomaly. Thoroughly domestic as it is in its habits, it is still undomesticated. Fonder than chickens of the barn yard and the back door step, it is essentially a creature of hill and forest. It eats out of the hand of its caretaker when it is three days old and is a victim more often than not of the very tenderness it has encouraged. Poor little turkey! It is wild and doesn't know it. Believing itself a really, truly member of the family, it trusts itself absolutely to the judgment and intelligence of its caretaker, and this very trust is its undoing.

Young chicks display a good deal more intelligence than turkeys in respect to what and when and how much they eat. No chick likes new dishes. No chick will touch a particle of food with which it is not familiar until the mother hen gives permission. If there is no mother hen it must be coaxed. Few chicks, if any, will overeat. If they have had all they need, food may stand before them all day and they will not taste it. With poult the case is just the opposite. For some reason hard to understand they are unable to digest as much as chicks yet they are always ready to eat, and they do eat till blackhead gets them.

This brings me to my first rule for the care of poults, which is, Never let them eat all they want.

Blackhead is a disease which nobody, I suppose, exactly understands, yet it kills probably half the poults that are hatched the country over and is the cause of 99 out of 100 of the natural deaths of turkeys. It is most severe when it attacks very young poults but more common among those from six weeks to three months of age. After turkeys are six months old they seem almost immune, yet we are told that adult birds often have the disease without showing it and go about scattering germs wherever they go. This seems a serious matter but is not so serious as it was once considered, for more recent investigations have shown that all turkeys, young and old, harbor the germs of blackhead, but that these germs do no harm unless they are developed by overeating. This, at least, is the theory of the latest bulletin of the Rhode Island station. The plain fact seems to be that the young turkey has a very sensitive liver. As long as this organ is not overworked the bird does very well no matter where it is or what it eats. As soon as it is overworked the microbes begin to get in their work, which shows in the spotted liver of a well developed case of blackhead.

When blackhead attacks very young poults they die very quickly, apparently of a severe diarrhoea. Birds six or eight weeks old will often live a week. They are droopy, lag behind the others when they are called to meals, and do not care to eat. The head takes on a peculiar paleness which has given rise to the name, blackhead. Diarrhoea may not be noticeable at first but is always present sooner or later.

From the little we really know about the disease it seems likely that its course is quite slow. A bird that has been overfed from the day it was hatched may show no symptoms of the disease for two, three or four months. Finally it begins to droop a little, appetite is not so good as usual, head a little pale, but it keeps up for a while, only to go at last the way so many little turkeys go. In a turkey of this age the disease may sometimes be checked by liberal feeding of chopped onions and cottage cheese, but cures are rare and medicine useless.

While certain articles of food, such as clabbered milk, cottage cheese and chopped greens seem to hinder the development of the blackhead germ, and others, like cracked corn and barley, encourage them, no certain rules for feeding can be given except this one, feed always less than the birds want. Rolled oats are particularly good for all ages of turkeys, and green feed should be a part of every meal. The one best feed seems to be sour milk or cottage cheese. Mr. Hadley of the Rhode Island station says in Bulletin No. 2, "Young poults can

probably be raised successfully on many different rations taken in addition to their normal insect diet. They may do well on corn meal alone; they may thrive on no other additional food than bread and milk until they are three to four months old. The main idea is to prevent overeating of whatever they do have."

But how to prevent overeating? How shall we draw the line between what poults need and what they want? How keep the edge of their hunger keen and yet provide adequate nourishment? This is where we all fall down. Mr. Hadley thinks time feeding is the solution, and during the period of greatest susceptibility to blackhead, that is from the second to the fifth month, he leaves the tray of feed before the poults only two or three minutes, never more. This seems little enough, but my experience is that it may be too much. Three minutes is a good while for poults to eat when they are eating, as they always do, as fast as they can. I used to feed out of my hand entirely, removing it while the poults were as eager as ever, and I am sure I never fed over two minutes. When I tried time feeding the time seemed longer than it had when I trusted to my own

Continued on Page 579

## POULTRY

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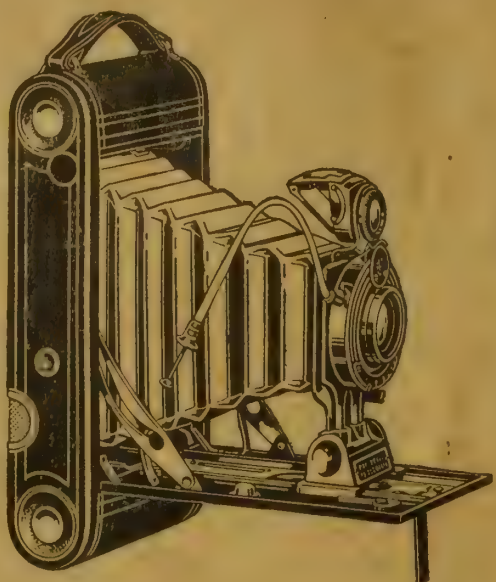


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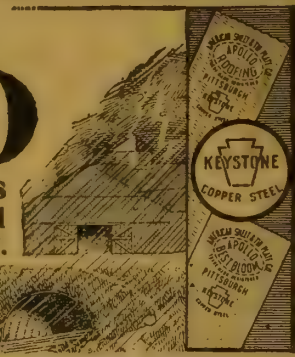
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I am the flag in the window,  
I am born of the Red, White and Blue,  
And the stars that you count on my bosom  
Are the sons I have taken from you.

I tell of a home that is saddened,  
I speak of a vacant chair—  
And a mother's heart that is longing  
For news of her boy "over there."  
I know when home ties are broken,  
And brave hearts over the sea,  
And I sigh for the lives that are given  
That the world may forever be free.

But I still have another message—  
Of lads who are loyal and true,  
Boys who are willing and eager  
To die for "Old Glory" and you.  
So pause in the day's busy hustle,  
Don't pass me with only a glance.  
Say a prayer for the boys in the home camps,  
And the ones who are Somewhere in France.  
—Camp Lewis "Over the Top."

## MOTHER'S LITTLE FLING

Continued from last week.

"In Manhattan, Kansas, I believe, watching the excitement of Camp Funston." Then at the expression on her brother's face, Mrs. Bennett suddenly sobered.

"There, there, Joshua, don't look so haggard. Mother wouldn't have worried you for the world but she thought you'd be safe at the mines for a month. I'll give you the history of Mother's wandering as far as I know it from her hurried letters. First of all, she stopped off to see Sary Ann Wilson's daughter on the other side of Kansas City.

"She was going on next to see her Cousin Abner's widow, but on the train she got acquainted with a young girl who was running away to meet her lover, 'a cowardly blatherskite of a married man,' she quoted again from the card in her hand, 'filled her head full of fool notions about being a free spirit and obeying her natural instinct. 'Natural instinct, your grandmother!' I told her. 'You turn right round and go home and mind your ma instead of those instincts that aren't natural to any nice girl.' We had to stay all night at the Junction. Lucky Joshua made me take all that money. But I took her right straight home and I guess her ma was glad enough to see her back safe, not to be hard on her. She was glad to get home too, poor child. The scoundrel!

"I stayed to the wedding; she'd had a tiff with a nice neighbor boy and gone off in a huff. It was a real nice wedding. I wore the new silk dress you gave me."

"Cousin Abner's widow's eldest son was about to have a barn raising when Mother arrived there and she turned right in and baked all the pies. She was afraid she'd got her hand out but her crust was just as flaky as when she took the blue ribbon at the county fair.

"Besides the frustrated elopement, the hastened wedding and the barn raising, she's been to a funeral—oh, no relative, just a lonely little woman on the train, who was taking her husband back to the old home for burial! She nursed a case of measles and she nearly adopted a pair of twins and at last she really headed for San Francisco, but her train was put on a siding next to a train load of troops; they were both delayed. They were all leaning out of their windows and Mother got acquainted with some of them.

"They were young things and they'd been in camp and it was hot. Some of them looked ill and all were homesick. Mother sewed buttons on for some of them. Just then sickness broke out in the camp and there weren't half enough nurses and no one to look after their mending so—Mother stayed."

"There's an express at two. I ought to have known better than to let Mother go off alone! I'll bring her straight home and you keep her here. Good-bye."

Eliza Bennett sank back on her pillows as Joshua rushed from the room.

"Joshua's a determined man but Mother set out to see Charlie and little Godfrey and I think she'll see them before she comes back."

In which surmise, Eliza Bennett proved her astuteness. Ten days later, Mrs. Bennett received a letter from her mother:

"Why in the world did you let Joshua start out on such a fool's chase? He broke his collar bone trying to ride a horse over the rough road to the post where I'm visiting now. This is no place for a man of Joshua's temperament and I'm sending him home with a trained nurse. I'm too busy to come with him. The excitement will soon be over and then I'll go on to California. Charlie and little Godfrey must be home by this time. Joshua had no business to go traipsing about the country that way. Do try to keep him at home."

Eliza Bennett lay back on her pillow and laughed the joyful laugh of an understanding daughter. — Eliza-beth Weir in *The Farmers Wife*.



## Oatmeal Pudding

One-fourth cup pinhead oatmeal or rolled oats, one cup boiling water, one and one-fourth cups hot milk, two tablespoons grated chocolate, five tablespoons corn syrup, one tablespoon butter, one teaspoon vanilla, salt.

Cook the oatmeal or the rolled oats in the water for 20 minutes. Add the remaining ingredients, and turn the mixture into a greased baking dish. Bake the pudding in a moderate oven for one hour. Serve it with or without cream.

## Rice Pudding

Three-fourths cup rice, one cup water, three cups hot milk, one-half teaspoon salt, five tablespoons maple syrup, one tablespoon butter, one-half teaspoon vanilla, one cup cold milk.

Soak the rice in the water for 20 minutes. Add the hot milk, and cook the rice for 15 minutes. Remove it from the heat and add the salt, the syrup, the butter and the vanilla. Turn the mixture into a greased baking dish, pour the cup of cold milk over the top, cover the dish and bake the pudding slowly for two hours. This pudding has an excellent flavor and a creamy consistency. It should be

served warm. It needs no sauce served with it.

## Molasses Cake

One-half cup fat, one and one-half cups molasses, one cup boiling water, one-fourth teaspoon salt, one teaspoon soda, one teaspoon ginger, one cup corn flour, one cup buckwheat flour, two eggs.

Cream the fat and add the molasses and the boiling water. Add the sifted dry ingredients to the first mixture. Add the eggs last. Bake the cake in a loaf or in a shallow pan in a moderate oven.

Apple Sauce Variation: To two cups of apple sauce, cooked until very thick, add one tablespoon butter, three tablespoons corn syrup and cinnamon as desired. Spread the apple sauce one-half inch thick over the bottom of the pan. Pour the molasses batter over the sauce, and bake it in a moderate oven. When the cake is done, turn it out of the pan so that the apple sauce is on top. Cut it in squares and serve it warm.

## HOME CANNED VEGETABLES

Even in enlightened California we sometimes hear of last year's home canned beans standing unused in their perfectly harmless glass con-



tainers because some one has caught the infection of hysteria disseminated by the "they say" nuisance. Here is a sensible editorial in "Successful Farming" which may be the means of reassuring those who need it — we hope but few.

"A very clever and cunning propaganda of fear has been spread throughout the country by the well wishers of Kaiser Wilhelm. Its purpose has been to not only discourage the women from putting up canned stuff, but to make the nation afraid to eat home canned goods that have been put up. First it was rumored that German spies had poisoned the rubber that the canning rings are made of. Then it was hinted that the canned goods this last season would give those who ate them a mysterious disease, which fear was increased because the supposed disease was discussed in a medical journal.

"Leave it to the German secret agents—they get in their work, even to getting reliable medical and other journals to print their scares! Then there was the widespread whisperings that the "cold pack" method was new, and that the stuff would not keep when canned by that process. It was also rumored that the government was going to tax or seize home canned goods.

"This propaganda was intended to keep the American housewives from saving food for home use, that other foods might be sent to the Allies. It was also intended to scare the people so what had been canned would not be eaten, for fear of poisoning or contracting some disease.

"If anybody wants to fall into the hands of the enemy before this country is subjected by conquest, then believe this nonsense about home canning. Let everybody else who is patriotic and courageous, determine to put in a bigger garden, and to can more stuff next season than ever before. Every pound of perishable food saved and eaten at home means that a pound of nonperishable food is made available for shipment to our boys in the trenches, and to our allies in great need of our food.

"If you will need more glass jars or tin cans for next season, get your supply as early as possible, for when canning season opens you may not be able to get any."

#### SWEET POTATO RECIPES

##### Mashed Sweet Potatoes

To two cups mashed sweet potatoes add three tablespoons butter, one-half teaspoon salt and hot milk to moisten. Beat until light and serve.

##### Glazed Sweet Potatoes

Four large sweet potatoes, one-fourth cup melted butter, one-half cup sugar, one-fourth cup hot water. Cook potatoes or use cold ones already boiled. Cut in half lengthwise and lay in baking pan. Add the hot water, sprinkle on the sugar and pour on the melted butter. Bake 20 minutes, basting frequently with the syrup in the pan. Serve hot.

##### Sweet Potato Pone

One quart raw sweet potato, grated; three pints milk, two eggs, one tablespoon nutmeg or allspice, one-half teaspoon salt, two and one-fourth cups sugar and one cup butter. Mix all the ingredients together and beat until smooth. Grease and flour a pan. Pour in the pone and bake one hour in a slow oven. Serve hot or cold with cream.

##### Sweet Potato Muffins

Mash very fine two cups of boiled sweet potatoes, add to it a large tablespoon butter and a little salt; whip well; now add one-half cup of milk and two well beaten eggs and flour enough to make a soft batter. Before adding the flour sift into it one teaspoon baking powder. Bake in muffin or gem pans.

##### Individual Sweet Potato Pies

Two cups sweet potato, one-half cup sugar, one and one-fourth teaspoons pans lined with crust and fill with salt, two eggs, two cups milk, one and one-fourth teaspoons nutmeg, one teaspoon cinnamon, juice and rind of one lemon. Mix ingredients well and beat until creamy and smooth. Cook until the mixture thickens. Use muffin mixture.

If you have a sweet-tooth, pull it.

#### WHEAT FLOUR SUBSTITUTES TO DATE

This is the list of wheat flour substitutes from which you may order. You will note that rye, milo and potatoes have been removed. These however may be purchased independently as desired.

Corn meal, corn flour, edible corn starch, hominy, corn grits, barley flour, potato flour, sweet potato flour, soya bean flour, feterita flour and meals, rice, rice flour, oat meal, rolled oats, buckwheat flour.

Exception—Whole wheat and Graham flour may be sold on the basis of five pounds of flour to three pounds of substitutes.

#### SUGAR TRIMMINGS

First cross off soda fountain and ice cream treats.

Reduce candy consumption to an after-dinner bonbon.

Omit icing from cakes and fancy breads.

Use fruit and nuts, candied honey or maple sugar for cake fillings.

Sweeten fruit drinks with honey or corn syrup.

Replace white sugar candies with syrup candies, or sweets made from figs, dates, and raisins combined with nuts.

I am convinced that nothing so makes for the comfort of a farm home as good lighting. During winter evenings the room may be warm and comfortable but, if poorly lighted, it can not be homelike nor comfortable.

To prevent boots from creaking and cracking rub the soles with linseed oil or place them in a plate full of oil. The treatment also makes them waterproof.

Do not cut the sewing machine belt when it becomes too loose. Instead put a few drops of castor oil on the band, run the machine a few minutes and the belt will be tightened.

Among the things that will soon be "made in Germany" will be Yankee trenches.

Corn and potatoes, America's two bumper crops for 1917, are eligible to the bill-of-fare three times a day seven days a week. Who will be the first American housewife to so ingeniously camouflage these products as to tempt the family appetite 21 times in succession.

Three carloads of apples provided by the International Apple Shippers' Association are on their way to England and France. The Red Cross will distribute some of the fruit to the wounded in hospitals and the Y. M. C. A. will take apples to the men in the trenches.

Children should have an abundance of pure cool drinking water. This is especially important in summer when they are perspiring freely. If there is any doubt about the purity of the water it should be filtered or boiled or both.

Equal parts of ammonia and turpentine will take paint out of clothing, no matter how hard or dry it may be. Saturate the spot two or three times, then wash out in soap suds.

Take a good fresh grip on things every morning. Make up your mind to let nothing spoil your day for you. Go about your work in that spirit, and you will be surprised to see how your difficulties will "vanish into thin air."

To take the brand out of flour sacks wet them and rub a thick coating of soap on, roll them tightly and let them stand for an hour or so before putting them in the water to wash them.

In the housekeeping battle do not forget to remember that, first of all you are a home-maker. It is a very sacred position to fill, and one not easily filled unless the heart is in the work.

Shortage of wheat in France is becoming more alarming each week. Pastry is now classed as a luxury and its manufacture or consumption is now suppressed except on Sundays and holidays.

Money saved works day and night for you. Buy war savings stamps!

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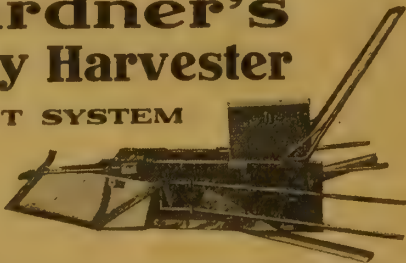


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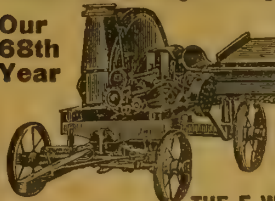
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Pintos and Toprys away from the coast on mesa land, with or without irrigation.  
Henderson Bush and Fordhook Limas on heavy or adobe soil.  
Limas and Blue Pod Navys on loam soil near the coast.  
Lady Washington on more sandy soil.  
Apply Westroback to the seed when planted on sandy or loam soil.  
Plant only the New Mexican Pintos. We have a carload just received.

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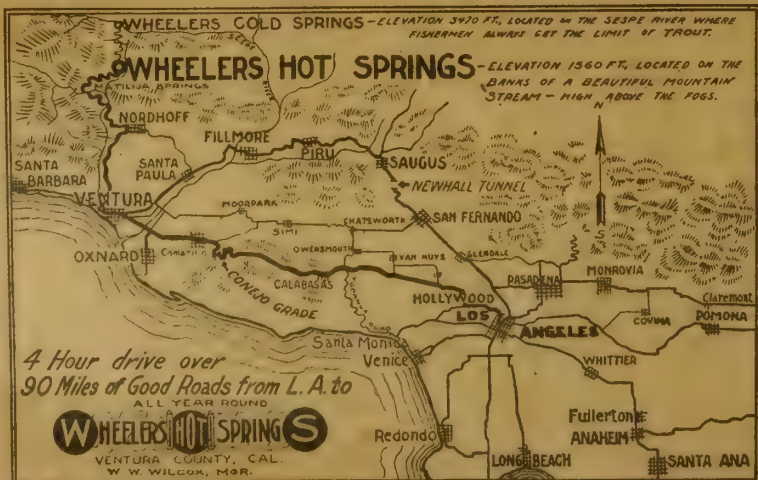
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### Los Angeles Market

Los Angeles, May 1, 1918.

#### BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery ..... 39  
Dairy Exchange price past week on extras.  
April 24 25 26 27 29 30  
'18 ... 39 39 39 39 39 39  
Rets. wk. ending April 30, 274,000 lbs.

#### CHEESE

Brokers prices:  
California fresh, lb. .... 26  
Eastern Daisies ..... 27  
Domestic Swiss ..... 40

#### EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extras ..... 38  
Pullets ..... 38  
Case Count ..... 37  
Dairy Exchange prices past week on fresh extras.  
April 24 25 26 27 29 30  
'18 ... 40 39 39 39 39 38  
Rets. wk. ending April 30, 4624 cases.

#### POULTRY

We quote to producers:  
Food administration now allows sale of hens for eating.  
Broilers ..... 26@32  
Fryers ..... 32  
Hens, small, 22; heavy ..... 26  
Ducks, lb. .... 20@26  
Roosters, old ..... 15  
Turkeys ..... 30@34  
Geese, lb. .... 18  
Rabbits, live, 17@18; dr. .... 40

#### LIVESTOCK

We quote cwt. f. o. b. L. A.

Corrected Wednesday morning, May 1, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. 10.50@11.00  
Heifers, good ..... 8.00@8.50  
Cows, good ..... 8.00@8.50  
Canners ..... 5.00@5.50

Hogs—  
Av. 125 lbs. .... 16.00  
Av. 150 lbs. .... 16.50  
Av. 175-225 lbs. .... 17.00@17.50  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers ..... 12.00  
Ewes ..... 10.00  
Lambs ..... 13.50@14.00  
Yearlings ..... 10.50@11.00

#### POTATOES

Wholesale selling price:  
Oregon Early Rose ..... 2.25  
Northern Burbank, cwt. .... 1.80@1.85  
Idaho Russets ..... 2.00  
Locals ..... 1.40@1.50  
New, lb. .... 6½@7  
Sweet, lug ..... 2.25

#### ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. .... 1.65  
Brown ..... 1.45@1.50  
White ..... 3.00  
Crystal Wax, cr. .... 1.65  
Garlic ..... 8

#### VEGETABLES

Wholesale prices:  
Artichokes, doz. .... 60@80  
Jerusalem, lb. .... 7½  
Asparagus ..... 7@7½  
Beans—Wax, lb. .... 11@12  
Ky. Wonder ..... 15@16  
Beets, sk. .... 2.00  
Cabbage, lb., 2½@3; sk. .... 1.75  
Red, lb. .... 5  
Carrots, doz. .... 80  
Cauliflower, doz. .... 1.25  
Celery, doz. .... 75@1.25  
Cucumbers—Hothouse, doz. .... 75@2.00  
Egg Plant, lb. .... 25  
Horseradish, lb. .... 15  
Lettuce, doz. .... 40@45  
Leeks ..... 35  
Mint, doz. .... 40  
Onions, green, doz. .... 25@30  
Peas, Tel, lb. .... 7@7½  
Peppers, Chili, lb. .... 30  
Parsnips, doz. .... 40  
Parsley, doz. .... 20  
Radish, doz. .... 20  
Rhubarb, C. W. bx. .... 1.25  
Strawberry ..... 1.50  
Romaine, doz. .... 40  
Spinach, doz. .... 30  
Squash—Summer, cr. .... 1.10  
Tomatoes, lug ..... 2.35@2.50  
Turnips, doz. .... 35@40  
Watercress, doz. .... 35@40

#### FRUITS

Wholesale prices:  
Apples—W. W. Pearmain ..... 1.50@2.25  
Spitzenberg ..... 2.50@3.00  
Y. Newton ..... 1.50@2.25  
Bananas, lb. .... 6@6½  
Loquats, lb. .... 8  
Strawberries, tray ..... 1.35

#### CITRUS

Lemons, packed, 5.50@5.75; loose ..... 4.50  
Juice ..... 3.50  
Oranges—Navels, bx. .... 3.75@6.00  
Valencias ..... 6.00  
Grapefruit ..... 3.00  
Limes, basket ..... 7.75  
Tangerines, lug ..... 2.25

#### DRIED FRUITS

These are not prices to producers but prices made by wholesalers to retailers.  
Twenty-five-lb. bx. faced, 50s, ¼c less.  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 16½; extra ch., 17½; fy., 18½; pears, 12; peaches, ch., 11; ex. ch., 12; fy., 12½; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 15½; 40-50s, 14½; 50-60s, 13½; 60-70s, 12 7-8; 70-80s, 11½.  
Figs—Calmyrnas, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

#### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.

L. X. L. .... 25  
N. P. U. .... 23  
Nonp. .... 26  
Peanuts, raw ..... 17  
Pecans, lb. .... 20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. .... 20  
No. 2 Soft Shell, lb. .... 18  
Budded, Diamond Brand ..... 24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) ..... 21  
Prices delivered in East 1½c higher.

#### RICE

See San Francisco rice market.

#### BEANS

These are prices made by wholesaler to retailer.

Lady Washington ..... 14.00  
Limas ..... 14.00  
Pinks ..... 9.00@9.25  
Manchurian Reds ..... 9.25  
Baby Mex. .... 9.50  
Garbanzos ..... 10.00@11.00  
Small Whites ..... 14.00  
Blackeyes ..... 10.00  
Tepary ..... 10.00@11.00  
Lentils ..... 25.00

#### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oats ..... 26.00@28.00  
Volunteer Oat ..... 14.00@16.00  
Wheat ..... 23.00@26.00  
Barley ..... 23.00@26.00  
Alfalfa ..... 19.00@21.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.  
Number 1 alfalfa hay is \$23.00 per ton f. o. b.; common shipping points take \$1.50 carload rate to destination. Prices from points where a higher or lower rate applies to destination will be correspondingly lower or higher.

#### GRAIN AND FEEDSTUFFS

With new barley harvesting on in the Imperial it is probable prices on all grains may be established soon but as yet only chaos obtains and only individual barter can determine price of the feeds or grains.

### San Francisco Markets

San Francisco, April 30, 1918.

#### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Extras ..... 41  
Firsts ..... 40

Prices on butter are practically 16 cents above year ago this date.

Prices Extras past week and year ago:

April 23 24 25 26 27 29  
'18 ... 41 41½ 40½ 40½ 41 41  
'17 ... 33½ 33 33 40  
Rets. wk. ending April 29, 603,000 lbs.

#### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25; Y. Am. .... 28  
Jack cheese, full cream ..... 26@27  
Half skim ..... 14@17  
Ore. Y. Am. .... 26½

#### EGGS

Dairy Exchange Quotations:  
Extras ..... 42  
Firsts ..... 41

Selected Pullets ..... 40½  
Firsts ..... 39½

Prices Extras past wk. and yr ago:

April 23 24 25 26 27 29  
'18 ... 41 41 42 42½ 41½ 42  
'17 ... 30 33½ 31½ 32  
Rets. wk. ending April 29, 19,310 cases.

#### POULTRY

We quote to producers, lb.:  
The food administration now allows sale of hens for food. Prices are expected to come down.

Per lb.: Broilers and fryers ¾ to 1¼ lbs., 35@42; 1½ to 3 lbs., 40@45; hens, large, 31@32; small, 29@30; old roosters, 21@23; ducks, per lb., 30@31; geese, 27@30.

Squabs, doz. .... 3.50@5.00  
Belgian Hares, live, lb. .... 17@18

#### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ¼ to ½c more.  
Steers, lb., 11@12½; thin, 8@10; cows and heifers, 8½@10½; thin, 6½@7½; calves, 8@11.

Sheep—Lb. gross weight: Fat, unshorn wethers, 14½@15; ewes, 12@12½; lambs, yearlings, 16@17; milk, 14; shorn sheep, 1½@2 less.

Hogs—Hard grain-fed, weighing 100 to 140 lbs., 16; 140 to 300 lbs., 17½; 300 to 400 lbs., 17.

#### POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks ..... 1.40@1.60  
River ..... 1.50@1.60  
New, lb. .... 4@4½  
Seed—Wholesale, per 100 lbs.: Early Rose, British Queen, American Wonder, 1.50@2.00; Burbank, low top, 1.50@1.75; high top, 1.50@1.75; Garnet Chile, 2.75@3.00; White Rose, 2.00@2.25; Early Jackson, 2.50@3.00; inferior and off stocks at lower prices.

#### ONIONS

Wholesale selling price on wharf, cwt.:  
Australasian Brown ..... 90@1.00  
Bermudas ..... 2.00@3.00  
Garlic, lb. .... 3@3½

#### VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 12½@40



Asparagus, lb.	3@5
Beets, sk.	75@1.00
Beans, lb., String, 8@12½; Wax.	10@12½
Carrots, sk.	75@1.00
Cauliflower, doz.	30@50
Celery, cr.	2.75@3.25
Cucumbers, bx.	2.00@2.75
Egg Plant, lb.	5@12½
Lettuce, cr.	1.00@1.25
Onions, green, bx.	65@75
Parships, sk.	85@1.00
Peas, lb.	3@3½
Peppers, Bell, lb., 5-10; Chile.	12½@15
Pumpkins, sk.	85@1.00
Rhubarb, Straw., bx.	75@1.25
San Jose	1.00@1.25
Squash, Cream, lug	75@1.00
Summer, cr.	1.00@1.50
Spinach, cr.	50@75
Tomatoes	50@2.75
Turnips, sk.	75

## FRESH FRUITS

Apples—Spitzenburg, 1.50@2.00; Red	1.00@1.50; Newton Pippins, 1.00@1.75.
Pears—Winter Nellis bx., 1.50@2.25;	Avocados, doz., 3.00@6.00
Bananas, Hawaiian, lb.	6½@7
Loquats, lb.	12½@15
Pineapple, doz.	6.00
Strawberries, ch.	7.00@9.00
Longworth, ch.	11.00@12.00
Citrus Fruits—Lemons, bx., according	to size, fy., 3.50@5.00; lemonettes, 3.50@
4.50; grapefruit, fy., 2.50@3.25; ch., 2.00@	2.50. Oranges—Br., navel, 3.50@6.00; Val-
encias, from 100s to 228s, 5.25@6.00.	

## DRIED FRUITS

Not producers' prices but prices of	wholesaler to retailer.
Peaches—Unpeeled, bulk basis, stand-	ard, 10; ch. 10½; extra ch. 11; fy. 11½.
Apricots—Bulk basis: Standard, 13½;	ch. 15; extra ch. 15½; fy. 16½; extra fy.
17½; fy. Moorpark, 17½; extra fy. 18½.	
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8;	40s, 8½; 30s, 9½.
Apples—In 50-lb. bxs., lb.: Fy., 10; ex-	tra ch. 15; ch. 16.
Pears—Bulk basis, lb.: Fancy, 10½;	ex. ch. 9; ch. 8½; standard, 7.
Raisins—Cr.: Sun Maid, seeded, 10-oz.	cartons, 4.20 for 48s and 6.15 for 36s; fy.
4.20 for 48s and 3.15 for 36s; do, 12-oz., 45	to cs., 5.25; ch., 10-oz. cartons, 2.00 for
36s; do, 12-oz. cartons, 45 to cs., 3.10.	In bulk: Sundried, 1.75; fy., 1.90; ch.,
1.75.	
Sulphur-bleached Thompsons, ex. fy.,	5.37½; fy., 5.12½; ch., 4.87½; soda-
bleached, 4.75.	
Loose: One-crown, 4.15; two-crown,	3.40; three-crown, nominal; four-crown,
3.30.	

## NUTS

Almonds—Cal. Almond Growers' Exch.	Gross prices: Nonpareils, 21½; I. X. L.,
19½; Ne Plus, 18½; Drakes, 18; hard	shell, 11½.
Chestnuts, Cal. lb.	10@20
Peanuts, Va.	17
Pecans, lb.	19@20
Pine Nuts	22@25

## HONEY

To the trade, per lb.: Comb, fy. white	alfalfa, 20; do sage, 21; light amber, alf-
alfa, 18; do sage, 19.	

## BEANS

Jobbers' prices, cwt., recleaned:	
Limas	13.90@14.10
Bayous	9.00@9.25
Small Whites	Nominal
Large Whites	Nominal
Mexican Reds	9.40@9.60
Blackeyes	8.75@8.90
Pinks	8.00@8.15
Red Kidney	Nominal
Cranberry	Nominal
Teparies	10.50@11.00

## RICE

By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.

## HAY

Under date of April 27, Scott, Magner & Miller says:

Receipts past week, 849 tons. Although we do not expect new crop on the market for some little time yet we note that the mowers have started in several sections on volunteer and alfalfa and if this dry weather continues no doubt they will be cutting in many other places shortly. This affects the buying public who have had to pay abnormal prices for some time past. On the other hand the dry weather the last week or two together with the hot north winds of a week ago are having their effect in the country districts, and prospects for a large crop are not nearly as good this week as they were two weeks ago. The natural result of this is that holders of hay in the country have not been as anxious the past week to sell as they were heretofore.

Alfalfa is in good supply and new crop can be expected ready for delivery within the next two weeks if the weather remains dry. This, naturally, will take the place of old hay as new crop is always given preference for feed over the old hay. Some sections complain that they will not have the necessary water for their later cuttings but taken as a whole it now looks as though the alfalfa crop would be large.

Fancy Wheat Hay	(light 5 wire bale) 27.00@28.00
No. 1 Wheat or Wheat and	Oat Hay 23.00@25.00
No. 2 Wheat or Wheat and	Oat Hay 20.00@22.00
Choice Tame Oat Hay	24.00@26.00
Other Tame Oat Hay	21.00@23.00
Wild Oat Hay	18.00@20.00
Barley Hay	18.00@20.00
Alfalfa	17.00@19.00
Stock Hay	13.00@15.00
No. 1 Barley Straw	50@80

## GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

## RAISING TURKEYS

Continued from Page 575

judgment, but in both cases I lost poults with blackhead, and so I know I fed too much.

It seems to me the emphasis in Mr. Hadley's words, quoted above, should be on the phrase, "taken in addition to their normal insect diet." Turkeys rarely thrive when deprived of their normal insect diet, never unless that normal diet is closely approximated in some way. Cottage cheese or sour milk seems to be the nearest artificial approach to that normal diet, but it is a long way behind. Doubtless some time the young turkey will become accustomed, as the chick has, to a diet of artificial worms and bugs. When it does, blackhead will be a thing of the past. Until then, all we can do is to provide just as much of that normal diet of worms and bugs and seeds as we possibly can and add to it just as little of other things as will answer. Poults on good range need very little of feeding. The poorer the range, the more they must be fed. The mistake we make is not so much in our choice of the particular food which shall be used to supplement the natural range diet as in trying to supplement it beyond a certain point. Turkeys raised in close confinement are rarely profitable, and profit increases in direct proportion to the amount of range given.

The second rule for the care of poults is, keep them dry. This rule applies to all young birds, and no more to turkeys than to geese, only goslings more quickly outgrow their susceptibility to dampness than do turkeys. Running on the damp ground or on wet grass causes rheumatism, which is shown by twisted feet, bent toes and lameness. After the poults are a week old they may be given their liberty but should not leave the coop till the grass is dry, and should return to it before night. If the weather is rainy or threatening they should be kept in. Their coop should be rain tight on three sides but open on the fourth and should have a board floor. The first two weeks, at least, it should stand in a sunny yard, with some windbreak. The east side of a building is an excellent place for poults. After the second week the coop may be placed in an open field, wherever it is most desirable to keep them. If they are a good way from the house, so much the better. They will not get the habit of hanging round the chicken yards when they should be ranging.

The third rule for raising turkeys is, keep them clean. My own poults, when they died, have died of blackhead. I never saw one that I thought was lousy. But then I always dusted the hen and often dusted the poults, too. There is absolutely no excuse for lice on turkeys, for dusting both hen and poults once a week will keep them away forever. No one who is unwilling to do this much for turkeys should have the care of them. Lice will kill a turkey much more certainly than they will a chick, but no turkey needs to have lice. Blackhead we have not learned to prevent; lice are completely in our power.

## SEEDS

Prices in round lots, lb.:	
Millet, recleaned	5@5½
Alfalfa, lb.	20@21
Flax	7@7½
Hemp	5@5½
Rape	2½@3

## Citrus Fruit Market

Los Angeles, Cal., May 1, 1918.  
Some poor fruit still in market makes a showing on auctions of prices rather under those prevailing in general markets. General condition is excellent with few lemons offered.

## Shipments

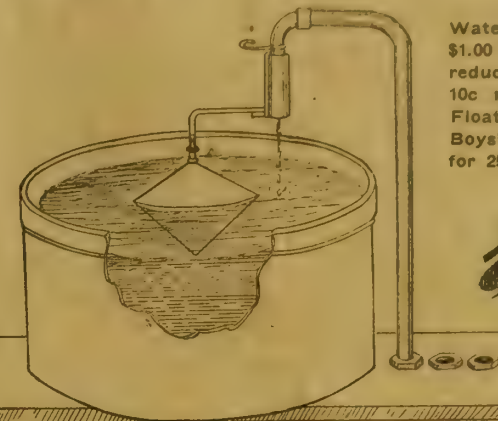
Shipments of citrus to date since November 1, 1917, from Southern California: oranges 8299, lemons 2207, total, 10,506; to last season same date: Oranges, 21,295; lemons 2661; total, 23,956. Central California: Oranges, 2428; lemons, 115; total, 2543. To same date last season: Oranges, 4046; lemons, 164; total, 4228. Northern California: Oranges, 203; last year same date, 344.

## AT THE AUCTIONS

April 26	
New York: 16 cars. Nav. 2.75-5.45,	Val. 3.85-6.30, Sweets 3.50-5.00, Seeds.
3.70-4.75, Bloods 3.30-5.50.	
St. Louis: Val. 3.95-6.00, Sweets 2.75-	5.65, lem. 3.70-4.00.
Cleveland: Mikes 4.80-5.35, Seeds. 4.60-	5.50, Nav. 2.80, lem. 3.25-4.40.
April 30	
New York: 24 cars. Nav. 3.65-5.80,	Seeds. 3.50-4.85, Sweets 3.40-4.35, Val.
3.70-6.15, Mikes 3.75-5.25.	
Boston: 14 cars. Nav. 2.95-5.05, Val.	3.75-5.80, Sweets 2.70-4.65, Seeds. 2.05-4.15.

# "Water Boy" Automatic Poultry Fountain

The "Water Boy" is a perfect sanitary fountain for use in poultry houses and poultry yards. It is absolutely automatic and can be attached to any pipe the same as a faucet. An attachment on the float permits you to adjust the water to any level desired. You are assured of having pure, clean water in your yards and houses at all times, without waste or a sloppy, muddy condition around troughs and crocks. Don't waste your valuable time carrying water—install a few Water Boys and they'll more than pay for themselves in a short time in saving of labor.



Water Boys, with metal floats, \$1.00 each. Half dozen lots 5c reduction on each. Dozen lots, 10c reduction on each. Metal Floats 20c each. Old "Water Boys" made as good as new for 25c.

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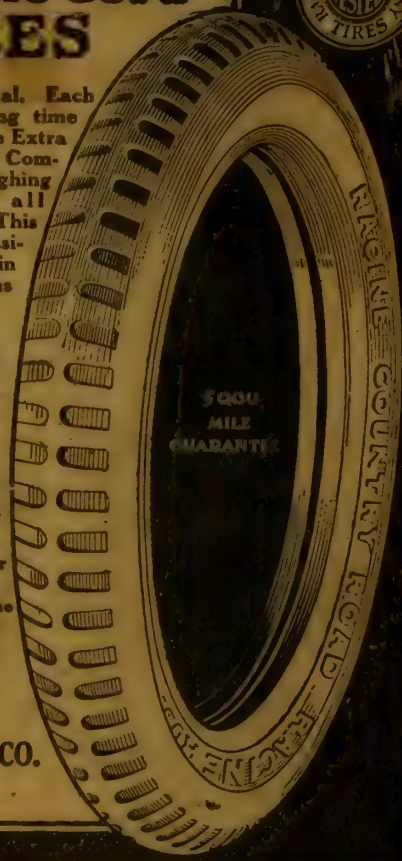
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LOS ANGELES

May 11, 1918

SAN FRANCISCO



## A Field of Rice in Yolo County



Five Years Ago California Produced \$75,000 Worth of Rice; in 1917, \$12,000,000 Worth. More Than 90 Per Cent Produced in Sacramento Valley. Butte, Glenn and Yolo Counties Are Adding Thousands of Acres to Last Year's Plantings.







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### More Rubber Where It Should Be

These bracing Shoulders of Strength—found only on Ajax tires—give to Ajax tires a greater resistance to wear. Because of these reinforcing shoulders, built in on both sides of the tread, Ajax tires have more rubber where it should be—more tread on the road.

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**MORE  
RUBBER  
WHERE IT  
SHOULD BE**

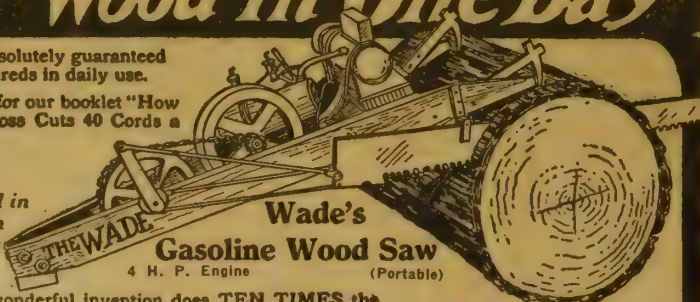
# AJAX TIRES

## This Saw Cuts 25 Cords of Wood in One Day

It is absolutely guaranteed—hundreds in daily use.

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Stocks  
Carried in  
Eastern  
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**Wade's  
Gasoline Wood Saw**  
(Portable)

This wonderful invention does TEN TIMES the work of TWO MEN in the woods.

With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a 40 inch log in five minutes. Write us today.

**REWADE & CO.**  
SINCE 1863

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Can make immediate delivery

Body made from single sheet of galvanized open hearth steel, ten feet long, with extra heavy taper collar on one end and band of heavy steel on the other—making each section 10 1/2 feet: made with lock seam (four thicknesses of steel), which gives unusual strength and durability, besides absolute proof against leakage. Manufactured by

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QUICK AND ECONOMICAL TRANSPORTATION

## Nash Trucks Save Your Time

Moving loads about the farm, or between farm and town, in the busy fruit season, Nash trucks save your time.

Equipped with M & S automatic locking differentials and internal gear drive rear axles, they also have many other mechanical features which enable them to speed up your hauling and reduce its costs.

Because of the automatic locking differential, the Nash truck's driving wheels cannot spin. This saves fuel, saves tires and allows the Nash truck to get through where other trucks without this important feature cannot go.

The unusually strong internal gear drive axle is not only much lighter and simpler than others but delivers more power to the wheels, especially at low engine speeds.

Our transportation expert will be glad to tell you which Nash truck will best serve your purpose.

One Ton Chassis	\$1495
Two Ton Chassis	1875
Nash Quad Chassis	3250

Prices f. o. b. Kenosha

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# NASH MOTORS



## Counties Cooperate in Food Production

Lake County Furnishes the Water; Yolo County Furnishes the Land, the Tractors, the Labor; and 10,000 Additional Acres of Rice Production is Made Possible

**Y**OLO County is shouting for Old Glory and talking patriotism, and, better still, she is acting. Last year in answer to the appeal for more food she increased her production to the limit. At last, so it seemed. This year she de-

agreed to pay \$4.00 additional cost per acre, and it is thought that this acreage will be increased to at least 10,000.

This war measure will lower the waters in Clear Lake several feet, but Lake County people will trust to another season's rainfall to restore it to its old level. Another patriotic step



Interior of Rice Mill at Woodland

pany; Charles E. Virden, president Sacramento County chamber of commerce and manager Pacific Rice Growers; W. G. Mixon, editor of the Woodland Mail, and to every booster in these two counties credit is due.

Especially is credit due to Lake County people because of their hearty response to the suggestion which means for a time at least the taking away of their wealth giving water to another county.



Threshing Rice in Yolo County

Yolo County is adding more than 10,000 acres to its last year's production.

etermined to do even better and accomplish the impossible.

There is to an extent a shortage of water which made rice culture impossible. However, Lake County has supply which can be used on lands in Yolo County, and Lake County, equally as patriotic, agrees to deliver water to Yolo, hence Yolo County rice growers meet and talk rice and plant rice. It has taken no little time and planning on the part of the United States food commission, the Yolo Water and Power Company, Yolo rice growers, supervisors of the two counties and others to bring about this patriotic move. The Yolo County democrat reports that farmers representing a total acreage of 5993 have

as a result of this disposal of the waters by Lake County will be the use of the funds derived from their sale in the construction of good roads.

This combination which will result in the addition of hundreds of thousands of dollars to the wealth of the two counties is the result of hard work on the part of such boosters as Fred Shaffer, secretary of the Yolo County board of trade; Ralph P. Merritt, state food administrator; Frank Adams, professor of irrigation, University of California; Dr. Fred Burroughs, secretary Yolo County Rice Growers' Association; John L. Stevens; J. L. Harlan; A. C. Huston, president Yolo Water and Power Com-



Hauling Rice for the Boys "Over There"

Sacramento Valley's production of rice has been a material factor in feeding the world.

## Fire Fighting in Napa County

**W**E MUST produce more" is repeated until to those of us who are so busy producing it becomes tiresome. But we must continue to hear it, for

there are some slow of perception who require the line upon line, precept upon precept type of education, and we will continue to talk more of producing more. But there is the other question equally as important, and that is conservation. The housewife has heard this until she too is becoming tired. But there is another form of conservation which calls for the checkmating of intentional acts of disloyalty and those other acts almost as disloyal, which come from carelessness in the causing and permitting of fires which sweep our fields and sometimes even destroy our buildings. Last season we called attention to the Solano County plan which resulted in the formation of volunteer companies in all parts of the county with fire fighting apparatus located on main highways and telephone system perfected that the first notice of

field or other fires brought together efficient organized forces ready for action. This resulted in the saving of thousands of dollars and the more valuable feeds and foods so greatly needed.

### Baade Gets Busy

This year Farm Adviser Baade of Napa County has taken early action and brought the people of his county together at Napa and perfected a fire fighting force which will cost the county but little in dollars and save much. There was a great meeting. Twenty-two volunteer fire fighting companies answered "present." The assembly hall overflowed. California's Governor Stephens was there.

### He Said:—

"I have come a considerable distance at a time when many official duties are pressing, to express appreciation of what you have done in Napa County and to endeavor to stimulate similar activities in all the counties of the state. We are just beginning to face the real problems

of the war. The nation has just commenced to sense the gravity of the situation. It is now buckling down to the stupendous task before it.

"It is essential that we develop production to a maximum. It is equally essential that we protect our growing crops and the harvested product. Our cattle ranges and property of every kind must be safeguarded. Food for our soldiers, for our Allies, and for our own people is the important consideration, and we must plan energetically to prevent its loss by fire.

"I am greatly interested in this movement to establish organized fire protection bodies throughout our state. I hope grain farmers everywhere will keep their plows in good condition, chains and stretchers ready, and horses or tractors quickly available to plow lanes around an incipient fire. Where feasible and practicable we want fire apparatus provided such as proved so successful in Solano County last summer. I hope the people can be interested in all the counties just as has been done in Napa to

exert a greater vigilance against fires and to be prepared for prompt and organized effort to put them out.

"The sweep of a blaze across one grain field can easily nullify the efforts of a thousand patriotic families in food conservation. The Germans would gladly expend a thousand shells to effect as much damage. If submarines dealt as great a loss, Berlin might exultantly chronicle the fact.

"Such thorough fire protection as you loyal citizens of Napa have planned is getting down to real business in war work. It has enlisted my enthusiasm more than anything else that has been done in a long time. I am going to talk fire protection as much as I can to the people of our state, and I shall point to Napa County as an example of how best to provide it. Guarding of our warehouses and industrial plants from fire is one of our difficult problems. We would require a force that would be a great army in itself. An alert citizenry with measures taken for a quick detection of fire and for prevention and with preparation



# WEST COAST GAS ENGINE

MADE IN CALIFORNIA



The Essential Features are:

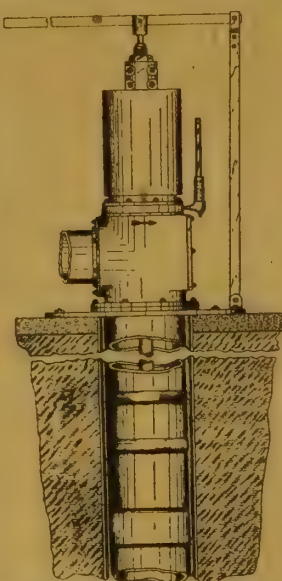
**Simplicity      Durability**  
**Dependability**  
**Smooth Operation**  
**Low Fuel Consumption**  
**Guaranteed**

The West Coast Distillate Engine is the culmination of 16 years of progress in the manufacture of internal combustion engines by this company. Each of the 16 consecutive years has shown its own advance in design and manufacture until WEST COAST GAS ENGINES today have their own unapproached standard of quality.

Write us regarding your engine requirements. No fee charged for estimates.

## The West Coast Gas Engine Company

420 East Third Street, Los Angeles      76 Fremont Street, San Francisco  
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### If You Are Looking for

**Efficiency—**  
**Low Upkeep—**  
**Long Life and**  
**Low Cost in**

## PUMPS

Let Us Tell You All About

### KIMBALL'S Direct Flow Turbine

Save Digging Pits and Large Wells

The Kimball Direct Flow Turbine is a moderate speed rotative pump employing an improved design of Impeller and Rectifier not embodied in any other pump. This, coupled with low velocity, reduces the friction to a minimum thus saving horsepower and reducing wear. All bearings are lubricated through a hollow shafting by a positive lubricating system. These bearings are protected by automatic water tight packing glands to prevent sand entering.

**Look at This!**

A Kimball Direct Flow Turbine will pump:  
 40 miners inches out of a 7 inch well.  
 115 miners inches out of a 10 inch well.  
 200 miners inches out of a 12 inch well.

Write us your irrigation requirements. NO CHARGE FOR ESTIMATES. Our many years of experience in irrigating systems places us in a position to help you save money if you will give us an opportunity.

### Frank J. Kimball Co.

1860 East 15th St.      Los Angeles

## UNIFLOW PUMPS

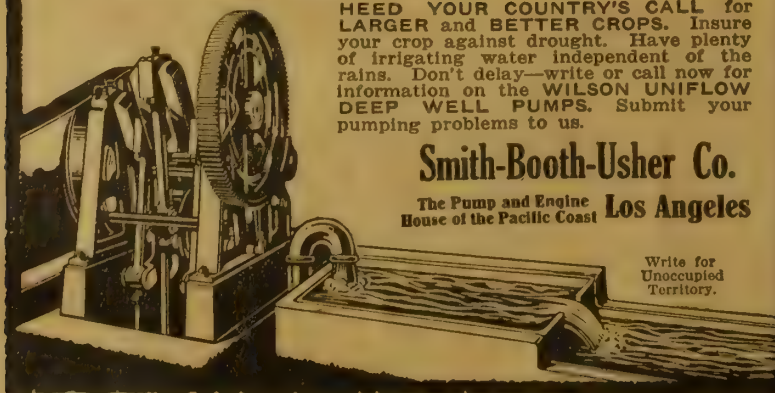
### Will Increase Your Profits

HEED YOUR COUNTRY'S CALL for LARGER and BETTER CROPS. Insure your crop against drought. Have plenty of irrigating water independent of the rains. Don't delay—write or call now for information on the WILSON UNIFLOW DEEP WELL PUMPS. Submit your pumping problems to us.

### Smith-Booth-Usher Co.

The Pump and Engine House of the Pacific Coast      Los Angeles

Write for  
Unoccupied  
Territory.



When writing advertisers, mention The Cultivator.

for ready assemblage of men on the sounding of an alarm will mean much to relieve the anxiety we have all felt over the exposure, particularly of our grain warehouses in the country sections, to the careless spark or skulking I. W. W. After all, the government must rely on the individual citizen. A free people does not want swarms of gendarmes or policemen. In proportion as it does not need them is free government successful. With freedom comes responsibility and every citizen must realize this in his heart in these times of stress and peril. I congratulate you people of Napa on meeting this responsibility as you have."

#### The Plan

The plan of organization followed in Napa County is to divide the county into 22 districts, each headed by a chief designated a fire warden by the state forester, and a deputy sheriff by the sheriff. His duties are to ask 11 neighbors to join his company, to equip the company with a light truck, which will carry barrels, buckets, tools, fire extinguishers and other paraphernalia for extinguishing fire. The company is drilled in fire fighting. It takes charge of such fires as arise, investigates their cause, inspects all property in its district with reference to fire risk, attends to necessary plowing around grain stacks and backs the prosecution of those responsible for fires. The organization in Napa County has been under the direction of the county farm adviser,

he in turn acting with the cooperation and direction of G. M. Homans, state forester.

In the Napa Journal's report of the meeting we note:

Prof. H. J. Baade called the roll of the fire companies and their chiefs and assistant chiefs, and those responding were then sworn in as deputy sheriffs by Sheriff E. A. Kelton, and as deputy fire wardens by State Forester Homans.

Fire Chief C. F. Otterson was then chosen as county fire marshal. The chiefs of the 22 rural companies will be responsible to and report to him in all cases of fire in their districts.

This organization has been formed under the supervision of County Farm Adviser H. J. Baade, he acting in cooperation with State Forester Homans. It was a three months job.

At the close of the meeting the rural firemen, cheering and proudly displaying their banners, assembled on the steps of the court house and were photographed. After that they made a procession in their autos around the principal streets of the city.

Mr. Baade, the members of the companies themselves, and the general public, are to be congratulated on having such an efficient aggregation to call upon in case of grain or forest fires. If such a system had been available heretofore, many of the destructive fires which have caused such devastation in the past in this county might have been easily checked and much damage avoided.

## Protecting Citrus Fruits Against Rots in Transit

Successful Method Used in Porto Rico

**S**OUTH of Porto Rico little interest is taken in the shipping of oranges and grapefruit, save for unimportant and unorganized inter-island trade, says a writer in the Agricultural News of Barbados. The only citrus fruit industry of importance is the green lime trade with New York. In this case, when the fruit is well selected and packed according to approved methods, the losses from storage rots are not, so far as the writer is aware, of serious consequence. The complaints which have been made would seem to have reference to poor quality and careless packing in the shipments made by speculators during periods of heavy demand.

In Porto Rico and the Isle of Pines there is a developing trade in grapefruit, and considerable attention has to be given to prevention of losses in transit. A recent paper by J. M. Rodgers and F. S. Earle (Phytopathology, VII, 361), who are working at San Pedro, Isle of Pines, records the discovery of a simple and effective method of protecting citrus fruits against stem-end rot. It may find an application in the British West Indies in the occasional shipments made to England, and may even come to have an interest for the green lime trade when the growing competition leads to more discrimination as to quality.

Most growers are by now acquainted, at least in theory, with the dictum that fruits for shipment should be handled as delicately as if they were eggs, but it was found at San Pedro that even this did not suffice. Fruit picked under direct supervision of careful foremen, by laborers wearing cotton gloves, placed in standard field crates, and hauled to the packing house on wagons with bolster springs, graded by experts, and every doubtful fruit rejected—conditions which would suggest the millennium to any planter of the writer's acquaintance—still showed a large amount of decay in transit.

A large proportion of the loss was found to be due to Diplodia rot starting from the stem end of fruit, with no apparent injury. A Diplodia species, it may be remarked, appears to be common on ripe limes throughout these islands. It was noted that fruit which had been clipped, retaining the calyx, showed much more susceptibility than fruit which had been pulled, owing to prevention in the former case of quick drying-out of the stem cavity.

The first attempt at protecting the fruit was made with paraffin wax. The

coating of the rind with this substance did not materially alter the amount of loss from rot, but it prevented the fruit from shriveling, and made it possible to keep thin-skinned lemons in excellent condition for two or three months. The application of paraffin to the stem ends gave promising results as a measure against stem-end rot, but was not altogether satisfactory because the material did not stick well.

The next method tried was so successful that there was no necessity to seek further. It consisted in the application, to the stem end of pulled fruits, of shellac diluted to a thin consistency with alcohol. It is easily and quickly applied, sticks well, and seals the cavity perfectly. With clipped fruits the results are much less satisfactory.

The difference between pulled and clipped fruit was consistently high all through the experiments, and is in itself at least as significant as the differences obtained by coating the stem end. Incidentally it was found that washing, in running water or in a tank, so increased the amount of decay that, in the author's words, "the use of a soaking tank is the greatest possible folly."

The conclusions reached may be thus set out:

- (1) That citrus fruit should be pulled, not clipped;
- (2) That coating the stem cavity with shellac largely prevents stem-end rot;
- (3) That coating the rind with paraffin keeps the fruit in good condition for an additional month or six weeks;
- (4) That washing the fruit induces heavy losses.

#### PROPOSED INTERSTATE CONFERENCE

Unless something unforeseen happens a conference new in the annals of horticultural procedure in California will be held at some point during the coming autumn. The date has not yet been definitely fixed but the fruit growers' and farmers' convention to be held at Riverside in November will probably be selected as it possesses many advantages.

The conference in question proposes to bring together representatives from Arizona, Nevada, Utah, Colorado, Idaho, Oregon, Montana, Washington, California, the federal horticultural board, Canada and the Mexican state of Lower California for the purpose of bringing about a better understanding



**PROFIT** comes from fruit, not foliage. On citrus fruits use immediately available

# Nitrate of Soda

It works while fruit buds are forming.

Send post card for "Cultivation of Citrus Fruits"

**DR. WM. S. MYERS**  
Chilean Nitrate Committee  
P. O. Box 248, Berkeley, Cal.

**W. J. Bush**  
**Citrus Products Co., Inc.**  
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Manufacturers of  
**ESSENTIAL OILS AND  
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**Citrus By-Products  
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We are always in the Market  
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## Orange Cove Nurseries

Offer a Fine Lot of  
**Citrus Trees**

All kinds of Oranges and Lemons. Bud selection from the best individual trees. Some fine trees are on leased land, we will offer special inducements to move them quickly.

Address  
**Milnor & Horrell**  
Or Call at  
1835 Merced St. Fresno, Cal.

## Citrus Seed Bed Stock

Our Orange Seed Bed Stock, strong, healthy, one year plants 10 inches and up, absolutely free of scale.

**Walker-Hubbard Nursery Co.**  
Fresno, Cal. Office First National Bank Bldg.

**FREE** Booklet of Information  
to Citrus Growers  
On "Citrus Diseases and Remedies"

A postal inquiry will bring one. Address  
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22-25 South San Pedro St. Los Angeles, Cal.

## Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines  
The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.

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of existing horticultural laws and ordinances and effecting greater co-operation in this phase of horticultural activity. In its broader aspect the conference aims to reduce to a minimum restrictions in the interstate movement of agricultural produce by the adoption of standardized statutes and regulations, to prevent the dissemination of and to aid in the suppression of plant pests and diseases throughout the Pacific coast and adjacent territory.

Commenting upon the proposed conference Mr. Hecke states that there have been a number of instances when it has been felt that if representatives of adjacent states could personally discuss matters demanding special attention much more satisfactory settlements could be made. There are also a number of dangerous insect pests existing in the eastern part of the United States which have not yet made their appearance in the West. These, if allowed to become introduced, are certain to cause widespread destruction. Among these may be mentioned the white pine blister rust and the pine shoot moth, both of which will cause great havoc among our sugar pines; the notorious gypsy and brown tail moths, which feed upon almost any class of vegetation; the leopard moth, which will attack both our fruit and shade trees and is almost impossible of control; the European mole cricket; the newly introduced corn moth; and a host of others of which a volume could be written; to say nothing of the boll weevil and the pink boll worm of cotton, and citrus canker, which are of interest mainly to the states of California and Arizona.

It is of great importance that more and better cooperation exist between the states in preventing the dissemination of and in the suppression of these common enemies.

Mr. Hecke reports that as a result of informal correspondence with the officials directly concerned with the horticultural laws of the various states all who have been approached have expressed a desire to attend and are unanimous in the opinion that such a conference is fraught with great possibilities for permanent good.

### DRASTIC BUT EFFECTIVE

The state horticultural commissioner is sending out the following statement regarding one horticultural event in Florida. We give it because it is sometimes claimed California is over drastic, this especially by Florida nurserymen who have wished to enter this state's business. The statement issued by California's commission:

"A recent communication received at the office of the horticultural commission from the state plant inspector of Florida calls attention to the fact that a certain nurseryman in California shipped into the state of Florida citrus material under a deciduous stock permit. Inspection of the material in question revealed also that the number of plants in the shipment was in excess of the number mentioned in the certificate, there being also certain other irregularities of marking.

"The action of the Florida authorities was quick and drastic. The shipment was destroyed and the permit of the offending nurseryman to ship plant material into Florida was promptly cancelled and a request presented for the return of all shipping tags. While it is admitted by the Florida authorities that there may be extenuating circumstances it will be noticed that her inspectors propose to take no chances of similar shipments arriving during the interim of a possible investigation. They have, therefore, stopped the shipments and are investigating at their leisure. Florida's action in this connection is an example of the interest that state is taking in protecting her horticultural industries and also of the rigid compliance with regulations which she proposes to exact from all persons who wish to do business in the above connection within her boundaries."

The United States department of agriculture, through Division of Publications, Washington, D. C., will mail free upon request Bulletin 933, "Spraying for the Control of Mites Attacking Citrus Trees in Florida." The bulletin is fully illustrated, showing white fly and many other Florida pests.

## TEAGUE QUALITY CITRUS TREES

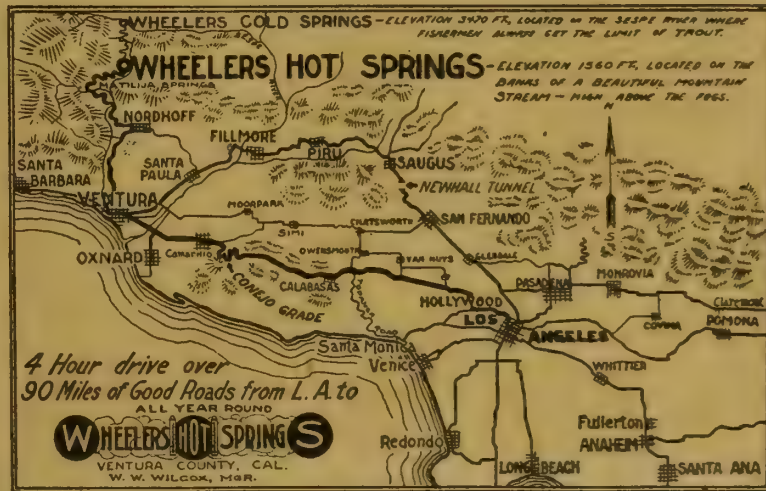
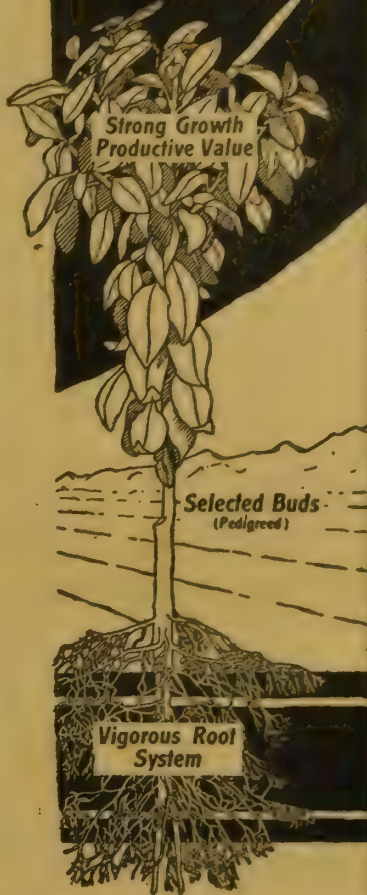
AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. We invite correspondence from intending planters. Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

## The R. M. Teague Citrus Nurseries

Box 67, SAN DIMAS  
CALIFORNIA

FOUNDED IN 1889  
AT IT 29 YEARS



**Thorpe Engraving Co., L. A. Representative**  
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## Cut Your Cost 60%

by using the latest and most efficient farm implement on the market.

## Gardner's Bean Harvester

UNIT SYSTEM



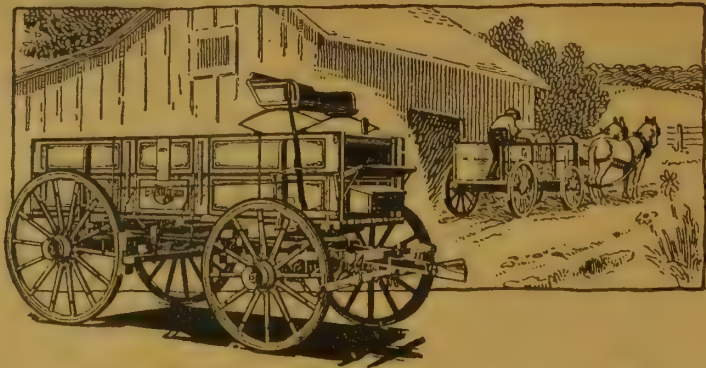
One horse cuts two rows, two horses cut four rows—greatest cutter on the market.

## Gardner Harvester Co.

Box 16 Santa Ana, Cal.

IF YOU WANT A BEAN CUTTER—  
WRITE FOR OUR TERMS.





## Capacity Guaranteed

**T**ELL the dealer you want a wagon that the manufacturer will guarantee to carry your biggest load. If he is up to date, he will show you a **Weber** or **Columbus** wagon with its capacity stenciled in plain figures on the rear bolster. That is the new idea for protecting you in your purchase of a wagon.

When you bought by skein size, you could not be sure that you were buying the most economical wagon. Now you can be sure. Every **Weber** and **Columbus** wagon that leaves the factory is guaranteed by the manufacturer to carry a known load over the roads that you have to travel.

Nor is that all you get when you buy a **Weber** or **Columbus** wagon. The folding end gate and link end rods save you a world of time. The fifth wheel, which only **Weber** and **Columbus** wagons have, makes your wagon run easier and last longer. Write us for complete information about these wagons. You'll be surprised at the number of good features they have.

**International Harvester Company of America**

(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.  
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah  
San Francisco, Cal. Spokane, Wash.

## Farm for Profit

### and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

## HAUSER PACKING COMPANY

9th and Mateo Sts. PHONE 10336-Bdwy. 5600 Los Angeles, Cal.

### Perforated Tree Protectors

Why use anything but a **PERFORATED PROTECTOR**, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small **LATH HOUSE ABOUT EACH TREE**. Protects from Squirrels—Rabbits—Gophers—Hot Sun—Sand Storms—Barking in Cultivation, etc.

We make a number of kinds. **TELL US YOUR PEST**, and we will tell you what kind to buy. Get our prices. We can save you money.

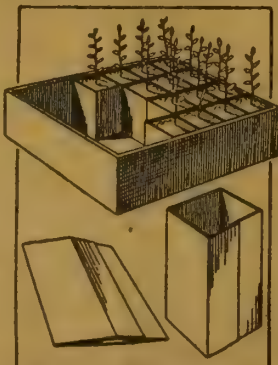
#### COLLAPSIBLE PLANTING POTS

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start

Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

Write for samples and prices of both Pots and Protectors. State which you are interested in.

THE EXPAN CO., 935 E. Central Ave., Redlands, Cal.



**Make Quick Money** operating the quick set, fast baling, low priced **WESTERN STAR** step. Only baler made offering special non-binding head block feature for side hill sets. Over 600 in use in Southern California. Complete line heavy and light presses, horse, tractor and engine power. Did you ever hear of a power baler for \$400? We have it. **L. M. DAVENPORT CO., MFGS., 110-112 NORTH LOS ANGELES STREET, LOS ANGELES.**

## Additional Crop Reports



**GOOD** crop, rather above average, is a fair summarizing of the individual reports which have come from various parts of the state. Fair prices assured. The fruit grower is not worrying—save when he thinks of the hired man.

**Geo. Marchbank, Horticultural Commissioner, Madera County**

Apricots 55 per cent, peaches 75, almonds 70, plums, 65, prunes 85.

**C. G. Marchus, San Pasqual, San Diego County**

From present outlook I will have about one-third crop of apricots. I had extra heavy crop last year, 15 tons dried on eight acres, beside 1200 lug boxes green so I did not look for heavy crop this year.

**California Prune and Apricot Growers, H. C. Dunlap**

Apricots will be a better crop than last year in the Santa Clara Valley and surrounding districts. South Coast districts, Ventura, Orange, etc., not as heavy as last year. Crops compare favorably, even better, than last year in the Southern San Joaquin; also Yolo and Solano County sections. There will possibly be a total tonnage of green cots this year to materially exceed that of 1917 crop. We hardly anticipate a very heavy crop of prunes after last year's bumper crop. The present outlook appears to be a duplication of last season in the districts north of the Bay, Sonoma, Napa and Sacramento Valley. South San Joaquin district probably will not exceed two-thirds of last season's crop. Santa Clara is setting very backward and cannot be definitely computed at present. If the result here compares with that in other districts, we can look forward to 180,000,000 pounds or more.

Almonds appear to be for the most part an excellent crop. Have no personal knowledge of cherries but I believe reports are good. Peaches possibly not as heavy as last year. This could hardly be expected. Good crop in sight, however.

**J. E. Hassler, Horticultural Commissioner, Eldorado County**

I have waited with my report till now as fruit trees up here are very late in blooming this spring, in fact during my residence here of 45 years they have never bloomed this late in the season.

As for the outlook of deciduous shipping fruits such as we grow here the promise now is a 100 per cent crop in all lines with the exception of apples, bloom of which is rather light.

**Winters Dried Fruit Company, Yolo County**

Our season is now far enough advanced to make report of estimate as shown below without reasonably expecting to make further reductions. The rainfall to date is far below our normal, being 10.25 inches, against 20 inches normal. The previous season only totaled 12.22 inches. Comment is unnecessary upon this shortage of moisture, suffice it to say it is noticeable in all fruits. The weakened buds were irregular in blooming, some trees failing entirely to bloom out. At this writing, due to an unusually good growing spring, fruit is making a fair showing, but it is questionable as to maturing to normal size unless irrigated, which is now going on in probably 50 per cent of the orchards from ditch or pumping.

Early in April heavy frost damaged almonds and apricots in some sections.

Season about 15 days late, or about same as last season. Estimates given below in per cent, basing normal at 100 per cent.

Apricots. About 50 per cent, or 4000 tons green. Some shothole fungus which no doubt will increase the tonnage of dried considerably over that of last season.

Peaches. Muirs and Elbertas about 85 per cent, Lovells about 50 per cent; shipping peaches 35 per cent to 40 per cent.

Prunes about 75 per cent. Plums. Average all varieties, 50 per cent.

Pears, 100 per cent.

Almonds. Hatch varieties 60 per cent, Drakes 75 per cent, Peerless 60 per cent, Texas Pro. 35 per cent.

Figs. First crop looking well.

Grapes. Indications favorable for good crop.

## Effect of the War on the California Fruit Industry

By George Robertson, Statistician State Board of Agriculture



**THE** figures regarding the imports and exports of fruits during the last four years show some remarkable results. Bananas and pineapples, not being raised in California, are only included so as to show the total value of fruits imported. Dates are now being produced to limited extent but the prospects of the industry are encouraging. The importation of currants, which in 1894 amounted to upwards of 52,000,000 pounds, and in 1913 to 47,000,000 pounds, were only

32,000,000 pounds in 1914, and fell to 793,000 pounds in 1917, which had the effect of greatly increasing the demand for California seedless raisins. Figs have fallen off from 20,000,000 pounds in 1914, to 3,000,000 pounds in 1917; in the previous year there was a temporary increase owing to the importation of an unusually large shipment of 8,000,000 pounds in December of that year, mostly from Portugal, but of an inferior grade, which were used mostly for confectionery purposes. The imports of Almeria

### IMPORTS

Fruit	(For the Calendar Year Ending December 31)							
	1914	1914	1915	1915	1916	1916	1917	1917
	Quality	Value \$	Quality	Value \$	Quality	Value \$	Quality	Value \$
Bananas, bunches...	46,640,243	15,863,972	38,230,310	12,687,696	35,385,296	12,189,682	35,279,686	13,961,153
Currents, pounds...	32,130,576	1,244,752	25,240,218	1,248,491	16,055,623	1,382,157	733,781	112,531
Dates, pounds...	25,780,468	431,401	26,453,118	431,591	16,118,824	449,729	20,096,550	580,621
Figs, pounds...	20,596,583	968,448	8,327,879	390,327	15,754,672	673,134	3,239,405	163,641
Grapes, cu. ft....	1,330,087	1,545,526	625,364	703,560	1,382,032	1,634,495	676,132	680,021
Lemons		5,227,845		2,366,907		2,451,538		1,577,032
Olive, gallons...	5,743,130	2,528,390	8,713,315	1,551,152	6,672,683	2,742,684	4,367,767	1,624,061
Oranges		52,860		78,586		68,347		94,110
Pineapples		1,355,123		1,175,883		916,371		153,241
Raisins, pounds...	3,873,784	1,598,405	1,604,803	1,367,516	1,757,560	229,351	989,416	153,241
Fruit, preserved...		1,096,259		891,087		890,391		723,094
All others		1,653,106		1,355,982		1,910,703		2,010,171
Total		32,235,011		23,046,778		15,533,582		28,172,371

### EXPORTS OF DOMESTIC FRUITS

Fruit	(For the Calendar Year Ending December 31)							
	1914	1914	1915	1915	1916	1916	1917	1917
	Quality	Value \$	Quality	Value \$	Quality	Value \$	Quality	Value \$
*Apples, pounds...	31,027,551	2,441,094	33,908,508	2,671,601	3,186,467	1,002,007	7,852,773	691,111
**Apples, bbls...	1,541,361	5,685,621	2,176,992	7,686,284	1,670,543	7,205,766	888,104	4,460,000
*Apricots, pounds...	16,941,222	1,598,405	25,748,426	1,598,405	15,564,447	1,512,810	6,728,910	468,771
Barberries		429,812		449,321		704,321		849,921
Lemons, boxes...	94,317	351,897	160,397	417,539	163,667	563,531	154,841	583,000
Oranges, boxes...	1,839,862	4,225,991	1,588,718	3,586,831	1,782,081	4,229,872	1,860,142	4,649,891
*Peaches, pounds...	7,387,161	458,933	18,600,272	1,120,534	9,078,083	6,528,980	6,528,700	614,791
**Pears, pounds...		926,958		716,837		1,239,567		1,099,031
Prunes, pounds...	35,228,737	2,682,560	50,976,789	3,693,059	54,339,218	4,036,836	48,097,017	4,348,831
Raisins, pounds...	21,688,429	1,485,417	58,585,261	4,240,160	57,499,971	4,491,371	48,746,153	4,401,831
**All others		2,694,119		2,342,746		3,605,225		4,065,231
Canned fruit...		5,553,918		6,605,350		5,856,366		6,103,041
All other fruit...		224,023		672,630		699,134		756,301
Total		28,868,899		36,926,587		36,888,814		33,610,851

\*Dried  
\*\*Ripe  
\*\*\*Dried, Ripe or Green



grapes has also decreased materially, or from 1,330,000 cubic feet, (100 cubic feet being equal to one ton) in 1914 to 576,000 cubic feet in 1917. The value of lemons has decreased from \$5,227,000 in 1914, to \$1,877,000 in 1917, but the value of oranges shows an increase of from \$52,000 to \$141,000. Olives have not fluctuated in quantity or price so much as other fruits, 5,743,000 gallons being imported in 1914 and 4,367,000 in 1917. Importations of raisins have been steadily falling off for the last ten years; in 1914 3,873,000 pounds were imported but only 989,000 pounds in 1917, by far the lowest quantity ever recorded. It will be observed that the total value of imported fruits is still very high, and these figures go to prove that there is ample room for a much larger development of the fruit industry in California. The following summary is instructive:

Foreign Trade in Fruits

Year	Imports Value	Exports Value
1914	\$32,235,011	\$28,868,839
1915	23,046,778	36,926,567
1916	25,533,582	35,999,814
1917	23,172,272	33,615,891

Exports of Domestic Fruits

In exports, apples and oranges are the leading fresh fruits, prunes and raisins in dried fruits, while canned fruits are also an important item. The quantity of dried apples exported in 1914 amounted to 31,027,000 pounds, but in 1917 the quantity fell to 7,852,000 pounds. Of green or ripe apples 1,541,000 barrels were exported in 1914, and 958,000 barrels in 1917. Dried apricots also declined from 16,541,000 pounds in 1914 to 6,728,000 pounds in 1917. Figs are not yet being exported in any quantity, but the industry is growing rapidly, and a large acreage has been planted during the last year or two, especially in Fresno County. In citrus fruits the exports are remarkably steady and their value forms an important item.

In 1914, 94,300 boxes of lemons were exported, compared with 154,300 boxes in 1917, while oranges amounted to 1,839,000 boxes in 1914 and 1,860,000 boxes in 1917. Dried peaches, one of our most important crops, shows a considerable falling off in exports since 1915, when it amounted to 18,660,000 pounds. The quantity in 1914 was 7,387,000 pounds, but in 1917 only 6,523,000 pounds were exported. The exports of green or ripe pears is comparatively small, but during the last two years has increased. Prunes have always been one of our largest exports in dried fruits, the quantity in 1914 being 35,228,000 pounds and 48,097,000 pounds in 1917, but in some years have considerably exceeded those figures. The export of raisins has rapidly increased in recent years, and in 1917 equaled that of prunes. The exports in 1914 were 21,688,000 pounds, and in 1917, 46,746,000 pounds, and in 1915 amounted to 58,585,000 pounds.

The only other fruit product that calls for special notice is canned fruits, the value of which in 1914 was \$5,553,000, compared with \$6,103,000 in 1917.

SPRAYING CONTROLS APPLE POWDERY MILDEW IN NORTHWEST

Powdery mildew, the most serious fungous disease occurring on apples in the irrigated orchards of the Northwest, and sometimes causing considerable damage in semiarid regions farther east and south, can be controlled by thorough spraying. Lime-sulphur diluted one to 50 is the spray to use. This is the recommendation of D. F. Fisher, a specialist in the office of fruit disease investigations, United States department of agriculture, after a three-year field investigation of this disease, especially in the Wenatchee Valley. A serious attack of this mildew often results in a crop reduction the following year of more than 50 per cent, and it also causes a dwarfing and a russetting of the fruit which greatly reduces its market value.

Serve and save. Buy war savings stamps! Spend, but spend wisely! Save, and save earnestly! Buy war savings stamps!

Our engineers on the western front are as busy as a bull pup with a carpet slipper.

ROSE LEAF-HOPPER

The Oregon agricultural college at Corvallis, through the Hood River branch of its experiment station, has issued Bulletin 148, "The Life-History and Control of the Rose Leaf-Hopper." Unfortunately the rose is not the only host of this pest, for the apple is seriously injured, as are cherries, plums, grapes, and other economic plants. This bulletin of 32 pages makes a complete study of it. The summary as to the treatment is as follows:

The use of lime-sulphur in the ten-day and 30-day scab sprays has been found effective in controlling the first generation in apple orchards. The spray has to be applied while the insects are in the first and third nymphal stages in order to be effective. After this period, Black-leaf 40, 1-1200 plus five pounds of soap to 100 gallons of water, has been found satisfactory in destroying the hoppers.

On roses, Black-leaf 40, 1-2000 plus five pounds of soap to 100 gallons of water, is effective when applied to insects in the first and third stages of

their growth. For insects in the last two stages of their development increase the Black-leaf to 1-1200. All sprays should be directed upward in order to strike the insects, which are all located on the under surfaces of the leaves.

GROWING PEACHES

Farmers' Bulletin 917, "Growing Peaches," is issued by the United States department of agriculture, and may be had by writing Division of Publications, Washington, D. C. It is a 48 page bulletin giving distribution and statistics of peach growing, discussion of site, location, planting, culture, and pest and disease control.

EVAPORATION OF PRUNES

The Oregon agricultural experiment station has gathered together in Bulletin 145 a fund of valuable information on fruit evaporation, and especially on the evaporation of prunes. The report is made by Profs. C. I. Lewis, F. R. Brown, and A. F. Barss. Diagrams and plans of

funnel and stack types of evaporators are given, and many other illustrations showing methods of handling in the moist climate of the North. The bulletin is for free distribution to residents of Oregon, and we presume California prune growers who send postage may secure it.

DRIED FRUIT SALES

Dealers and packers of licensed dried fruits, which include prunes, raisins, peaches and apples, will not be permitted to make sales prior to June 1, it was announced by the United States food administration recently in a telegram to Ralph P. Merritt, federal food commissioner for the state.

This decision amends a previous ruling of the food administration which would have permitted dealers and packers to make sales on and after May 1. Fruit growers will not be materially affected by the ruling as there is no restriction on buying for future deliveries, it was announced.



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Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

California has surprised itself, and all the rest of the country in fact, by the immense production of food in its rice fields. The industry began in the northern end of the Sacramento Valley and has worked its way southward until Imperial, down next to the Mexican line, is making commercial plantings. The cover illustration shows one of Yolo County's fields, and other Yolo County scenes appear on third page of this issue. Photographs from which these were made were furnished to us by the Yolo County chamber of commerce.

**EDWARD H. SHEPARD**

Edward H. Shepard, founder, editor and publisher of "Better Fruit," one of the best papers devoted to fruit marketing on the Pacific Coast, died at his home in Portland, Monday, April 29. Mr. Shepard is personally known to many California fruit growers, for he has attended and made addresses at state fruit growers' conventions in this state. All who have known him will hear with profound regret of his sudden passing.

**MARKET INFORMATION**

While it is impossible for the government to make prices or to give assurance of stable prices to fruit and vegetable producers, the bureau of markets of the department of agriculture is aiding in every way possible in stabilizing the market. The bureau of markets, now recognizing the needs of the Pacific Coast, has established at the centers of Los Angeles, San Francisco, Portland and Seattle, branches of the bureau which will issue daily reports showing carlot shipments at all important fruit markets. These will be in the form of separ-

ates, that is, each day in season such perishable food commodities as apples, cantaloupes, grapes, onions, peaches, potatoes, tomatoes, watermelons, celery, etc. will be reported on as to shipments and market, cold storage, etc.

The western branches will be under direction of O. W. Schleussner whose office is in the Union Terminal Building, Los Angeles. H. H. Warner is in charge of the Los Angeles branch.

**TO WIN THE WAR**

The third liberty loan campaign was a success. The government asked for three billions; the people responded with pledges to take four. Almost every state exceeded its quota. California did herself proud by exceeding her total quota, and every county and nearly every city and hamlet likewise went over the top. The entire Pacific Coast district, which reported through the San Francisco federal reserve bank, showed 102 per cent subscriptions, which carries us

through properly authorized committees, and through contributions and voluntary service, should for the harvest years of 1919 and 1920 raise food products on its public state lands and on the national lands within its boundaries, said food products to be known as the "Liberty Crop," to be delivered to the warehouses designated and to be tendered by the states, free of charge as a free-will offering to the United States government and to the Allies, the United States government to apportion this "Liberty Crop" between itself and its Allies.

**CASH AND CARRY**

The food administration has suggested that merchants should give the advantage which he deserves to the customer who pays cash and delivers his own groceries. The invariable custom in the past has been that the customer who delivered his own groceries paid the same price as the credit buyer who asked for delivery. There is sometimes as much as 15 per

**THIRD LIBERTY LOAN**

Fifteen Million Subscribers; Four Billions Subscribed "That Government of the People, by the People, and for the People, Shall Not Perish From the Earth."

only slightly over our minimum as a district, but even in that we exceeded the New York district whose percentage was 101. San Francisco City exceeded its minimum by more than \$4,000,000; Los Angeles City, by more than \$9,000,000, and every county in the state is entitled to an honor flag.

It was a wonderful campaign and shows that America is in the war for peace. Next will be the campaign for the Red Cross; following that, another for the Y. M. C. A., and all the time we are buying war savings stamps.

It all costs money, but we are still getting off wonderfully cheap. In England the costs have piled up until one with an income of \$2500 contributes, not for bonds but in straight war tax, \$750.

Be cheery and smile even if it hurts. When peace comes we'll all be proud of ourselves. Billions for Liberty but not one cent for tribute.

**NEXT YEAR**

David Lubin, delegate of the United States to the International Institute of Agriculture at Rome, is looking ahead. He has seen the forced levy on the wheat fields of the Ukraine and the supply of food which it will give to the Central Powers, but the productive power of the countries of the Allies, excepting the United States, is being reduced every month. The effect of the Ukraine supplies on the morale of the armies of the enemy has been great. This must be counteracted by the Allies, or, in other words, by America alone. The armies and the non-combatants of the Allied countries must have vastly more than the exportable surplus which we will have from this year's crops. Mr. Lubin recommends:

As a means toward this end I would suggest that each state in the Union,

cent difference in the cost of doing business on the cash and carry plan and the old credit plan. The smallest difference in price would be estimated at one-tenth of one cent per pound on sugar, ranging from that up to ten, or possibly 15, per cent on other commodities. The farmer who pays cash should have the advantage of this difference in price for he often pays cash and always does his own delivering.

**AN AWAKENING NECESSARY**

At the beginning of the war Lord Kitchener said: "Either the civilian population must go short, of many things to which it is accustomed in times of peace or our armies must go short of munitions and other things indispensable to them."

And that is just a little bit truer today than it was when uttered, and it is a whole lot truer in the understanding of all the peoples of the world, and especially of America. At the beginning of the war we quickly puffed up and proclaimed our willingness to undergo all kinds of sacrifices, yet it was with a most distinct shock that we finally began to appreciate that sacrifice meant sacrifice. Producers of foods have decreased in such numbers that an awful problem faces the world. Those engaged in military service are consuming vastly more than they did before the war, and from the very nature of things this condition must continue or even grow more serious.

Efficiency is the demand of our army, and there is but little time or proper conditions on the field of battle to stop and discuss little economies. Until the mass of us who are behind the man behind the gun can appreciate the necessity of our saving more and producing more there will be no thoroughly efficient war prosecution.

**This Week's War Notes**

The liberty bond drive resulted in a billion over the top.

Germans are using a new form of liquid gas against the American troops.

Bolshevik demands that both America and French consuls at Vladivostok be recalled were denied by the American embassy.

It is declared that the submarine campaign will be still fiercer for it is understood that orders have been given; "Sink everything seen."

Many Pacific Coast homes have been saddened by the drowning in tide rip at Ocean Beach near San Diego of 13 men from Camp Kearney and from the naval air station at North Island.

An agreement has been reached on the bill extending the selective draft law to men who have become 21 years of age since June 5, 1917, and it is expected to receive ratification by both senate and house.

Early in the week it was rumored that the pope had been invited by Germany to present peace proposals, but church officials have denied this rumor. It is known, however, that the Central Powers are extremely anxious to secure a mediator.

The Austrian drive in northern Italy has been sufficient to attract much attention, but as yet has not exhibited any great force. Austria is having internal troubles which are requiring no little attention. Bread riots on land and mutinies on sea are of daily occurrence.

England is giving Zeebrugge another case of nerves by bombarding from airplanes, in fact, these raids were carried out from April 29 to May 5, and it is known that many direct hits have been made. One British machine has been lost and at least one large Teuton airplane has been sunk.

One local war effect has been the reduction in train service. Seven fast trains between the Pacific Coast and Chicago will be taken off June 2. On the same date passenger fares will be advanced to three cents per mile. Mileage, tourist and excursion tickets of all kinds are withdrawn and cancelled. Suburban or commuter's tickets are the only ones which will be allowed to be sold under full one way fare.

While it is perhaps not possible for Russia's condition to become any more chaotic, the awful helplessness and inability even to know what she wants is becoming more and more apparent. The Black Sea fleet has been given over to Ukraine or possibly, according to some rumors, turned directly over to Germany. One rumor referred to the crews rebelling and forcing the vessels to leave the harbor of Odessa, but later the vessels were returned and transferred so as to be practically under control of the Central Powers. Rumors prevail regarding uprising of royalists, of republicans, or pro-German sympathizers, and other rebellions, but no one man or party seems strong enough to make a united country.

The boomerang effect of the great Hun drive into Flanders and France is appearing. Allied artillery, infantry and aviators are uniting in bringing pressure on every salient which has been driven into their lines. The Huns are making occasional attacks but often, as on last Tuesday, airmen discovered massing of troops for the drive and Allied artillery has dispersed the attack before it is ever made. Ypres and Amiens have both been fearfully battered and practically all civilians have deserted those cities, but as a strategic stronghold they are still in the hands of the Allies and they are grimly saying: "We will retain them." United States reinforcements are arriving daily and every day sees the Allied lines strengthened.



# Agricultural News Notes of the Pacific Coast

## Northern California

Nevada County dairymen are building silos.

Tehama County farm bureau will hold a patriotic meeting July 4 at Los Molinos.

Sutter County's first annual farm bureau picnic was recently held near Live Oak.

Nevada County's pear orchards now promise immense crops. The frost did no injury.

Napa Valley dairymen are contemplating a change from butter fat to milk production.

Sonoma and Marin County sheepmen have agreed to pay 12 and 12½ cents for shearing.

Farm Adviser Baade of Napa reports tent caterpillars working havoc in prune orchards.

Amador County has almost its entire wheat crop in storage because of lack of transportation.

Supervisors of Butte County have investigated as to crop conditions and report as to hay and grain bumper crops.

Farm Adviser Jones of Eldorado County is urging farmers mutual insurance to cover that county, Placer and Nevada.

Contra Costa County is hoping for early completion of gaps in the state highway in the neighborhood of Crockett, Port Costa and Martinez.

Examination as to qualifications of candidates for horticultural commissioner of Eldorado County will be held at Placerville court house, May 28.

At a meeting of the Union farm center of Napa County a committee was appointed to determine as to the advisability of building a farm center hall.

The Sutter County farm bureau is asking "What shall we do with the hoboes?" and they have put the answer to the question up to a committee of three.

Range cattlemen met recently at University Farm and discussed with representatives of the forest division as to more complete utilization of forest reserves.

Farmers gathered at Marysville and discussing the labor question urged that as a war measure all saloons should be closed and that eight months term for schools be advocated.

Volunteer agricultural workers are being recruited in San Francisco, largely young men from the high schools. The first unit of 175 recently went to Sonoma County cherry fields.

Oroville, Butte County, hopes to become the home of a vegetable oil factory which will handle products heretofore manufactured in Germany. Peach kernel oil is one of the manufactures contemplated.

Humboldt County has shipped a quantity of Humboldt grown and dried potatoes to the quartermaster's department at Fort Mason. If the product proves satisfactory large production is possible in that county.

Pig clubs have been organized among the high school boys in Glenn County and in Chico. James Mills Orchard Corporation, Butte County Ranch and the Anchorage Farm have supplied the pure bred Berkshire hogs used. Some grades and pure bred Durocs have also been used.

## Central California

Tulare cannery will double its output of tomatoes.

Tulare County Grange held its annual picnic on May Day.

San Joaquin Valley hay makers are keeping the mowers busy.

A hog census of Santa Cruz County shows an increase of 746.

Shafter, Kern County, has organized a potato growers' association.

Tulare creameries recently made a payment aggregating \$146,000 worth of checks.

Tuolumne River is still flowing full banks and pouring its waters over La Grange dam.

Portuguese dairymen of Stanislaus County have organized to protect the interests of the members.

Merced County is already planning for a community fair to be held at Atwater, September 13, 14.

Watsonville, Santa Cruz County, has formed a farm labor office under direction of Farm Adviser Washburn.

Drying winds have materially decreased the tonnage of hay and grain fields of, much of the San Joaquin Valley.

Stanislaus County farm bureau is discussing organized fire fighters, with a definite scheme of field fire control.

California Peach Growers will erect a sawmill and manufacture box shooks. The mill will be in Tuolumne County.

The California Creamery Operators' Association is joining with dairymen in the effort to secure competent dairy help.

Oakdale and the south San Joaquin irrigation districts have appealed to the secretary of the interior for financial aid in building reservoirs.

Tulare and Kings Counties are uniting in a patriotic rally on May 11 and 12 at Mooney's Grove. Governor Stephens and other notables, including 40,000 Central California people, will be present.

Manager Niswander of the California Peach Growers has accepted work with the national food administration. He will have supervision over raisins, evaporated and dried fruit of all kinds.

Oakdale, Stanislaus County, merchants have united in an agreement not to handle wheat nor any other product of wheat during the period of the war. This includes macaroni, breakfast food or anything containing wheat.

A cooperative fruit plant costing \$250,000 is to be constructed at San Jose by Santa Clara Valley orchardists. It will have capacity of 1,000,000 cases of fruit and vegetables. There are 13 acres of land to be covered or used by the plant.

The Raisin Day celebration to be held in Fresno and other San Joaquin Valley points on April 30 will make much of military features in the parades. The committee reports that this season's observance will be "something different."

San Joaquin Valley peach growers who signed up five and ten year contracts are appealing to canners for relief because of cost production during the past year and probable cost during the coming years ruining growers who stand by their contracts.

## Southern California

Bean planting is under way in every bean planting section.

Liberal plantings of Sudan will be made in Southern California.

Ventura County goes over the top with 190 per cent of her liberty loan.

Imperial County cow testing association reports 54 cows exceeding 45 pounds per month.

Gardena, Los Angeles County, is sending out 20 to 30 carloads of strawberries weekly.

San Dimas, Los Angeles County, expects to have a marmalade and jelly factory in full operation by July 1.

The Imperial Valley Milk Producing Association contemplates taking over and managing two creameries.

Lancaster, Los Angeles County, expects to ship a vastly greater tonnage of hay than any preceding year.

H. J. Ryan of the bureau of entomology laboratory at Alhambra is investigating control of the tomato worm.

The W. J. Busch Citrus Products Company near San Diego expects to manufacture a large quantity of peach kernel oil.

Farm Adviser Coit estimates the planting of 40,000 acres of beans in the San Fernando Valley of Los Angeles County.

Los Angeles police court records show that arrests have fallen off two-thirds since the saloons were wiped out on April 1.

The Riverside County horticultural commissioner is aiding Coachella onion producers in perfecting the standardized pack.

While Southern California will be short in its sugar output, it is now anticipated the output of the country in general will be normal.

Hemet and San Jacinto, seriously injured in an earthquake April 21, are being given financial aid in restoration by nearly all sections of California.

Hog raisers of Imperial Valley met at El Centro by invitation of Farm Adviser Sullivan and discussed organization in the interests of better marketing.

It is expected the Prune and Apricot Growers' Association will purchase a large packing house at Santa Paula and perhaps other Ventura County points.

Hemet and San Jacinto, which were so seriously damaged by the earthquake, are being aided by Red Cross and public spirited people of many sections of California.

Sugar factory people are moving from Chino to Oxnard. It is rumored the Chino factory will not run and that all the American beets will be worked through the Oxnard factory.

The largest market and produce handling section in the world is now located in Los Angeles, corner of Seventh and Central Avenue. It has cost millions to construct, and some of the largest produce handling institutions in California are located in it.

A 30 year old Italian cypress is being moved from a Los Angeles County nursery to a Santa Barbara millionaire's grounds. The tree, 80 feet, with its boxed roots, weighs 14 tons, requires two flat cars to carry it, and took a house mover's gang of 14 men several days to hoist and place on car. The moving will cost hundreds of dollars.

## The Coast and General

Nevada sheepmen are paying 15 cents per head for shearing.

Hawaii is distributing parasites of the fruit fly and corn leaf hopper.

A \$75,000 milk condensary has been installed at Independence, Oregon.

The rainfall on the Island of Oahu, Hawaiian Islands, is approximately 32 inches per annum.

The sugar crop of the Hawaiian Islands will be 30 per cent larger in 1918 than any previous year.

Idaho reports many of its wheat fields showing 75 per cent better condition than a year ago this date.

During one month recently Hawaii received 2600 bags of rice and 1200 bags of beans from Japan or Oriental ports.

Dairymen of Lewis County, Washington, are organizing for the improvement of the dairy industry in Chehalis Valley.

Sisal fiber is being produced in the Hawaiian Islands, now approximately 500 tons annually; in 1911 only 151 tons were produced.

Porto Rico pineapple shipments are being made by allotment on the basis of acreage because of shortage of ships to carry the fruit.

The Tacoma, Washington, Poultry Association recently held its 29th annual meeting. Dates for the next show are December 31-January 4.

Members of Puyallup and Sumner fruit growers' associations will pay 20 cents per crate for picking raspberries. This is 15 cents higher than last year.

Packers of Skookum apples recently met at Seattle and elected officers for the coming year. The president is J. A. Warman, and secretary, H. J. Olive, of Cashmere.

A large number of meetings are preceding the grain harvesting in Washington, at which series of lectures and illustrated talk on the control of smut explosions is being made.

Oregon live stock people are appealing for control of poison larkspur. Many Oregon cattle have been killed by this weed this year, and it is feared the losses will be greater than any other season.

The Cattle and Horse Raisers' Association of Oregon has petitioned for the enactment of a state law along the same line as the Idaho law, providing for "priority range rights" on the part of cattlemen.

The planting of potatoes along the Atlantic Coast has been very greatly reduced over that of last year. Carlot shipments from Florida and other southern points have been made for more than a month past.

Dealers assert that the consumption of sauerkraut has decreased 75 per cent since the war started. In the interest of cabbage growers the movement has been started to change its name to "liberty cabbage."

After giving permission for three ships for immediate grain shipment to Holland comment of certain Dutch newspapers became so caustic that the United States has withdrawn the offer of the ships until such comment is recalled.

Arizona cotton growers, who held for the big spring prices, made a mistake this year, for instead of getting the usual increase ten or 12 cents has been knocked from earlier quotations, and long staple has been selling around 66 cents.



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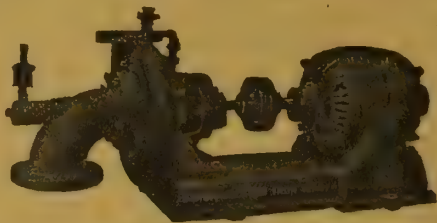


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Howard Canfield Bldg, Santa Barbara, Cal.

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## A Few Timely Suggestions for the Vegetable Garden

Written for California Cultivator By John N. Gardiner

**M**ANY small plants, such as tomatoes, peppers, eggplant, sweet potatoes and the like, die shortly after transplanting when this is done early in the day, due to the excessive heat of the sun. This condition has been specially noticeable the past week, when we were visited by some very hot days. Much loss of this kind can be averted if the transplanting operations are confined to the late afternoon or early evening so that the plants will have the benefit of the long cool night in which to recuperate. Now that our evenings are an hour longer, it is possible for the amateur gardener to do this kind of work after business hours and before nightfall. The ground may be prepared any time and the places marked where the plants are to go, thus saving all the time possible for the actual planting. After the plants are set a bowl should be made around them and filled several times with water. When the water has soaked in for the last time the dry earth should be drawn about the plant, thus conserving the moisture and keeping the roots cool. The following day it will be noticed that there is practically no wilting at all, as the long cool night will have fortified the plant to withstand the rays of Old Sol. It should be borne in mind that moisture is continually passing up the stems of plants into the foliage, where it evaporates to a greater or less degree depending on atmospheric conditions. Hence it follows that during a very hot spell, if a newly set plant is subjected to this severe strain, when its roots have not connected up with the soil, it is very apt to perish.

Another thing. During our very

long dry spell this season, the ground dried out to a considerable depth so that when rains came they in turn soaked in, leaving the upper portions of the soil very dry. Up to this time we had no further rains to carry on the good work and so in most cases must depend on irrigation. This condition will not affect well established trees or large plants whose roots already deep are enjoying the moisture of lower strata. This summer will be one to specially emphasize the good results of having plenty of humus in the soil, which acts like a sponge to retain moisture and liberate it as required by the growing plants. All weeds and garden refuse should be carefully preserved and turned under whenever and wherever possible, and should not be piled up to dry out and be later burned. If you can secure weeds, grass or wild grain from adjacent premises, it will do no harm to cut it down, pile it up on your ground several inches deep, thoroughly wet down and turn under with fork or spade. Old straw or litter from the stable is excellent for this purpose.

Do not forget the Kentucky Wonder bean, which is a very prolific bearer and at the same time one of the most easily grown of all vegetables. It will grow almost anywhere, and with a few sticks or strings for the vines to run upon, you will be surprised at the number and quality of the pods produced when only ordinary care and attention are given.

During these war times nothing should be wasted, and with the longer evenings coming between now and the middle of June, each one of us wherever possible should have something to show as his share of food production and saving.

## Liquid Fire for Crop Destroyers

Written for California Cultivator By Jas. A. Brown

**D**ESTROYING the grasshopper pest of San Bernardino County by means of a distillate flame spray is proving so successful that County Farm Adviser H. F. Bahmeier believes it is only a matter of time and application until this pest will be entirely eliminated from this vicinity.

Last year a vast amount of damage was done the hay crop by a vast swarm of grasshoppers and the cry for relief went forth accordingly. Mr. Bahmeier looked up all the grasshopper literature he could find and then acted. The larvae or eggs of the grasshopper are laid generally in colonies in sunny spots adjacent to the hay fields. It takes about ten days from the time the larvae are hatched until the young hoppers are able to move about sufficiently to obtain their

own food. The plan of attack, therefore, is to catch them before they leave their nests or colonies.

With a crew of some 15 ranchers and armed with a number of distillate sprays, Mr. Bahmeier made his first attack on the Los Flores ranch near San Bernardino, which was one of the heaviest sufferers last year. As soon as a colony was spotted, the men moved through it sending out the flaming spray over the jumping insects and leaving behind a trail of baked hoppers. The trial was completely successful and in the first day's drive several hundred acres were covered, nearly a hundred nests or colonies being destroyed. So completely were the hoppers eliminated that the ranchers are preparing an extensive campaign and plan to rid the entire county of the injurious pests.

## Adaptability to Climate

Written for California Cultivator By Ernest Braunton

**W**E HEAR much at times on adaptability of plants to sections where the climate is or has been quite different from that of the plant's native heath. But we should remember that climate is constantly changing everywhere even though the change is but slight. I personally know of sections of California that at one time were health resorts noted for the lack of humidity in the atmosphere, and therefore recommended to those suffering from lung and throat troubles. When irrigation commenced, troubles of various sorts also begun, though irrigation was a great boon to the section financially. In one part of the state where I lived for six months no fogs were seen until years after irrigation was introduced; it was a noted resort for asthmatics. Twenty years later fogs were common and so hugged the soil that one could scarcely see his feet. From a health resort it changed to the reverse, and with water ditches and

mosquitoes came chills and fever, ague, and other troubles until these were more prevalent than in any other part of the state and the district was avoided by people in all walks of life.

This much is recorded to call attention to the fact that vegetable life is affected to the same degree as human or other animal life. Crops in this district have entirely changed, and those proven impossible of healthy growth many years ago are now their chief output. Live oaks did not grow there naturally and would not flourish there in early days. Now the atmosphere is so charged with moisture that they positively flourish and are not exceeded in this respect by any in the state. Yet many persons persist in asking why Quercus agrifolia is called the "Coast Live Oak" when it will grow vigorously far inland. The answer is that the climate has changed; the oak and its natural demands has not. Its natural range was along the coast only. All



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of Southern California was once practically a desert, but water has changed it to a paradise. Every year the climate is more and more modified by its use. Plants that could not be grown except in favored spots when I came here in 1887 are now fairly common. Particularly is this true of Los Angeles. Then lawns and gardens were few. Now the tens of thousands of lawns in thousands of acres, with water applied to these and other crops, not only in the city, but to all lands surrounding, has greatly modified the climate. The summers are now made more cool, especially during the hottest months, by the great areas covered by cooling vegetable growth. This influence has also greatly modified the climate in the Imperial, Coachella and San Fernando Valleys. In the latter vast stretches of miles of sugar beets, beans, etc. have so cooled the summer air that I notice the change each time I drive through in midsummer. Woodlots, orchards, street trees, and well planted gardens have contributed their share and have also arrested the surface winds to such an extent that spots once disagreeable over many months in the year have now become delightful all-the-year residence sections. Each year hence will record favorable advance and change.

## The Best Tree

The question is often asked me: "What is the finest one tree for general purposes, for street and yard planting, for both ornament and shade?" Sometimes I am asked: "What is the most beautiful evergreen shade tree?" To all of these there can be but one answer—the live oak. *Quercus agrifolia*, the Coast live oak, is, in my opinion the handsomest, most satisfactory ornamental shade tree possible to grow in California. Others may better meet some special purpose, but none can surpass for general use. Each year its beauty, its adaptability, impresses me more and more. Among introduced trees, and standing next to the live oak in any list, is the grand pepper tree, and under some conditions it is superior to the oak. The cork oak is also a splendid tree and should be more freely planted.

## Most Drouth-resistant

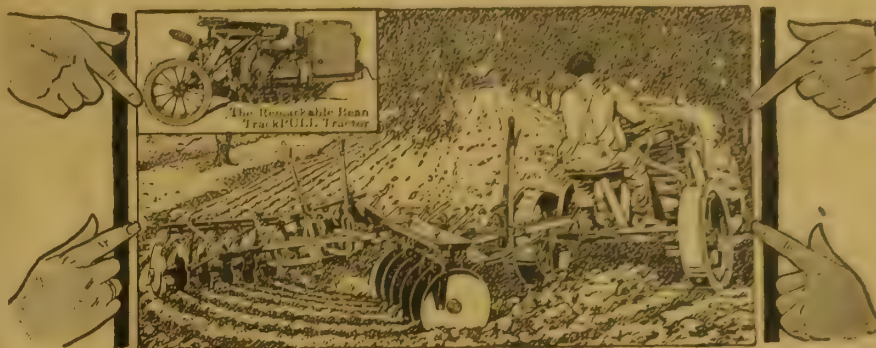
While on a foothill ranch of great extent last week I asked the owner of this more than a thousand acres what plant made the best growth under the hardest conditions. He pointed to a Spartium junceum, or Spanish broom up on a steep hillside and remarked how splendidly it was blooming, how large it was for its age, the fact that it was self-sowing and young plants each year grew beneath the parent shrub. He then stated that over a score of years and with several hundred species of plants, none could equal this record and that the little plant had been set out one autumn, watered once and left to its fate. The soil where it grows is largely loose decomposed granite and but a few inches deep. In some catalogues this shrub is erroneously listed as *Genista Hispanica*, a name which means Spanish broom.

## A Good Shrub

There is a broom grown in local nurseries that goes by the name of *Genista fragrans*, properly a cytisus, that is of quite a different class from the Spanish broom. It is one of the most vigorous of all the group and in good soil makes a very fast and satisfactory growth. It is also the most free in flowering habit of any broom we have in the local market. No mistake will be made if this fine shrub is freely used in parks and gardens in all parts of California.

A writer in the New York Times expresses something that must have been in the minds of many other thoughtful Americans: the futile and even pernicious character of many of our war cartoons. The Kaiser or the Crown Prince or Hindenburg or Tiritz is represented as kicked off a precipice or pulled under the sea or spitted on an American bayonet. It may amuse us and certainly does gratify our sense of the fitness of things; but it does not help us to win the war, and it does foster a sense of complacency and tends to make us boastful. Fewer pictorial predictions about what we are going to do and a wider recognition of what others have done and are doing would be more becoming.—Youth's Companion.

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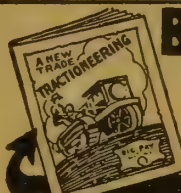
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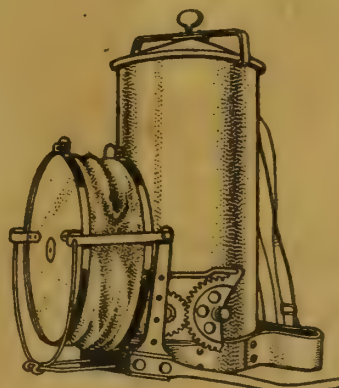
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of registered Holsteins at public sale will consist of ten splendid heifers and two fine young bulls that we will sell in the

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In our consignment will be a daughter of a 33 pound sire out of a 22.85 pound four year old granddaughter of King of the Pontiacs, and her beautiful heifer calf by a son of Prince Gelsche Walker; a granddaughter of Hengerveld De Kol out of a daughter of King Segis Pontiac; a daughter of Admiral Walker Prilly out of a four year old that made 22.32 pounds butter in seven days, 847.55 pounds butter in one year; and others of choice breeding and good type. And note that nine of these ten females are bred to

### SUPREME GLISTA PIETJE

son of Woodcrest Pietie Ormsby and out of Glista Eglantine, 33.32 pounds butter in seven days, and she is by Prince Ybma Spofford 6th, who has a larger percentage of daughters above 30 pounds than any other sire, living or dead, with more than ten tested daughters.

Visit the farm and see our consignment before the sale if you wish.

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*Born March 20, 1917—Light Colored—A Show Bull*

Dam's Record	34.74 lbs. 7 days.	139.63 lbs. 30 days
Dam's Dam	31.70	122.96
Sire's Dam	32.29	130.14
Average	32.91	130.91

His dam has three sisters above 30 pounds that average 36.35.

His dam's dam has eight sisters above 30 pounds.

Sire's dam has seven sisters above 30 pounds.

He has a three year old sister with 34.44 and 138.43 in 30 days.

He is the best young bull available in our herd and one of the very best ever offered in this state.

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other cow of any age or breed. And today at past nine years of age she is making the greatest record for milk and butter of her whole career. We have only a few sons of Prince Alcartra on hand. We know if you could see them and find how moderately we price them that you would want one to head your herd. Come and see us, or write your wants.

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When writing advertisers, mention The Cultivator.

## Making Jack Cheese



WE HAVE had many requests for information as to home made or dairy made cheese. Dairymen without possibility of economical delivery to creameries are sometimes at a loss to know how to handle their products to secure greatest returns. This has been one cause of California's introducing "Jack Cheese." Regarding this cheese W. H. Roussell wrote a few months ago in the Pacific Dairy Review as follows:

"This cheese was originally made in Monterey County about 25 years ago in small quantities, but after it was found to sell well other counties started to manufacture it. As Monterey was the first county to make this kind of cheese, it was named 'Monterey' cheese, but a maker of this cheese suggested that it be given a more distinctive name, and consequently it was called 'Jack' cheese. No one objected to its being called 'Jack' cheese, and all have accepted it as its true name. The cheese is made mostly by Portuguese and Italian-Swiss people, although some of the best of this cheese is now made on a ranch near Modesto.

"The particular value of this cheese lies in its being adapted to making on small dairy farms, its fast and cheap process of manufacture with little equipment. The cheese being small and portable is adapted for home and family use without having to be cut into small portions."

Regarding method of making Prof. H. S. Baird of the University of California gives the following information:

### Method of Making

Jack cheese is made every morning from night's and morning's milk. The mixed milk should not test higher than 0.16 per cent acidity and should have a clean flavor. Standardize the milk to 2.1 or 2.2 per cent fat. Heat the milk to 86 degrees Fahrenheit and add 0.5 to 1.0 per cent commercial starter (clabbered milk). Add sufficient rennet, about six ounces per 1000 pounds milk, to curdle the milk ready for cutting in 25 minutes. Dilute the rennet about 40 times its volume with cold water before adding. The time for cutting is determined by the same method as for Cheddar, testing the curd for firmness. The curd is also cut in the same manner as for Cheddar. After cutting the curd should be allowed to stand a few minutes before stirring; then stir gently with the hands. Stir the curd sufficiently during the cooking process to prevent matting. The heat should be applied ten minutes after cutting and the temperature raised to about 110 to 112 degrees Fahrenheit in 35 minutes or at the rate of about 3½ degrees in five minutes. It will take about 35 to 45 minutes to firm the curd after it reaches the maximum temperature, but the only method for determining the time for dipping should be the firmness of the curd. The curd should be slightly rubbery but not so firm as curd for Cheddar cheese. The whey is removed and the curd stirred sufficiently to remove the excess whey. Too much stirring injures the curd; do not handle it roughly. Salt is added while the curd is warm at the rate of three pounds per 1000 pounds milk and after it is thoroughly mixed and dissolved the curd is ready to press.

### Molding

The press cloths used for molding these cheese are made of heavy sheeting and are about 34 inches square. The cloths are laid out evenly, one over the other, and are spread over the top of a large open pail. Push the center down to the bottom of the pail leaving the edges hanging over the sides. Sufficient curd (about seven pounds to make a six-pound cheese is weighed out and poured into the top press cloth. The four corners of the cloth are caught up with the left hand, while with the right hand the curd is formed round and the cloth straightened. The cloth is now taken up tightly over the curd with the left hand, while the cheese is given a rolling motion on the table with the right hand, pressing at the same time to expel the whey. This twists the press cloth tightly over the curd where it is tied with a string. The excess cloth is spread out evenly over the top of the cheese and it is then ready for the press.

### Pressing

The cheese are pressed between two wooden planks, 12 inches by 1½ inches surface; the length will depend upon the number of cheese pressed or the size of the room. The first board should be laid with a slight slant to allow the whey to drain off readily. These cheese are then placed in the center of the board about one inch apart after which another board is placed on top. If necessary the cheese can be placed four or five layers deep if a board is placed between the layers. Best results can be gotten by placing the boards and cheese in an ordinary upright cheese press. Another method is to brace the first board, near a wall, about three feet from the floor; then level with the top board a lever (two by four, five feet long) is fastened to the wall with a hinge which will allow it to be raised or lowered. These levers, one every four feet, are laid over the top board and a weight (100 pounds) is fastened to the other end. This acts as an automatic press. The cheese are left in the press about 15 hours, after which they are removed, the press cloths taken off and the cheese laid on the shelves. If the press cloth sticks to the cheese, pulling out pieces of cheese when removed, this indicates that the surface gets too dry while in the press. Water thrown on the cheese occasionally or the room kept moist will prevent this. In about two days after removing from the press the cheese should be dipped in hot (200 to 220 degrees Fahrenheit) paraffine and held there for ten seconds. This will prevent shrinkage and gives the cheese a neater appearance.

### Half Skim Jack Cheese

Milk used for half skim Jack cheese should test 1.8 to 2.0 per cent fat. The night's milk may be skimmed and the milk mixed with an equal amount of morning's whole milk. The rate of rennet extract should be decreased sufficiently to curdle the milk ready for cutting in about 45 minutes. The cooking temperature should be lower; about 104 to 106 degrees Fahrenheit and the whey should be removed when the curd is about the same firmness as for full cream Jack. The cheese should not be paraffined as they are usually dried for grating purposes.

## The Banker and the Pure Bred Sire

There are still many places in California where it is not at all easy for a man to secure accommodation at his bank if he wants to use the money for the purchase of dairy cows. If he wants to buy feeder cattle the money is forthcoming, for the banker has been trained to that form of loan and can estimate the hazard of fattening a bunch of cattle for a turnover that will be made within a period of a few months. But gradually the bankers of the state are learning that the dairy cow is the ready cash proposition that helps to finance the entire business of a community. Instead of bringing in cash once a year the dairy cow brings it in every two weeks, or at most every month. Thus the dairyman becomes a cash buyer

and is not compelled to secure long time credit from the grocer, the feed man, and the hardware and implement man. This in turn lessens the credit that the local bank is called upon to extend to these lines of business and releases that much cash to the uses of other lines, including more liberal loans on farm lands and dairy cattle.

But the banker is interested in the business ability of his dairyman client the same as he is in the ability of any other business men who applies for a loan. He wants to know what sort of equipment the dairyman is using in his operations, including land, bullocks, cattle, and machinery, and has particular interest in the kind of cattle the dairyman owns and breeds, to



**H. C. MERRITT, Jr., Manager**

**San Lorenzo** **California**

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**16 California St. San Francisco**

**Sacramento Bank Bldg., Sacramento, Cal.**





## Field Notes from the Live Stock Men

Bridgeford Company, Knightsen, is keeping up the wonderful work started at the beginning of the present test season in their registered herd, having now developed eight cows since January 1 with records above 30 pounds butter in seven days, and a remarkable group of two year olds.

The most sensational performance in their herd lately is the record made by the cow Boweda, who has increased her former record of 31.91 to 37.50 pounds butter in seven days and she is still on test. A new state record junior two year old was uncovered in the last group to go on test, this being

the heifer Tulip Walker, a daughter of King Walker 5th and out of a 22 pound four year old daughter of Korndyke Butter Boy Johanna. Freshening at two years one month she made 26.51 pounds butter from 495 pounds milk in seven days. The senior two year old Tora Pontiac of Vina, a daughter of King of the Pontiacs 14th, made the very nice records of 24.68 pounds butter and 508 pounds milk in seven days, and practically 100 pounds butter from 2110 pounds milk in 30 days. Woodbine Rosa Pearl, a five year old granddaughter of King Pontiac Champion, made 30.52 pounds butter from 742 pounds milk in seven days. This record is given especial prominence through the fact that eight daughters of her grandsire have made over 30 pounds butter in seven days since January 1, 1918, a performance unequalled by the daughters of any other sire in the same length of time. Jessie Fobes Maida, a mature cow sired by a son of De Kol 2nd's Butter Boy 3d and out of a 25 pound granddaughter of Paul De Kol, Jr., made 31.55 pounds butter from 622 pounds milk in seven days. The remarkable average of 23.23 pounds butter in seven days for the entire number of two year olds tested in the herd this spring, is a feature that has probably never been equalled in any other herd on the coast. All of these were junior two year olds except one, and the average age for the nine head is two years two months.

The Guernseys have a new champion. Brookmead's Dorothy 55715, a two year, four months Guernsey owned in Pennsylvania, has a new breed record for cows in her class. She produced in one year 14,179.4 pounds milk and 742.08 pounds fat.

The Holstein-Friesian cow Superba Palmyra 314141, a twin, has broken the fat production record in the junior three year class of the seven day division. She produced 655.1 pounds milk, 30.678 pounds fat. She freshened at the age of three years, five days. On the 80 per cent basis her production is equal to 38.35 pounds butter.

Hollywood Farm, Hollywood, Washington, has an outstanding class of cows and heifers on test now. Two daughters of King Palmyra Fayne have just finished with 31.36 and 32.4 pounds butter in seven days respectively, the latter having previously been consigned to the big Milwaukee sale in June. This gives King Palmyra Fayne three daughters above 31 pounds. Another great record is being made in the herd by a senior three year old daughter of the 32 pound cow Lilith Queen Pauline. She is going at a 34 pound gait with chances of finishing above that mark.

Miss Valley Mead De Kol Walker's complete record, covering only 339 days as a junior three year old, is 21,975.8 pounds milk and 1114.66 pounds butter. She has earned a rest which she may be given this year, after dropping that wonderful bull calf by Sir Aaggie De Kol Acme. She is owned by A. W. Morris & Sons, Woodland.

The Completed Entries for the Fourth Sacramento Sale, show a total of 125 registered Holstein cows and heifers and 15 registered Holstein bulls. California Breeders Sales and Pedigree Company, who will manage the sale, report that they consider these cattle to be unquestionably the best ever offered in a two day sale in California.

Winnie Korndyke Cornucopia De Kol, the great Holstein cow owned by The J. S. Gibson Company, Williams, recently dropped a fine bull calf by Prince Alcartra Korndyke. This youngster has a world's record average for milk production in one year for dam and sire's dam, the two averaging 30,742.7 pounds milk and 1195.73 pounds butter. The average for his dam and sire's dam in seven days is 786.3 pounds milk and 34.75 pounds butter. This youngster will stay in the Gibson herd as junior herd sire.

Hengerveld De Kol Segis Cornucopia, a two year old heifer at Tulare Holstein Farm, owned by W. J. Higdon, Tulare, is on test and has 19.44 pounds butter and 448.2 pounds milk to her credit in seven days. She is a granddaughter of Pietertje Hengerveld Segis, the only living century sire. In the same herd Wayne of Rock made 26.31 pounds butter and 540.8 pounds milk in seven days, 108.63 pounds butter and 2497.4 pounds milk in 30 days. Coloma Beauty Maid, the good three year old bought from Alex Whaley made 98.46 pounds butter from 2258.6 pounds milk in 30 days. Hertinga Willis has now been on test 60 days and has 194.78 pounds butter and 4886.4 pounds milk to her credit, and Thelma Hartog De Kol has 119.63 pounds butter in 2655.8 pounds milk to her credit in 30 days. The great two year old Madrigal Mooike 2nd made 158.43 pounds butter from 4540.8 pounds milk in 60 days, and 240.58 pounds butter from 6770.2 pounds milk in 90 days, and is now milking from 73 to 75 pounds per day. A fine lot of daughters of Prince Riverside Walker are coming on in the herd, and these calves are one of the big hopes for the future in this splendid herd. Herdsman Harry L. Redd has plenty of work cut out for him with the regular line of good cows and heifers yet to freshen and go on test.

Leafy Veeman De Kol 151480 has shown a production of 589.7 pounds milk containing 32.079 pounds fat in seven consecutive days. She freshened at the age of seven years, ten months, 29 days. Her sire is Duke Wayne Veeman De Kol 51164; her dam is Leafy Dawn De Kol 112845. She was bred by Byron Barstow, Earlville, New York, and she is now owned by Abbott & Clark, Cortland, New



### Santa Anita Rancho Anoakia Breeding Farm Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

### Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce that amount of butter in one year.

We have a few of his sons, out of good record dams, for sale.

Inquiries or orders by mail will receive careful and prompt attention.

**SANTA ANITA RANCHO**

**Santa Anita, Cal.**

Anita M. Baldwin, Owner

W. H. Taylor Supt.

## FOURTH SACRAMENTO SALE

State Fair Grounds, Sacramento, Cal. June 5-6, 1918

# 140 Registered Holsteins 140

Contributed from 9 California Herds:

A. W. Morris & Sons, Woodland.  
Pacific States Corporation,  
Tulare.  
The J. S. Gibson Co., Williams.

Gotshall & Magruder, Ripon.  
Henderson Company,  
Sacramento.  
Bonita Stock Farm, Lodi

Buena Alta Herd, Oakland.  
McAlister & Son, Chino.  
Rosamines Rancho, Riverside.

### Offering a Wonderful Group of Females, including:

ONTARIO BLOND PIETJE, a first class individual and she is a 30 pound junior four year old daughter of a 35 pound sire.

A DAUGHTER OF PRINCE GELSCHER WALKER out of a 27 pound daughter of a 32 pound cow.

A DAUGHTER OF KING SEGIS PONTIAC JENNEK out of a great 28 pound four year old and bred to the 36 pound \$6500 bull King Korndyke Pontiac 20th.

TWO DAUGHTERS OF KING MORCO ALCARTRA, son of Tilly Alcartra.

A DAUGHTER OF PRINCE ALCARTRA KORNDYKE, son of Tilly Alcartra, and she made 729.6 pounds butter in one year as a junior two year old.

NINE DAUGHTERS OF KING KORNDYKE SADIE VALE 27TH, beauties, and out of wonderfully bred dams with records up to over 29 pounds butter in seven days.

THREE DAUGHTERS OF KING KORNDYKE SADIE VALE 22ND, one of them out of May Korndyke, for several years the youngest 30 pound cow of the breed.

THREE DAUGHTERS OF KING SEGIS DE KOL KORNDYKE, out of dams with records up to over 28 pounds butter in seven days.

A 20 POUND THREE YEAR OLD DAUGHTER OF PRINCE GELSCHER WALKER, bred to the 40 pound sire Prince Alcartra Korndyke.

A 26.41 POUND COW and her daughter by Sir Korndyke Veeman Hengerveld, 30 pound son of Sir Korndyke Pontiac Artis.

A DAUGHTER OF ADMIRAL WALKER PRILLY out of a dam that made 847.55 pounds butter in one year as a four year old.

SOME GREAT A. R. O. HEIFERS bred to King of the Black and Whites, the first bull whose seven nearest dams averaged over 30 pounds butter in seven days.

A 22.87 POUND COW well along with calf to King Mead of Riverside.

TWO DAUGHTERS OF KING SEGIS 11TH, who is a 34 pound son of King Segis.

A LARGE NUMBER of cows and heifers not included above, with official records up to over 27 pounds butter in seven days, and bred to such bulls as It. King of the Black and Whites, Colantha Sir Pontiac Aaggie, King Mead of Riverside, Prince Gelscher Walker, King Morco Alcartra, Prince Alcartra Korndyke, King Winnie, Pride Fayne Valdessa, King Sadie Vale Rose, and others of outstanding breeding.

### 15 Bulls will be Offered, including:

SEGIS PONTIAC ABBEKERK, son of Segis Pontiac De Kol Burke and a 34 pound daughter of Changeling Butter Boy, and her dam in turn is a 31.70 pound daughter of Tidy Abbecker Prince. He is a beautiful individual, about ready for service, and one of the best young bulls ever offered in the west.

A SON OF KING KORNDYKE SADIE VALE 27TH out of a 29 pound four year old daughter of King Segis 11th, who is a 34 pound son of King Segis. Here is a combination of the greatest blood lines of the breed, and this young fellow is fit to go into a high class herd.

A SON OF KING MEAD OF RIVERSIDE out of a 26.76 pound daughter of Changeling Butter Boy, and her dam is a 30 pound daughter of Tidy Abbecker Prince.

A SON OF KING KORNDYKE SADIE VALE 27TH

out of a 22.95 pound dam that is three-quarters sister to the 41 pound cow Valdessa Scott 2nd.

A SON OF THE 34 POUND SIRE KING PONTIAC NETHERLAND SEGIS 3D out of a 26.86 pound four year old.

MODEL DOMINO GLISTA, son of the 30 pound sire Model King Segis Koningen and out of a 21.72 pound three year old daughter of the 30 pound cow Glista Cora.

TWO SONS OF PRINCE ALCARTRA KORNDYKE, son of Tilly Alcartra, full brothers, out of a great 24 pound dam.

TWO SONS OF KING PONTIAC SEGIS INKA, one out of a 25.70 pound four year old, the other out of a 25.71 pound three year old.

TWO SONS OF THE 33 POUND SIRE SUPREME GLISTA PIETJE, both out of good dams.

This sale will unquestionably contain the finest lot of registered Holsteins ever offered in a two days sale in California, and a very attractive feature of the sale is the fact that there will be more than 30 fresh cows and heifers, and that a very large percentage of the females are bred to some of the greatest sires in service in the state.

Every animal positively guaranteed to be a breeder, tuberculin tested and sold SUBJECT TO TUBERCULIN RETEST BY THE BUYER, every animal pledged to absolute sale without reserve, limit, or by-bid.

CATALOG FREE ON REQUEST

MANAGEMENT OF

## California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President

Sacramento, California.

Auctioneers—Col. Ben A. Rhoades, Harold B. Rhoades.

C. L. Hughes, Sales Manager

A Sale of Extraordinary Character



York. With this production she is the thirty-first cow to obtain place in the list of Holstein-Friesian cows with productions exceeding 32 pounds fat in seven days. Computed on the 80 per cent basis the equivalent butter claimed for Leafy Veeman De Kol amounts to 40.10 pounds.

H. L. and E. H. Murphy have recently sold two Shorthorn bulls to W. Cheyney of Chico. G. A. Murphy has also sold a Shorthorn bull to the same man.

#### CALVES WHICH MAKE PRIZE WINNING STEERS

**A**N ILLINOIS feeder who has proved grand champion carlot winner in 1910, 1912, 1916 and 1917 and is an enthusiastic Aberdeen-Angus admirer gives the following points regarding feeding and utility:

I want them well bred, and to get that kind I go where well bred ones are. About half of the seven loads I entered at the 1917 International Show were pure breds, though a few of them were from herds that had not kept up the pedigrees. I take a trip out through Iowa and the Aberdeen-Angus districts of Illinois every fall when I start to get together the calves that are to be my entries for the following show. I buy them right from the cow's side.

I want to see the sire and dam if possible, as well as the calf, or if not the sire and dam, as many near relatives as possible. Shape, type and finish all appeal to me in picking out the calves then. I want a calf full of quality and style. I want the head up like a bird, a bright countenance. I want a leg under each corner of the calf, with nice quality in the bone; coarse bone means coarse meat on that bone when the animal is finished.

The top and bottom lines of a grand champion steer prospect should be parallel with a deep body between these lines. The rib must be well sprung, and broken off neat and square at the tailhead. I look for a short neck, well set on shoulders with good style and cut up neat around the throatlatch, so that the finished steer cuts meat to the jawbone.

A short head, wide between the eyes, and carrying a heavy jaw, are characteristics of a good feeder that I never overlook. Neat, small ears, well set up to give a keen, bright appearance, go with an eye like a bird. I look for an oily coat of hair on a loose hide with plenty of stretch. A low flank, with a straight hind leg below, brushed by a short tail, about completes the picture of my grade champion prospect.

Given the breeding and the mating up so that all look like peas, all that is necessary to make the grand champions is to get them home and feed and fit them for the big days when the judges hang the ribbons. As I pick Aberdeen-Angus calves, the proper finish is comparatively easy, as no other breed can be fitted and held up without going bad like an overripe apple if not shown just when they are ready.

"The better bred they are, the better they will feed out. I want to see the sire and the dam to tell what a calf will do when she gets in the feed lot. The poppin' good ones have lots of quality and style like a saddle horse."

#### DAUGHTERS OF KING MEAD OF RIVERSIDE MAKING GOOD YEARLY RECORDS IN HARLAN HERD

A number of daughters of King Mead of Riverside are on yearly test in the registered Holstein herd owned by J. H. Harlan Company, Woodland, and have just crossed the 305 day mark, which is a regular test division instituted over a year ago by the Holstein-Friesian Association of America. All of these Mead daughters are heifers, the oldest being Fidorence Mead, a senior four year old, having to her credit 18,684.3 pounds milk and 778.08 pounds butter in 305 days. For the same period Margie Mooie 2nd, another senior four, has 1494.1 pounds milk and 795.80 pounds butter, Modjeska Crane 3d, a junior three, has 14,900.6 pounds milk and 649.43 pounds butter, and Nadgy Korndyke Mooie 2nd, a junior two, has 12,874.1 pounds milk and 572.28 pounds butter. Nadgy Korndyke Mooie 3d, another daughter of King Mead of Riverside, freshening at two years one month,

made 23.80 pounds butter in seven days, 98.92 pounds in 30 days, and at the end of 90 days has 279.25 pounds to her credit. She will be remembered by visitors at the last state fair as one of the beautiful pair of daughters of King Mead of Riverside for which the Harlan Company refused \$1500 each.

#### "AMERICAN'S CREED" BREATHES PATRIOTISM

"The American's Creed," written by William Tyler Page of Maryland, was a winner in a contest for a \$100 prize, offered by the city of Baltimore. Here it is:

"I believe in the United States of America as a government of the people, by the people, for the people; whose just powers are derived from the consent of the governed; a democracy in a republic and a sovereign nation of many sovereign states; a perfect union, one and inseparable; established upon those principles of freedom, equality, justice and humanity for which American patriots sacrificed their lives and fortunes.

"I, therefore, believe it is my duty to my country to love it, to support its constitution, to obey its laws, to respect its flag and to defend it against all enemies."

We'll substitute corn for wheat and victory for defeat.

#### HAVE YOU BEEN KEEPING POSTED

on the wonderful records made during the past year by daughters of Pontiac Korndyke and his son King of the Pontiacs? This great sire and his great son stand in a class by themselves for proven power to transmit high production, and they are great grandsire and grandsire respectively of our wonderful young herdsire

#### KING KORNDYKE PONTIAC 20TH



who is out of that great heifer, Miss Valley Mead De Kol Walker, holder of two world's records, and who recently finished a test covering 339 days during which she produced 21,975.8 pounds milk and 1114.66 pounds butter, the second highest record ever made by a junior three year old even covering a full year.

A NUMBER OF FARSIGHTED BREEDERS HAVE BRED SOME OF THEIR BEST COWS TO THIS RICHLY BRED YOUNGSTER, AND WE WILL STILL ACCEPT A LIMITED NUMBER OF SERVICES FOR APPROVED COWS.

All we have to sell is a few choice bull calves sired by PRINCE RIVERSIDE WALKER, our senior

herd sire, who is by the same sire as Miss Valley Mead De Kol Walker and out of the same dam as the world's yearly official butter record cow, Aaggie Acme of Riverside 2nd.

Our Entire Herd is Tuberculin Tested

#### Tulare Holstein Farm

W. J. Higdon, Owner

TULARE, CAL.

H. L. Redd, Herdsman

When writing advertisers, mention The Cultivator.



#### ORMSBY SEGIS MARIE

A granddaughter of King Segis.

Her records at three years six months:  
Milk, seven days..... 640.3  
Butter seven days..... 26.83  
365 days semi-official:  
Milk.....27,186.8  
(World's record in class)  
Butter.....1,089.6  
(Second highest in class)

#### La Connor Flats Stock Farm

Owned by J. H. Hulbert, Jr.

Mount Vernon, Washington,

Saturday, May 25, 1918

The sale will contain all of the high producers and the entire show herd that was a sensation on the Northwest circuit last year, eleven of the twelve head in the show herd being the get of Segis Pontiac Acme; numbering in all

#### 90 Registered Holstein Cows, Heifers and Bulls

Some groups and individuals in the sale are:

ORMSBY SEGIS MARIE (shown above) together with her yearling son by Segis Pontiac Acme. The heifer herself is a show individual of very high excellence. Her son is a splendid individual, dark in color, has been bred to some of the good ones in the herd, and is qualified in every way to head a real breeding herd.

A 26.90 POUND THREE YEAR OLD that milked 638.2 pounds in seven days.

A BUNCH OF BEAUTIFUL TWO YEAR OLDS, a number of them with official records up to over 24 pounds butter in seven days.

A TWO TIMES 30 POUND COW and her two daughters.

TWENTY A. R. O. COWS AND HEIFERS with records up to over 30 pounds butter in seven days.

The herd has been tuberculin tested regularly for several years, and has been for some time under Federal test. All animals over six months of age will be sold under Federal test and subject to 60 day retest by the purchaser. Every animal pledged to absolute sale and positively guaranteed to be a breeder under the regular sales rules of this company.

MOUNT VERNON is 91 miles north of Seattle on the Great Northern Railroad. The farm is nine miles southwest of Mount Vernon. The Mount Vernon-La Connor stage meets all trains at Mount Vernon and passes directly past the farm. Comfortable hotel accommodations may be had at Hotel Windsor, Mount Vernon, or at La Connor, which is only one mile from the farm.

Management of

CATALOG OF SALE FREE ON REQUEST

#### California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President

Sacramento, California.

C. L. Hughes, Sales Manager

Auctioneer—Col. Ben A. Rhoades, Los Angeles.





## Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal. Unsigned communications receive no attention.

### Hog Questions

What is wrong with a hog that shakes all over when walking after

being hauled and sometimes when in the pen? Can anything be done for him?—Subscriber.

This is very uncommon. It may be a form of chorea or may be due to sore feet from founder. Examine the feet and if they are sore bathe them once a day in cold water and give half a teaspoon of nitrate of potash in the feed once a day. Either trouble will not affect the pork.

### Hog Cholera

Are hogs in high altitudes less

liable to have cholera than in the low country?—Subscriber.

Altitude could have little to do with cholera unless it be that there are less hogs kept in high altitudes and therefore less chance of exposure to the disease.

### Inflamed Udder

About two months ago I bought a cow that had been fresh five days. The calf had been with her and she had not been milked. The udder was swollen and the milk was like water and tasted salty. I called a veteri-

caused this and what can be done for her?—Subscriber, Santa Maria.

The inflamed udder and the salty milk would lead one to think that most of the trouble was in the udder. Any one of several things might cause it but I should fear that the trouble was tuberculosis. Some cows never do have any cream in their milk but the other conditions being present would make the milk unfit for any use. Rub the lumps out of the udder if you can. Feed her green and sloppy feed to keep the bowels free and give her some salt. Have her tested for tuberculosis before using the milk.



Riverby Princess

Photo taken by Cultivator camera only a few days before she farrowed nine dandy pigs. These pigs are sired by Baron Duke 201st, the Grand National Champion at Omaha last year. Riverby Princess is owned by W. F. Sandercock, who was standing behind her when she was photographed on his Natomario Rancho near Sacramento.

arian and he did not seem to do her much good. The milk is not quite so watery and is not salty but the udder has large hard lumps in some places. She gave five gallons of milk twice a day but only gives three now. We were told that the former owner sold her because he could get no cream from her milk. We have set it and find that to be the case. No matter how long it sets there is no cream to amount to anything. What has

### Bad Results from Influenza

I have a mare and horse that are work animals and have been at work steadily. Swellings came between the front legs and along the belly. In a few days the swelling in the mare extended to the udder and milk veins and into the flanks. I put hot applications on them and the swellings went away but the horse seemed to have an attack of distemper and now the mare has a swelling on the shoul-

## Remarkable Records! What Do You Think! In One Season 80% above 30 lb. Records

Eight 30 lb., 7 day butter records, from 10 cows tested this season. Records 32.70 lb. from 30.41 lb. to 37.50 lb., average for eight cows .....

*In one season 88% of 2 yr. olds tested, made above 21 lb. butter 7 days.*

Eight from 21.02 lb. to 26.51 lb. butter seven days. Average for eight heifers 23.86 lb. at average age of 2 years, 2 months. All first calf heifers.

We offer for sale at reasonable prices these young bulls by our herd sire "King Segis Alcartra Abbekerk," sire of the \$50,000 bull "King Segis Pontiac Alcartra." Dam 30 pound daughter of the great sire "Tidy Abbekerk Prince," who has nine 30 pound daughters, her record made at second calving.

No. 1—"Segis Abbekerk Alcartra Pontiac"—Born October 3, 1917. Fine individual seven-eighths white. Dam 25 pound daughter "Spring Farm King Pontiac," one of the best sires of "King of the Pontiacs." The nine first dams of this calf average 30.55 pounds butter in seven days.

No. 2—"Segis Abbekerk of Riverside"—Born July 30, 1917. Nicely marked, two-thirds black. Dam's record seven days 25.01 pounds butter, one year 314 pounds butter, 13,362 pounds milk. First ten dams of this young bull average 28.50 pounds butter seven days.

We also offer several younger bulls from 30 pound dams of high class breeding.

Write for particulars, photos and prices.

## **Bridgford Company**

**Knightsen Contra Costa County California**

# LOOK WHO'S HERE AT HOLLYWOOD!

**A Son of Judge Segis,**

*out of a 23 lb. dam, more white than black.*

**A Son of King Korndyke Sadie Vale,**

*out of a 16.7 lb. daughter of Sir Veeman Hengerveld.*

**A Son of Hollywood Lilith Palmyra,**

*out of a 30 lb. dam, who has a 32.7 lb. dam.*

Let us tell you more about these very highly bred male calves. They will not be here long. They will be worth your while looking up. Their value will increase very fast.

## **HOLLYWOOD FARM**

**F. S. Stimson, Owner**

**Hollywood, Washington**



der. I also have a year old colt that has a swollen sheath. They eat and drink fairly well and their urine and passages from the bowels are all right. Can you tell the cause of the swelling on the three and give a remedy for it?—Subscriber, Shafter.

Such troubles are often seen following mild cases of influenza. They are serious and do not yield readily to treatment. Light work will not hurt them when they are able to do it but they usually tire easily. Keep them in open pasture as much as possible and feed some grain to keep up the strength. Give the following powders: Two pounds nitrate of potash, one pound ground gentian, half pound powdered nux vomica, six ounces sulphate of iron and two pounds farina. Mix well and give a tablespoon of the mixture twice a day in the feed. Give the colt about one-third as much as the older horses.

#### Stoppage of Bowels

I have a six months old heifer that is in very poor condition. About a month ago her bowels did not move for four days. We called a veterinarian and he relieved her but she does not seem to do well since. Some days she eats well and others not; also some days her bowels move all right and next day not. What can we do for her?—Subscriber, San Martin.

The trouble was probably caused by stoppage of the food in the third stomach. Such cases require continual treatment for some time. Give her these medicines as the directions indicate: Three ounces aloin, 12 ounces turpentine and enough raw linseed oil to make one gallon. Mix and shake well. Give one pint of the mixture every other day. Also mix three pounds of epsom salts with one pound common salt and give a handful of this once a day in the feed. If these remedies make the bowels too loose then reduce the quantity but continue to give a little until it is all used.

#### Paralysis from Injured Spine

I have a heifer with her second calf seven months old. She has nursed it and has been fed straw, volunteer oats and corn stalks. We tied her up to milk her four mornings ago putting rope also about her body in front of hips and udder. She struggled but little but when nearly milked she lopped over quite easily. Since then she has not been able to regain her feet. She can move her hind legs but is able to get up only on her knees. At first she nearly got up but fell over and seems to be more helpless since. She eats and drinks heartily and nurses the calf and there seems to be no soreness of any part. Can you tell me what is wrong and what to do for it?—Subscriber, Tollhouse.

You must have tied the rope very tight. The joints of the spine of a cow are very loose and a little pressure between them will cause paralysis but it seldom lasts longer than the pressure remains. This is the method used to throw cattle for an operation but I never knew one to remain paralyzed after the rope was removed. You should apply a strong liniment over the spine where the pressure of the rope was greatest and warm the liniment in by placing a blanket over the spot and rubbing the blanket with a hot flat iron. When she once regains her feet she will probably be all right.

#### Eczema on Cow

For some time my cow has had some sort of breaking out on the back of her neck, shoulders and front legs, consisting of little lumps and pimples. On her legs it seems to itch so that she keeps them licked raw. Can you suggest a remedy?—Subscriber, Claremont.

The irritation of the skin may be caused by a mite in the skin or from the blood being thick. Give her one pound of epsom salts and a half pound of common salt. Dissolve it in two quarts of hot water and when cool give it at one dose as a drench. Repeat the dose in two or three days. Also bathe the skin where the irritation shows once a day for a week or more with a five per cent solution zeno-leum.

#### Sweeney

I have a horse whose shoulders look badly. They seem to have fallen away suddenly in a place about four inches wide and as long as one's hand. Will you kindly tell me if this is what is called sweeney? Is there any remedy or medical treatment that will restore it? The horse is working as usual and nothing of a bad nature is evident.—Subscriber, El Cerrito.

Yes. It is what is called sweeney and is caused by a strain. At first the muscles were probably swollen some but not enough to be very noticeable. Now that the muscles have shrunk below normal it will require heroic treatment to restore them. About the only treatment that will do it is to inject ten or 15 drops of equal parts of turpentine and alcohol deep into the muscles in several places with an hypodermic syringe. It may be necessary to repeat the treatment in two or three weeks. You better get a veterinarian to do it for you as he will have the instruments and know how to use them.

#### PEPPER LEAVES FOR WORMS

C. S. Russel, a subscriber at San Jacinto writes, "A veterinarian has recommended to me as a remedy for worms in horses all the pepper leaves the horse will eat."

With gasoline in France at \$1.29 per gallon the French masses are turning again to the bicycle for joy rides.

### PREVENT BLACKLEG

#### VACCINATE WITH BLACKLEGIDS

SAFEST, SUREST, EASIEST TO USE.  
Order through your Veterinarian or Druggist.  
Write us for free booklets on blackleg and its prevention.

**PARKE, DAVIS & CO.**

Dept. of Animal Industry, DETROIT, MICH.

### Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearsd Bldg., San Francisco  
Carruthers Farms, Mayfield, Cal.



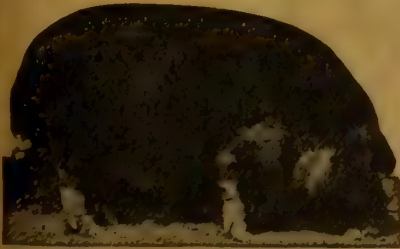
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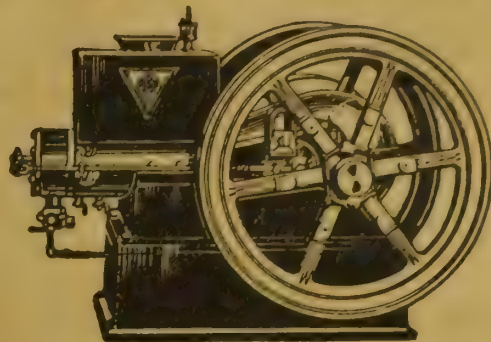
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Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

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A well bred proven herd sire for sale. also a few bull calves.  
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## NATIONAL MILK AND DAIRY FARM EXPOSITION

The greatest gathering of dairymen, farmers and others allied with farm and milk products ever seen in New York City will occur during the week of May 20 when the great National Milk and Dairy Farm Exposition will take place in Grand Central Palace. That the several floors which are to be utilized for the show will be filled with everything of general interest to the public and to those allied with the industry is now assured judging from the large list of concerns that have secured space. All that is new in the equipment line will be shown.

For the observer with a knowledge of the latest that is offered in the dairy and allied lines the products of the exhibitors which will be on view will have a fascination. Never before has the scientific and practical side of the industry been promised such a gigantic display. A great deal of machinery in the Grand Central Palace will be in motion during the show and these displays will be instructive and interesting to everyone. Of course, there will be numerous displays of live cattle, prize stock, and various cattle clubs have secured exhibition space and some interesting live stock displays are in store for the visitors.

Model dairy farms, cows milked by electricity, etc., are also included in the features. Dr. Charles E. North, who is managing director of the show, has arranged a series of contests for which prizes are offered to dealers for the cleanest and best put-up milk; cheese now being made in quantities by American dairymen in varieties that were formerly imported; butter, pot-cheese, condensed milk, ice cream, milk chocolate, evaporated cream, milk powder, etc., etc. In general the exhibition will be 90 per cent educational and designed to teach better efficiency. Special features will be introduced bearing on the following subjects included in the scope of the exposition: agricultural education, dairy farms, cows, country milk shipping stations, railroad transportation, city milk distributing stations, infant milk depots, etc.

Speakers of world-wide reputation will attend the show and many will speak at the various conferences to be held during the week. Among the speakers will be David Franklin Houston, secretary of agriculture of the United States. Governor Whitman of New York will officiate at the opening of the show.

## SWINE BREEDERS' ANNUAL

The annual meeting of the California Swine Breeders' Association will be held at the University Farm, Davis, Thursday and Friday, May 16 and 17.

It is planned to make this the biggest meeting this livestock association has ever held. The program will be particularly strong. Among those who have been asked to address the meeting are: Ralph P. Merritt, food administrator for California, Dean Thos. F. Hunt of the college of agriculture, Professor Gordon H. True, chairman of the live stock commission of California food administration, Dr. Elwood Mead, of the California land settlement board, E. E. Niccolls, representative bureau of markets, United States department of agriculture, Dr. F. M. Hayes of the veterinary division, University of California.

In addition to the above addresses, other subjects of vital importance to the swine industry will be discussed by leading experts.

Every member of the association is urged to attend, and the directors invite every man interested in the business of producing pork whether or not he is a member of the association.—Ralph P. Royce, Secretary.

## MEAT CLUBS

Out in Kansas they are organizing meat clubs. The plan is to get eight or ten families of one neighborhood, all of whom are producers of meat animals, to form a club. Every day or every week one member will slaughter and deliver to other members. Later it is another member's turn, and so on to the end that fresh cuts of meat are available nearly all the time and at reasonable prices.

The first essential for a community meat club is cooperation. The members will know how the animal has been fed and slaughtered and the transportation and middlemen will be



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But we make the old type serum, and do the job so well that though we have sold several million c.c. since we started production in 1917, there has been not even one complaint of failure to protect, or of bad effects following its use.

So, whether you use the old or the new kind, insist on "Cutter's," for in either case you will be getting the best that can possibly be produced.

Remember, a serum may be "clarified," or "clear," and still not be germ free. Such a serum is almost as dangerous as a "bloody" serum. Cutter's Refined Serum is not only clear but it is Germ Free.

Write for our two new booklets, "Hog Cholera Prevention," and "Special and Detailed Information Concerning Hog Cholera Immunization." From the latter you will learn what constitutes good work and why a competent veterinarian should be employed.

## Prices.

Cutter's Refined, Germ-Free, Anti-Hog Cholera Serum is 2½ cents per c.c.

Cutter's Regular, or "old type" Serum, is 1½ cents per c.c.

Cutter's Hog Cholera Virus, for use with either type of serum, is supplied at 1½ cents per c.c. It is dependable.

We prepay shipping charges.

Let your veterinarian order for you and encourage him to be liberal in estimating the amount of serum to use; safety lies in giving more than may be needed rather than trying to figure too fine.

Should he be prejudiced in favor of some other serum, there is a reason that concerns him but not you, except insofar as it should make you more insistent that Cutter's Serum be used. In such case do your own ordering direct from us. You will get "Cutter's" promptly, prepaid.

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eliminated. It should be arranged so that the family getting the high priced cuts one time will get a cheaper cut the next time, thus one family will not get more of the better cuts of meat than any other family.

The animals can be furnished by members of the club or purchased from some other source and the cost borne equally by each. Slaughtering should take place as near the center of the community as possible and here all of the equipment should be kept. The members can come to this central point for their meat or they can take turns in delivering it.

## FEDERAL ENCOURAGEMENT FOR HORSE BREEDING

In order to encourage more general production of horses for military service the United States department of agriculture is placing several stallions of proper type in selected locations.

### Plan of Cooperation

The plan consists primarily in placing stallions of merit, registered in the proper stud books and belonging to the Thoroughbred, American Saddle, Standardbred and Morgan breeds in suitable localities in Vermont, New Hampshire, Virginia, West Virginia, Kentucky, and Tennessee. Mare owners may breed to these stallions on the following terms: The owner of the mare agrees in writing at the time of breeding to give the government an option on the resulting colt as a three-year-old at a stated price, which so far has been \$150. No service fee is charged unless the owner of a colt wishes to be released from the option, in which case it is \$25.

### No Money for Fees

This means that practically no money is invested in service fees. If the colt is purchased by the government no fee is charged, nor is there any charge if the colt is offered to the government and purchase refused because it does not qualify. The breeder does not have to pay a service fee on a colt which dies, which is deformed, or which is seriously injured. Only sound mares that approach either a Cavalry or a Light Artillery type are used. Records taken June 30, 1917, show that 3089 colts have been produced since this plan was put in operation at the beginning of the breeding season in 1913.

### Community Breeding Encouraged

The plan has a number of advantages both to the government and farmers, says the publication. The brood mares are usually farm-work animals, which generally pay for their feed by doing farm work, and the colts are brought up to birth without cost. High-class stallions are available for the mare owners' use. Community breeding, which is of inestimable value, is encouraged. The object of the remount-breeding work is to select for and breed sound horses with quality, stamina, and endurance which conform to the army's needs, and such animals will also be useful for general farm work, especially in mountainous sections.

### IN CHARGE OF PORK PRODUCTION WORK

E. Z. Russell of Omaha, Nebraska, regarded as one of the best known authorities in the country in swine husbandry, has been appointed by the United States department of agriculture as a specialist in swine husbandry. On April 1 he took charge of the swine investigations and pork production work of the animal husbandry division of the department, including the work which the division is doing in cooperation with the states relations service to organize pork clubs. Mr. Russell assisted the animal husbandry division last winter in the pork production campaign. He is a breeder of 30 years' experience and has been the manager of the National Swine Show and secretary of the National Swine Growers' Association.

### JERSEY PREMIUMS

The A. J. C. C. premium list for 1918 contains a list of awards to be made at 55 fairs during the coming season of a total of \$11,103. California is particularly interested in two of these awards, that of \$260, California State Fair, August 31-September 8, and of \$140 at the California Liberty Fair, Los Angeles, October 20-26.



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**SERVICE WHEN YOU NEED IT:** The world-wide De Laval organization, with agents and representatives ready to serve users in almost every locality where cows are milked, insures the buyer of a De Laval quick and efficient service whenever he needs it.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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### AVOCADOS

The Spinks is easily the best variety that has fruited in California. It combines the good points of all the others with none of their defects. A rugged, prolific tree and a superb fruit. A large, grown trees of this and other well known varieties, including the Rey, Linda, Sharpless, Fuerte, I. X. L. Caribou and others, \$3.00 to \$5.00 each. Liberal discount in quantities. W. A. Spinks, Duarte, California.

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Avocado Trees**, budded, Fuerte variety; a hardy, vigorous grower, bears a rich, delicious fruit. Eighty per cent of all avocado trees planted this year were of the Fuerte variety. Our trees are field grown, straight, symmetrical, with large balls. Send for illustrated, descriptive circular showing prices. WEST INDIA GARDENS, Altadena, California.

**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencias on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, California.

**For Sale; Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencias and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110, Los Angeles.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Eureka Lemon Trees**—Closing out some fine three year buds. Very best root system. Very low price for May delivery on these. Any quantity. Smith Citrus Nurseries, 1121 Investment Building, Los Angeles. Main 3604.

**Valencia Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**For Sale**—About 25,000 uncultured lemons, Navel and Valencias of the very highest character of pedigreed stock must be removed at an early day from present location. Will sell in the field at 10 cents apiece. Apply John Hinkle, Lordsburg, California.

**Closing Out**—15,000 choice Orange and Lemon trees for sale. Marsh seedless grapefruit, Eureka lemons, Washington Navel and Valencias. Two year old buds, 30 cents each or in hundreds lots 25 cents. F. A. Anderson, Elsinore, California.

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**Avocado Trees**—Budded; the FUERTE variety is hardest, and bears fruits of the highest quality. Send for new illustrated descriptive circular. WEST INDIA GARDENS, Altadena, California.

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**SHARPLESS AVOCADO TREES** Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**For Sale**—25,000 sour and sweet seed bed stock from 8 to 20 inches. Fine clean and healthy stock. One year old. John L. Preston, Anaheim, Cal. Home 1472.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsurgi, 23rd St., Upland, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, Cal.

**For Sale**—Citrus trees and Seed stock at your own price. Write or come. B. C. Dodson, Glendora, California.

**For Sale**—Choice two year old Valencia trees. A. O. Haver, San Dimas, Cal.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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**Tepary Bean Seed for sale.** Lots of 500 pounds or over 10 cents per pound f. o. b. Puente or Hartville. Twelve cents per pound, smaller lots. Whittier Extension Co., Van Nuys Building, Phones: 10421, Los Angeles. Main 2606.

**Fancy Lot of Sudan Seed for sale;** doubly recleaned; plump and acclimated; grown in Napa County. Sure of germination. Price 18 cents f. o. b. Napa in hundred pound lots, 20 cents in smaller lots. T. H. Stice, M. D., Napa, California.

**Plant a Few Acres of Dwarf Milo Maize for seed.** Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb. in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sudan Grass Seed**—We offer a limited quantity of fancy recleaned Sudan at an attractive price. Write today for samples and prices. Orders filled in the order they are received. Desk B, Bomberger Seed Co., Modesto, California.

**Seed For Sale**—Five tons Sudan, Egyptian Corn, Red and White Maize, yield 21 sacks per acre. Feterita, Peruvian Alfalfa, Amber Cane, wholesale prices. Car lots for feed. Box 501, Fowler, California.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**For Sale**—Sweet potato and all vegetable plants. Rhubarb and Asparagus roots. Any quantity. Reference, First National Bank. Ancona Farm, Ontario, California.

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At present the oldest boars we have to offer are of September and October farrow. They are by Royal Superbus and Fashion Longfellow 27th. We also have a limited number of gilts to offer, bred for May farrow.

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**Make Big Money**—Pork prices jumping up. Breeding stock scarce. Next winter will see the greatest shortage of hogs and the highest prices ever known. Prepare now by getting some Whitten Ranch Poland-Chinas—the prolific, easy-feeding money-makers. Prices reasonable; satisfaction guaranteed; everything immune. Send for valuable free booklet, "Hogs for Profit." Ranch in Tulare County, but write R. H. Whitten, 519B Marsh-Strong Building, Los Angeles.

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**Registered Poland-Chinas** of the medium type. Three sows to farrow their fourth litters in June and two boars, one two years old sired by Panama Chief. The other 3½ years old. Prices very reasonable. Wm. D. Bear, Chalfant, California.

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**We Pay Cash for Hogs of All Sizes,** weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

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## The Late-Hatched Chick

Written for California Cultivator By Jean A. Koethen

**S**IDE by side with the injunction "Hatch early," which has been on many lips this season, may be placed the almost equally important one, "Better late than never." Though the early pullet is the one that lays fall eggs, it sometimes happened that she lays too early, while the early cockerel, though he gets the cream of broiler prices if there happens to be any, must be very early indeed to bring it.

It is quite possible that this year the May chick will prove quite as profitable as those of the February hatch. The weather, for one thing, has favored late hatching. Rains were so late that there was no natural growth of green for the early chick, and rape planted after the rain came is only now ready to feed. Kale is hardly ready yet, but early lettuce is up and in fine condition for April chicks. There will be more greens still this month and if we are favored with a light rain or so chicks on range will have good feeding for two months to come. Pullets of the Mediterranean breeds hatched in May should lay in November. Many Orpingtons will do the same, and Reds should be in laying condition by Thanksgiving if hatched early in May.

Cockerels hatched in May are too late to be sold for broilers, but those of the heavy breeds will make fine Thanksgiving roasters. It will cost something to keep them till November, but a six-pound bird at 35 cents a pound is worth \$2.00, while a broiler weighing 1½ pounds at the same price brings only 55 cents. Experts say it costs more to put the third pound on a cockerel than it costs to put on the first two, but the greater abundance of green feed will do something to offset this greater cost. At any rate, unless all the pens are full, a few broods of May chicks are worth trying. They will come very handy for the family table if the earlier fryers have been sent to market.

It is assumed that these later chicks will be hen hatched and hen brooded. Most early chicks must of necessity be incubator hatched and artificially brooded. April sees all the heavy hens anxious to incubate and they can never be better spared than now. In February and January we hesitated to take these hens out of the laying pen. Now eggs are at their cheapest, and hens that sit now will be ready to lay again in June or July when egg prices are beginning to climb. My experience is, that an Orpington or Rhode Island Red hen that is permitted to sit in April and May will lay steadily through the summer and often well along into the fall. It would be a good thing if every yearling hen that goes broody in April could be allowed to raise her family before she lays again. The rest puts these heavy hens that are always inclined to put on too much fat back into good laying form, and lengthens their period of usefulness as layers.

Being brooded by hens and in mild spring weather the May chick has the advantage of being out of doors from the very beginning. It has also the disadvantage of coming into the world during the breeding season of a chick's worst enemy, the little red mite. May chicks and their mothers should be put in clean coops—a new box of proper size is the best home for them—and kept as far from the rest of the flock as possible, in an open field or orchard where earlier chicks have not run. Put the coop in the shade of a tree if possible. If no tree is available, a few rows of corn or a grape vine will furnish satisfactory shade. Keep the hen free from lice, provide clean water, a pan of dry mash and a feeding of grain once a day, and let the chicks hustle for the rest of their living. If there is only plenty of green feed within their reach they will grow like weeds. Late chicks cannot bear confinement as early chicks can. This is partly because close confinement means a bare yard and very often too much sunshine, partly because there are no chilly winds from which they need protection. If kept free from the ravages of lice and mites, and provided with plenty of shade, fresh water and green range, the May chick will often overcome its handicap in age and give

its April brother or sister a good run for supremacy in size if not in maturity. I have seen Orpington pullets hatched in June and raised under such conditions laying in January. May pullets should begin before Christmas.

But the late chick is profitable only when it is kept growing without a single setback. Let its coop just once become infested with mites; forget for a few weeks to dust the mother hen, or, if she is no longer with them, the chicks themselves; keep them in a coop which is so small that they are crowded or so tight that they have not at all times a bountiful supply of fresh air; confine them in small, bare, dirty runs; and you might as well kill them outright and save yourself further trouble.

The ration of the late chick is, of course, important, but it is not so important as that of the early chick, if only free range is given. There are many bugs and worms to be had now. If you doubt it, watch a chick scratching among the heaped-up leaves in the orchard. There is green feed of all kinds. These two items are half the ration. For the other half a hopper of dry mash and one feeding of milo per day is sufficient. My chicks are thriving this spring on a simpler ration than I used to think possible: a little rolled oats and commercial chick feed the first week, then a dry mash of bran and beef scrap, to which before long alfalfa meal is added in the proportion of two parts bran, one part alfalfa meal, one-half part beef scrap. The earlier chicks had corn meal and beef scrap, but they made no more rapid growth than these. They eat milo maize readily after two weeks, and get their share of the bran and potato skin mash which I feed mornings to the layers. As they grow older cocoanut meal replaces part of the expensive beef scrap.

Hens set in April need more care than those set in February. They can cover more eggs, and the eggs are more fertile, but sitting in warm weather is hard on a hen. She must be kept in the coolest place available. There is no better shade for a sitter than that of a large tree. A dust bath of soft, moist earth must always be within reach, and cool drinking water must never be forgotten. Above all things she must be protected from lice and mites. Dust her before she is given the eggs and again after she has grown accustomed to the new nest. Before the eggs begin to pip, dust her again. Watch the nest when she leaves it to eat and dust for signs of vermin. If the box in which she is sitting is clean and she is at some distance from the hen house mites ought not to find her in three weeks. Still, one never knows, and eternal vigilance is the price of chicks. Should a single mite ever be seen crawling on the eggs, an absolutely new nest must be provided. It is a good plan to scatter a little tobacco powder or strong louse powder in the nest litter. Washing the box with kerosene is a sure preventive of mites, but the oil must never come into contact with the eggs or it will kill the germ. Because it is so difficult to use kerosene and be absolutely sure that it will never find its way to an egg I prefer to trust to louse powder and general sanitary conditions. A hen that is never uncomfortable, never worried by vermin, always free to jump off the nest and wallow in soft dirt, with a cool drink and a bite of corn or milo always before her, should hatch every fertile egg and come off a little lighter in weight but otherwise in better shape than when she went on the nest.

## STORRS EGG LAYING CONTEST

Storrs, Conn., April 25, 1918. Report for the twenty-fifth week.

No pen in the contest was quite able to reach the high mark made by a Connecticut pen of Leghorns last week. The agricultural college pen of "Oregons" from Corvallis, Oregon, were in third place with a yield of 54 eggs. The total yield for all pens in the twenty-fifth week was 4082 eggs, a slight increase over the production for the preceding week and a yield of a little over 58 per cent.

Confinement in close quarters the Continued on Page 605

# DR. HESS

## Instant Louse Killer

### Kills Lice on Poultry and Stock

Use it on your lousy hens and chicks—your lousy colts, horses and cattle. You'll get better chicks—bigger, better fowls—more eggs—better contented stock.

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## DEVIL'S DUST

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System of Feeding  
Our true back Chickens from shell to market gives full particulars  
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Stanislaus County will plant 2500 acres of rice.





## "Lafayette, Here We Are"

Through remote French villages resounds the unaccustomed tramp of American soldiers. But a little while ago and these men were in the quiet of their homes in a peaceful country. Today, in a strange land, they are facing the world's bloodiest struggle.

Pershing at the tomb of America's old time friend months ago reported, with true soldier eloquence, "Lafayette, here we are." And it is for us of the great American democracy to rally all our might to the support of our army and our allies.

From our shores to the battlefields of France are thousands of miles which must be bridged with ceaseless supplies to our troops. Every day calls for action here, no less than there. Cooperate! Sacrifice! These are the watchwords sent over the land by the Government.

In this national effort the Bell System has served with every other essential industry in order that communication, manufacture and transportation may be kept at the peak of efficiency to provide the munitions, ordnance and supplies so urgently needed.



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In either case the PACIFIC ELECTRIC RAILWAY offers unexcelled service to seaside resorts and direct connection to many mountain camps.

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Written for California Cultivator  
By Ida M. Blake

I know a place where sunbeams kiss  
The earth to fairest flower,  
Ah, those sunny hours I would not miss  
In California.

I know a place where bird notes fill  
The air with sweetest song,  
It would your heart with laughter thrill  
In California.

I know a place where mountain lift  
Each rugged peak in air,  
Where nature left her grandest gift,  
In California.

I know a place where life is sweet,  
And earth seems nearer heaven,  
When you and I again shall meet  
In California.

### NEWS FROM JOE

**A** S A middle-aged man came out of the barn at the Seabury place, John Starrett's old horse stopped of its own accord.

"Any news from your boy?" asked Mr. Starrett, after the two men had exchanged greetings.

"Just heard from him," replied Mr. Seabury. "Kind of a relief, too. Fact is, my wife and I have been a good deal disturbed about the draft. We had got quite reconciled to Joe's being with his uncle way off in Tallahassee, because he had such fine prospects and was among relatives. But it was another matter when this war came on. Last night, in particular, my wife and I got to talking it over, and we couldn't see any way out of it but that Joe would have to go. She had a good deal to say about his being a sturdy, hearty fellow, such as the government would delight to get hold of for a soldier; and as for his having any dependents, she and I couldn't anyways fill that bill.

"By bedtime we were all wrought up over it, and could see Joe drafted and over across and in the trenches, and suffering all sorts of things. I couldn't seem to get to sleep any way I could fix it, but just kept turning and tossing.

"After a while Judkins, the mail man, came, and sure enough there was a letter from Joe. We hadn't heard from him for a fortnight. Well, Joe said we needn't worry, for it was all fixed so that the government

couldn't get hold of him. His Uncle Jim—that's my wife's brother—had got him a good job down in Nicaragua; and he was going to start right away, and there he should stay until the war was over."

"Well, well!" said Mr. Starrett, non-committally. Then he added thoughtfully, "Seem's if that doesn't sound just like your boy Joe. Say, there's something queer about this. You say Judkins brought you that letter in the dead of the night?"

"Queer? Of course it was queer," said Mr. Seabury. "Ain't dreams always queer? Didn't you understand that I dreamed it? Well, I did, then, and when I woke up I was all a-drip of sweat. It took me some time to get clear of the feeling that we were all disgraced.

"But that wasn't all of it. First thing this morning my wife had to tell me her experience. She hadn't got any letter, but she had seen Joe himself. He came into the house, looking white and feeble, and says he, 'Well, mother, you needn't fret about my having to go to war. I'm exempt. Doctor says that I'm sick, and won't ever be any better.'

"My wife was terribly down in the mouth. I told her it was only a dream, but that didn't pacify her; and finally I had to fall back on the old saying that dreams always go by contraries.

"Sure enough, ours did. This forenoon Judkins did leave a letter from Joe. He had enlisted, and he's as sound as a nut. He's cheerful and hopeful, and wants us to be. And we are going to try. Of course there is risk, although they say that it doesn't figure out to be nearly so great as you would think. For that matter, a chap is in some danger wherever he is, as long as he is alive at all. Anyway, I'd risk having my boy over in France doing his duty sooner than I would having him down in Nicaragua, or any other place, shirking it."

"Well," said Mr. Starrett deliberately, "looking at it from all sides, I don't see as I can do less than kind of congratulate you."

Then the old white horse, feeling perhaps that enough had been said, started on of its own accord.—Youth's Companion.



### YEAST BREADS WITH HALF WHEAT FLOUR

Any recipe given below will make an 18 to 19 ounce loaf.

#### Method

Make a sponge of the liquid, syrup, yeast, mashed potato and enough of the ground oats to make a batter. Allow to rise until light (about one hour) and then add the salt, fat and remainder of the oats and the flour. These doughs must be much stiffer than ordinary bread dough.

Knead thoroughly and allow to rise until double in bulk. Knead, mold into a loaf, and when double in bulk, bake 50 minutes to one hour. Begin in a hot oven (400 degrees Fahrenheit or 205 degrees Centigrade). After 15 to 20 minutes, lower the temperature to that of a moderate oven (390 degrees Fahrenheit or 200 degrees Centigrade) and finish baking.

#### Ground Rolled Oat Bread

Fifty per cent wheat flour, 38 per cent ground rolled oats, 12 per cent potato (1:4 basis).

One-half cup liquid, one tablespoon syrup, one teaspoon fat, one-half cake compressed yeast, one teaspoon salt, one and one-half cups (six ounces) wheat flour, one cup (4 ounces) ground oats, three-fourths cup (six ounces) mashed potato.

#### Cornmeal Bread

Fifty per cent wheat flour, 38 per cent cornmeal, 12 per cent potato.

One-half cup liquid, one tablespoon syrup, one teaspoon fat, one-half cake compressed yeast, one teaspoon salt, one and three-fourths cups (seven ounces) wheat flour, one cup (five ounces) cornmeal, three-fourths cup (six ounces) mashed potato.

#### Rice Flour Bread

Fifty per cent wheat flour, 38 per cent rice flour, 12 per cent potato.

One-half cup liquid, one tablespoon syrup, one teaspoon fat, one-half cake compressed yeast, one teaspoon salt, one and one-half cups (six ounces) wheat flour, one cup (4 ounces) rice flour, three-fourths cup (six ounces) mashed potato.

#### Buckwheat Bread

Fifty per cent wheat flour, 38 per cent buckwheat, 12 per cent potato.

One-half cup liquid, one tablespoon syrup, one teaspoon fat, one-half cake compressed yeast, one teaspoon salt, one and three-fourths cups (seven ounces) wheat flour, one cup (five ounces) buckwheat, three-fourths cup (six ounces) mashed potato.

#### Barley Bread

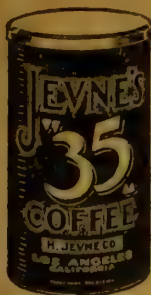
Fifty per cent wheat flour, 38 per cent barley flour, 12 per cent potato.

One-half cup liquid, one tablespoon syrup, one teaspoon fat, one-half cake compressed yeast, one teaspoon salt, one and one-half cups (six ounces) wheat flour, one and two-thirds cups (4 1/2 ounces) barley, three-fourths cup (six ounces) mashed potato.

#### Corn Flour Bread

Fifty per cent wheat flour, 38 per





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LOS ANGELES

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 Regulator, \$5.00**  
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 The Aske Dual Lighting Units are sold at  
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 upon receipt of price and dealer's name.

**Aske Voltage Regulator Co.**  
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 Improved Methods for Unloading your hay and grain, and Easy Doors for  
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 Hand and Power Pumps, Hay Unloading Tools and Door Hangers.  
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has become so popular in its first three years that  
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 System constantly  
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 thly covering all phases of  
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 Journal, Highly endorsed, \$1.25 a year; 3 years \$3  
 Sample copy 15c 39 State St. Rochester, N. Y.

At the bottom of your letter to advertisers just say  
 "California Cultivator" and prompt reply is assured.

cent corn flour, 12 per cent potato.

One-half cup liquid, one tablespoon  
 syrup, one teaspoon fat, one-half cake  
 compressed yeast, one teaspoon salt,  
 one and two-thirds cups (6 3/4 ounces)  
 wheat flour, one and one-fourth cups  
 (4 1/4 ounces) corn flour, three-fourths  
 cup (six ounces) mashed potato.

If dry yeast is used make the  
 sponge with one-eighth to one-fourth  
 cake and allow it to rise over night.  
 If liquid yeast is preferred, substitute  
 one-fourth cup for one-half cake of the  
 compressed yeast and reduce the  
 liquid in recipe to one-fourth cup.

## HOW TO PREVENT SPOILAGE OF FLOUR IN HOT WEATHER

To prevent the losses from spoilage  
 in certain flours and meals during hot  
 weather, the United States food ad-  
 ministration has issued instructions  
 regarding their storage. In view of  
 the importance of breadstuffs to our-  
 selves and the allies at this time, it  
 is essential to reduce to a minimum  
 such losses as may occur through  
 careless handling and storage.

### Keep Cool and Dry

Flours and meals should be stored  
 in cool, dry, well ventilated places;  
 warehouses should be whitewashed  
 and swept clean before these products  
 are placed in them; large supplies  
 should not be accumulated. If too  
 large a stock is on hand, it should be  
 reduced and the flours and meals con-  
 sumed as soon as possible.

Care should be taken in storing  
 bags of flours and meals to have suf-  
 ficient space between the tiers to allow  
 abundant ventilation, and to raise the  
 bags sufficiently from the floor to ex-  
 clude rats, mice and insects; also to  
 permit cleaning of the floors without  
 the necessity of transferring the prod-  
 ucts from one part of the warehouse  
 to another.

Special care should be taken of the  
 following products: Bran, shorts and  
 middlings, corn products containing  
 the outer coating and germ, such as  
 so-called water-ground cornmeal and  
 grits, etc., oats and oat meal, graham  
 and whole-wheat flours, rye flour,  
 barley flour, peanut meal, soya bean  
 meal. These products should be kept  
 moving or be used as soon as prac-  
 ticable and should not be allowed to  
 accumulate in warehouses.

Care should also be taken of pota-  
 toes, as they will begin to sprout in  
 warm weather. If they do sprout, the  
 tender shoots should be rubbed off  
 and the clean potato transferred to  
 new containers, all rotting potatoes to  
 be removed at the same time.

## MAKING THE ARMY CAMP HOME- LIKE

Farm boys of America enlisted in  
 the National Army are sharing in  
 great numbers in the advantages so  
 generously provided for them through  
 contributions made by the farmers of  
 the country in the recent Y. M. C. A.  
 war fund campaign. No small per-  
 centage of the fund, which has now  
 reached \$60,000,000, was contributed  
 by farmers of this country, which was  
 expressive of their desire to provide  
 their boys with some of the comforts  
 and conveniences of home.

No matter where the farm boy or  
 the city boy goes as a soldier, he is  
 greeted by the Y. M. C. A. or Red Tri-  
 angle. It is his club; he finds com-  
 forts there such as he was used to at  
 home. There is a phonograph, a piano,  
 plenty of writing paper, books, maga-  
 zines and newspapers, as well as  
 wholesome vaudeville or home talent  
 entertainments, boxing and wrestling  
 matches and various other recrea-  
 tional and athletic games.

When his day's drill is over the  
 American soldier has a place where  
 he can go and find rest and amuse-  
 ment or a congenial companion or  
 write a letter to mother.

Announcement has just been made  
 that the Y. M. C. A. has been put in  
 charge of a great recreation center  
 in the French Alps for the exclusive  
 use of the American troops on leave,  
 which indicates how completely the  
 soldier boys' welfare is being looked  
 after while he is away from home.

Fifteen million dollars are being  
 spent by this organization among the  
 enlisted men now in training here,  
 and a similar amount is going into the  
 same type of work for those abroad.  
 All of which means that the boys who  
 are to save the world for democracy  
 are not going to lack the comforts  
 and advantages of home even though  
 they are 3000 miles across the sea.

## "Refreshments will be served"

IT makes little difference whether  
 it's a dance, a school or church  
 social, a Red Cross Chapter meeting,  
 a "get-together" meeting of the  
 Farm Bureau or a big rally—

Chances are Ghirardelli's will be  
 "among those present." And—for  
 very good reason:

It promotes sociability. It provides  
 added cheer and comfort. It is a  
 delicious, refreshing food-beverage  
 that is always in order at *any* social  
 function.

In 1/2 lb., 1 lb. and 3 lb. cans; a  
 tablespoonful—one cent's worth—  
 makes a cup.

**D. GHIRARDELLI CO.**

Since 1852

San Francisco

# Ghirardelli's Ground Chocolate



**COOK  
 WITH  
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The fuel adminis-  
 tration authorizes  
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 say that it consid-  
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 cook stoves and  
 oil heaters at this  
 time a very im-  
 portant help in  
 the necessary con-  
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 for war purposes.

## Kitchen Comfort

No matter how hot it is outside, your  
 kitchen is always cool and comfort-  
 able when you use a New Perfection  
 Oil Cook Stove.

Steady heat concentrated on the  
 cooking. No smoke or odor; no dust  
 or dirt. Lights at the touch of a  
 match and heats in a jiffy. Bakes,  
 broils, roasts, toasts—all the year  
 round. Economical. All the conve-  
 nience of gas.

In 1, 2, 3 and 4 burner sizes, with  
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 Ask your dealer today.

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 (California)

# NEW PERFECTION OIL COOK STOVE





## U.C. Farm Expert says—

**"Wood blocks make a very desirable floor"**

Professor J. B. Davidson of the University of California, College of Agriculture, says:

"Wood blocks make a very desirable floor when well laid, either of durable wood or a treated wood, especially for that part of the floor upon which the animal is required to stand. The use of wood blocks obviates to a certain extent the use of a liberal amount of bedding where the animal must lie on the floor."

## California Redwood

*Resists rot and fire*

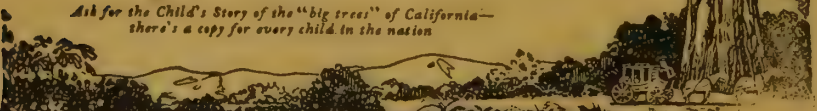
Redwood block paving is *especially* desirable—contains a *natural* preservative. No creosote or artificial preservative is necessary to increase Redwood's durability. Redwood block paving resists wet and dry rot, is permanent in shape and will last a life-time.

Redwood block paving is *not expensive*.

Write for free booklets, "Redwood Block Paving" and "California Redwood on the Farm."

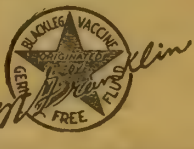
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Made by Dr. O. M. Franklin, Originator  
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— only one handling of each calf — has stood the test of time—easy and safe to use—cannot give the disease to calves or spread it in pastures.

Leading cattlemen use it exclusively and recommend it to their friends—ask any of them or write to the nearest office for references and free Booklet on Blackleg.

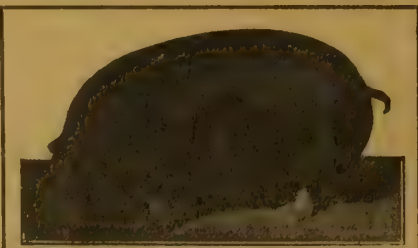
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**M. Bassett**

Hanford, Kings County, Cal.



## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT

**Hauser Packing Co.**

**Los Angeles**

## Los Angeles Market

Los Angeles, May 8, 1918.

### BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....39  
Dairy Exchange price past week on extras.  
May 1 2 3 4 5 6 7  
'18 ... 39 39 39 39 39 39 39  
Rcts. wk. ending May 7, 271,200 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. ....25  
Eastern Daisies .....27  
Domestic Swiss .....40

### EGGS

Exchange quotations. Prices to retailers 2 to 4 cents higher.  
Fresh extras .....33  
Pullets .....35  
Case Count .....37  
Dairy Exchange prices past week on fresh extras.  
May 1 2 3 4 5 6 7  
'18 ... 37 35 36 38 38 38 38  
Rcts. wk. ending May 7, 2823 cases.

### POULTRY

We quote to producers:  
Food administration now allows sale of hens for eating.  
Broilers .....21@25  
Fryers .....30  
Hens, small, 23; heavy .....26  
Ducks, lb. ....20@26  
Roosters, old .....14  
Turkeys .....30@32  
Geese, young, lb. ....6@25  
Rabbits, live, 17@18; dr. ....40

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, May 8, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. ....12.50@13.00  
Heifers, good .....8.00@9.50  
Cows, good .....9.50@10.00  
Canners .....7.00@7.50

Hogs—  
Av. 125 lbs. ....16.00  
Av. 150 lbs. ....16.50  
Av. 175-225 lbs. ....17.00@17.50  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent. ....12.00  
Prime wethers .....11.00  
Ewes .....15.00@15.50  
Lambs .....11.00@11.50  
Yearlings .....11.00@11.50

### POTATOES

Wholesale selling price:  
Oregon Early Rose .....2.25  
Northern Burbank, cwt. ....1.85@1.90  
Idaho Russets .....1.75@1.80  
Locals .....1.40@1.50  
New, lb. ....6@6½  
Sweet, lug .....2.00

### ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. ....1.25  
Brown .....1.25  
White .....2.50  
Crystal Wax, cr. ....1.35  
Garlic .....3

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....60@80  
Jerusalem, lb. ....7½  
Asparagus .....7@7½  
Beans—Wax, lb. ....8@9  
Ky. Wonder .....14@15  
Beets, sk. ....2.00  
Cabbage, lb., 2; sk .....1.65  
Red, lb. ....5  
Carrots, doz. ....30  
Cauliflower, doz. ....1.25  
Celery, doz. ....75@1.25  
Cucumbers — Hothouse, doz. ....75@2.00  
Egg Plant, lb. ....25  
Horseradish, lb. ....15  
Lettuce, doz. ....40@45  
Leeks .....35  
Mint, doz. ....40  
Onions, green, doz. ....25@30  
Peas, Tel., lb. ....6@6½  
Peppers, Chill, lb. ....40  
Parsnips, doz. ....40  
Parsley, doz. ....20  
Radish, doz. ....20  
Rhubarb, C. W. bx. ....1.25@1.35  
Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....80  
Squash—Summer, cr. ....1.00  
Tomatoes, cr. ....2.25  
Turnips, doz. ....35@40  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—W. W. Pearmain .....1.50@2.25  
Spitzenberg .....2.50@3.00  
Y. Newton .....1.50@2.25  
Bananas, lb. ....6@6½  
Loquats, lb. ....6½@7  
Strawberries, tray .....1.00@1.05

### CITRUS

Lemons, packed, 5.50@5.75; loose....4.50  
Juice .....3.50  
Oranges—Navel, bx. ....3.75@6.00  
Valencias .....6.00  
Grapefruit .....3.00  
Limes, basket .....75  
Tangerines, lug .....2.25

### DRIED FRUITS

Regarding dried fruit sales see ruling given on page 587. The local wholesale situation as obtains from day to day is given in the following figures:  
Twenty-five-lb. bx. faced, 50s, ¼c less.  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 16½; extra ch., 17½; fy., 18½; pears, 12; peaches, ch., 11; ex. ch., 12; fy., 12½; citron, 30 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 15½; 40-50s, 14½; 50-60s, 13½; 60-70s, 12-7-8; 70-80s, 11½.  
Figs—Calimyrna, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.

I. X. L. ....25  
N. P. U. ....23  
Nonp. ....26  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....30  
No. 2 Soft Shell, lb. ....26  
Budded, Diamond Brand .....14  
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....31  
Prices delivered in East 1½c higher.

### RICE

See San Francisco rice market.

### BEANS

These are prices made by wholesaler to retailer.

Lady Washington .....14.00  
Limas .....14.00  
Pinks .....9.75  
Manchurian Reds .....9.25  
Baby Mex. ....9.50  
Garbanzos .....10.00@11.00  
Small Whites .....14.00  
Blackeyes .....10.00  
Tepary .....10.00@11.00  
Lentils .....25.00

### HAY

Considerable interest has been manifested in the hay market, and it was feared a material decline might take place. It is holding its own, however, excepting alfalfa which is shaded \$1.00 this week. The local rains of Wednesday will materially improve grain but have little effect on hay.

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oats .....26.80@28.00  
Volunteer Oat .....14.00@16.00  
Wheat .....23.00@26.00  
Barley .....23.00@26.00  
Alfalfa .....18.00@20.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Number 1 alfalfa hay is \$23.00 per ton f. o. b.; common shipping points take a \$1.50 carload rate to destination. Prices from points where a higher or lower rate applies to destination will be correspondingly lower or higher.

### GRAIN AND FEEDSTUFFS

With new barley harvesting on in the Imperial it is probable prices on all grains may be established soon but as yet only chaos obtains and only individual barter can determine price of the feeds or grains.

## San Francisco Markets

San Francisco, May 7, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....40½  
Prices on butter are practically 15 cents above year ago this date.

Prices Extras past week and year ago:  
April 30May 1 2 3 4 5  
'18 ... 41 41 41 41 40½ 40½  
'17 ... 33 33 33½ 34 34  
Rcts. wk. ending May 6, 553,400 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 25; Y. Am. ....23  
Jack cheese, full cream .....26@27  
Half skim .....14@17  
Ore. Y. Am. ....26½

### EGGS

Dairy Exchange Quotations:  
Extras .....40  
First .....39  
Selected Pullets .....35  
Firsts .....37½  
Prices Extra past wk. and yr ago:  
April 30May 1 2 3 4 5  
'18 ... 41½ 39½ 39½ 40 40  
'17 ... 32 32 32½ 32½ 32½  
Rcts. wk. ending May 6, 20,619 cases.

### POULTRY

We quote to producers, lb.:  
The food administration now allows sale of hens for food. Prices are expected to come down.

Leghorn hens, lb.: 31@33; colored do, 33@35; broilers and fryers ¼ to 1 lb., 38; 1 to 1½ lbs., 40@42; 1½ to 2 lbs., 45; 2 to 3 lbs., 47@38; young roosters, 45; old, do, 18@19; ducks, lb., 30@31; geese, 27@30.  
Squabs, doz. ....3.50@4.50  
Belgian Hares, live, lb. ....16@19

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 11½@12½; thin, 8¼@10½; cows and heifers, 8¼@10½; thin, 6¼@7½; calves, 8@11.  
Sheep—Lb. gross weight: Fat, unshorn wethers, 14½@15; ewes, 12@12½; lambs, yearlings, 16@17; milk, 14@14½; shorn sheep, 1¼@2 less.

Hogs—Hard grain-fed, weighing 100 to 140 lbs., 16; 140 to 300 lbs., 17½; 300 to 400 lbs., 17.

### POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks .....1.40@1.60  
River .....1.15@1.60  
New, lb. ....2½@3½

### ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....90@1.00  
Bermudas, Imperial, cr. ....1.30@1.40  
Garlic, lb. ....3@3½

### VEGETABLES

Wholesale selling price.  
Artichokes, doz. ....12½@40



**BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco**



## FARM LABOR

By R. L. Adams

Concluded from last week.

Growers of Santa Clara County are asking for several hundred boys to be drawn from the Oakland school system to help in the fruit harvests of San Jose and vicinity.

At a meeting in Santa Barbara officials of the Woman's Land Army of America made the statement that they had orders for 1500 women to be placed in Southern California, mostly in canneries and fruit work.

These little snapshots of efforts to meet the situation locally or with our own people are taken at random from many similar attempts.

The Valley Fruit Growers' Association of Fresno represents an enterprise conducted by the farmers to bring in several thousand people whom it is expected will be largely drawn from Southern California.

The California and Colorado Agricultural Labor Association is a private enterprise of the six Southern California sugar companies operating

jointly with two Colorado concerns. Their task will include importation of Mexicans for the benefit of their growers.

It is impossible to predict how far these different organizations will meet the situation. That every man, woman and child who can help should do so is a foregone conclusion and only the results of the season will indicate which of the two opinions advanced above is correctly taken.

That the community which is forehanded in meeting its needs will suffer the least handicap is a point well worth bearing in mind, for unless the supply is greater than we have reason to believe, the available sources will not be great enough to go around.

Certain state and federal organizations are already arranging to carry on constructive lines of work in connection with the coming needs for farm labor. These organizations should be given full opportunity for proving their worth in meeting the situation. The quickest way to demonstrate the need for additional help is to call and keep calling continuous-

ly upon the employment offices, especially those which represent the state and federal jurisdiction so that if unable to supply sufficient help from within our borders the need will be more clearly recognized and means undertaken for meeting the shortage.

## The Federal and State Employment Services

California has long had two public organizations connected with employment work. One of these, under direction of John P. McLaughlin, state commissioner of labor, has offices in five cities, San Francisco, Oakland, Sacramento, Fresno and a cooperative office at Los Angeles; the other, under federal jurisdiction in connection with the immigration service, has maintained offices at San Francisco, Sacramento, Fresno, Los Angeles, San Diego, San Luis Obispo, Santa Barbara, Bakersfield and Calexico.

In February W. T. Boyce was appointed director of employment for California, Arizona and Nevada for the United States department of labor. Following his appointment a co-

operative arrangement was perfected between the federal offices and the state offices. An appropriation of \$15,000 by the state, to be met with an appropriation of an equal amount from the federal government, is now available, and these organizations working together are now financially well equipped to work out a plan for better utilization of available and potential supplies of farm labor.

The matter of actually drawing upon all potential supplies and placing this labor upon ranches will be handled by the cooperative arrangements of the state and federal offices as outlined above. The plan contemplates an extension of offices in localities not at present served, elimination of duplicate offices, the providing of qualified men to select ranch help for shipment, and the inclusion of the clearing house feature. The completed plans provide for main offices at Alturas, Redding, Eureka, San Francisco, Marysville, Sacramento, Stockton, San Jose, Fresno, Modesto, Bakersfield, Santa Maria, Los Angeles, San Diego and El Centro. Numerous sub-offices are also planned.

From our work of 1917 it is apparent that much can be done to render more efficient the labor already available. Through an intelligent understanding in advance of coming need for men or release of men greater efficiency will obtain. It is to accomplish such results that we look to this cooperative employment service.

California Industrial Welfare Commission

This state department, in charge of Mrs. Katherine Phillips Edson, is well

Markets on  
Preceding Page

equipped to undertake the mobilization of women, supervise the conditions of and their possible employment in agriculture.

The Woman's Land Army of America with offices at 468 Chamber of Commerce, Los Angeles, is also working to mobilize women for purposes of placing them in ranch work.

## State Board of Education

Acting through the commissioner of secondary education, Will C. Wood, machinery is available for mobilizing the school children in upper and high school grades and to determine the number available for use in farm labor. Responsibility for placing the youngsters rests with the state farm labor agent, working both independently and through the farm advisers, while the matter of supervision is being undertaken by the Y. M. C. A. for boys from 16 to 21 and by the Boy Scout Masters for the boys under 16.

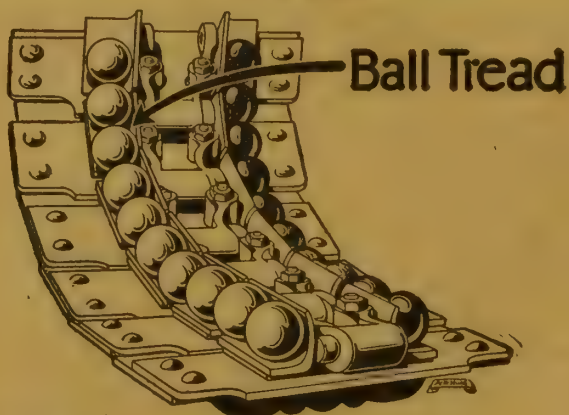
## United States Boys' Working Reserve

The United States Boys' Working Reserve is an organization of the United States department of labor. The state leader is Prof. B. H. Crocheron of the University of California. This organization is prepared to enroll boys from 16 to 21 for farm work. To avoid duplication of effort its work will be handled in connection with the work of the state board of education as outlined above.

## State Farm Labor Agent

Following the outbreak of the war in April of last year, the United States department of labor, concerned with labor in general, relegated to the United States department of agriculture all problems connected with the farm labor supply. Within the United States department of agriculture, this matter was referred directly to the office of farm management concerned primarily in gathering information concerning the exact status of affairs, with the added general responsibility of bringing all organizations into a working unit, thus avoiding surplus of help and duplication of effort.

To bring about an organization which would meet the situation as nearly as it could be foretold, the United States department of agriculture divided the country into four districts putting a man in charge of each district; California falling into the so-called Western Division made up of 11 states. In each of these states a man was then appointed, with the title farm help specialist, to be respon-



# The Balls don't care

whether the weight is on the top or either side—no difference at what angle the machine is running. The balls are round, they take the thrust from any direction. **THRUST**—(Dictionary) to push with sudden impulse from any direction, shove with more or less force; to force ahead; to push; to drive; to press; to urge; to impel; to attack; to crush.

The balls are held in place by the rigid steel frame and the shoe below. For side-hill work the Yuba Ball Tread Tractor is the most serviceable.

Ball-bearing machinery is the nearest approach to frictionless mechanism—and it is friction that wastes power.

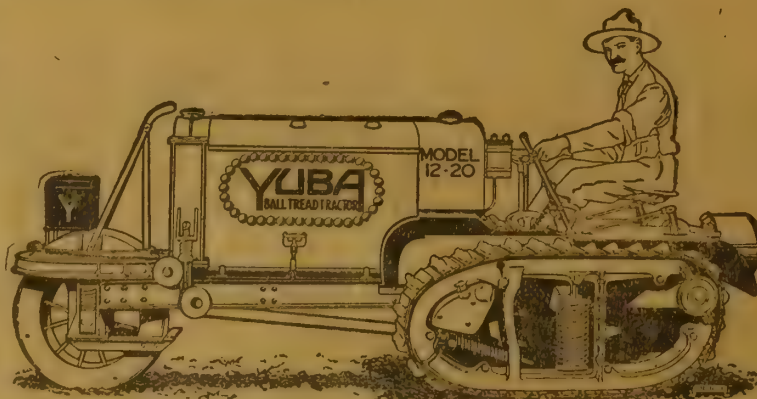
As the tractor glides more easily over the rolling balls, the plows sink deeper; the acreage increases; the cost decreases—that means money saved for you.

## Yuba Manufacturing Company

Department B  
433 California Street  
San Francisco  
California

Factories at  
Marysville and  
Benicia

Model 12-20  
Model 20-35  
Model 40-70





sible for the investigations and actual supply of help so far as he was able.

The work of the department for California was vested in my office. The office had already been charged by the University of California, acting for the state council of defense, with the handling of state farm labor matters. This cooperation thus early resulted in one agency being held responsible for the work of all these organizations. At the present time the office, being as it is in close touch with 36 farm advisers in as many of the 58 counties of the state, is well suited to gather information concerning needs and supplies and to actually furnish labor in certain special instances.

In conclusion it is too early to accurately predict the outcome for the season, but too much emphasis cannot be placed upon the desirability of recognizing conditions as they are and making plans to go just as far as possible in squarely facing the issue and arranging to use every facility at hand to lighten the farmers problem in so far as at least as it concerns ranch labor.

#### DURUM WHEAT

The publications of the department of agriculture are divided into two general classes, those of a practical nature for the reading of the general farmer, and the other, "professional papers." One of the latter class is Bulletin 618, "Experiments with Durum Wheat," by Carlton R. Ball and Allen J. Clark. As noted, this is a professional paper, but the wheat



100 Per Cent Patriotic

Two sons in the army, a member of the Red Cross, and, while past heavy manual labor age, fingers are busy knitting for the soldiers. This is a photograph of L. H. Garnire of Imperial Valley.

producer who may want a valuable fund of information as to durum, which has been grown for seven years near Chico and for three or four years near Modesto, will find much of value in this bulletin. It may be had by sending ten cents to Superintendent of Documents, Government Printing Office, Washington, D. C.

Extensive experiments with durum wheats have been conducted in this country for the last ten to 15 years. During this period their commercial importance has increased steadily. At first they were regarded commercially with indifference, then with hostility, then with approval. Numerous bulletins have discussed their introduction and adaptation and also their value under more or less limited conditions. The purpose of the present bulletin is to assemble the principal accumulated experimental data on yields of durum wheat in the United States, including history, statistics of production, characters and relationships of the important varieties and results of experiments conducted at 20 field stations.

To prevent boots from creaking and cracking rub the soles with linseed oil or place them in a plate full of oil. The treatment also makes them waterproof.

It is better to eat a corn dodger than to be one.

#### SABOTAGE ACT

A weapon which should be effective is now in the hands of federal officials in the act which gives power to punish the willful injury or destruction of war material or of war premises or utilities used in connection with war material, and for other purposes" (popularly known as the sabotage bill), approved April 20, 1918, and is the most important and sweeping of all war statutes relating to hostile or anti-war activities.

It includes every possible kind of supplies of a nature which could be used by the United States government or any of the Allies in the prosecution of the war. It includes not only the finished articles, but all parts and ingredients. As almost everything which is being grown or made today is either for the use of the United States or the Allies or suitable for such use, this bill practically protects articles and supplies of every character, the whole product of agriculture and industry in the United States. Whoever willfully destroys or injures or makes in a defective manner or

causes to be made in a defective manner any of such supplies, materials, parts, or ingredients can be punished under this act.

#### 100 PER CENT PATRIOTIC

One of the features of the recent liberty loan drive has been the "100 Per Cent Patriotic" card displayed by institutions, every member of which has subscribed for a liberty bond. Josephine County, Oregon, proposes to be considered 100 per cent patriotic in the matter of labor. She has resolved, "That the citizens of this community will not tolerate nor countenance any slackers, loafers or shirkers among its able bodied population and will do its best to see that hobos and beggars are abated; that local residents be fully employed; that boys and girls be encouraged in endeavor and thrift and that any person not giving his best endeavors in some useful capacity be dealt with by a special committee who shall take such action as may be deemed advisable by the circumstances."

Some concern was manifested in this state because of reported cotton seed shipments from a boll weevil infested section of Texas. The report arrived that the shipment had been made without any knowledge of the point to which they were consigned. The watchfulness of California inspectors has located both these shipments. Commissioner Hecke reports that one was caught at Whittier, Los Angeles County, and the other at Coachella, Riverside County. Presumably both have been destroyed and the cotton growers breathe easier.

George A. Laminman, horticultural commissioner of Shasta County writes:

We are killing ground squirrels by the thousands up here and are going to help win the war.

If we're going to get the kaiser,

Kill a squirrel,

If we're going to feed the army,

Kill a squirrel.

We're not working for a bounty

But we're freeing Shasta County,

From the squirrel.

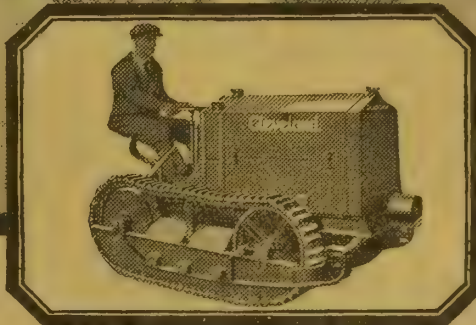
## The Tractor for all the World

PLOWS THE GROUND

PREPARES THE SOIL

PLANTS THE CROPS

REAPS THE HARVEST



**A**LL year 'round utility characterizes the Cleveland Tractor. It performs its varied duties regularly, season by season. It is a "man-of-all-work."

It plows. It harrows. It plants. It reaps.

And it does all of these things *faster* and *better* than was possible before.

But that isn't all. It does the thousand and one other things that require mechanical power. It pulls your manure spreader. It runs your saw. It operates your pump. It cuts your ensilage. It drags logs and lumber. It pulls road machinery. It does practically everything! that horsepower and stationary engines can do. It develops 12 horsepower at the drawbar for hauling and gives 20 horsepower at the pulley for stationary work.

The Cleveland Tractor plows  $3\frac{1}{2}$  miles an hour—eight to ten acres a day—which is equal to the work of *three* good men with *three* 3-horse teams.

*It travels on its own endless tracks which it lays down and picks up as it goes along.*

It operates easily over gullies, ruts, and uneven ground of all kinds. Because of its 600 square inches of traction surface it goes over sand, gumbo, mud and slippery clay without packing the soil, without sinking, miring or floundering.

The Cleveland weighs less than 3200 pounds and is so small that it can be readily driven under and among small fruit trees.

It steers by the power of its own engine and will turn in a twelve foot circle.

It requires less space to house than a single horse.

The Cleveland Tractor was designed by Rollin H. White, the well known motor truck engineer—and is manufactured under his supervision.

He has designed the track for long service. The sections are constructed to prevent filling or packing with mud and protection is provided to prevent dirt and mud from falling into the track. The sections are joined with hardened steel pins which have their bearings in hardened steel bushings.

Gears are protected by dust-proof, dirt-proof cases and are of the same high quality as those used in the finest trucks. Materials used throughout are of the best.

Every step must be taken this year that will speed up farm work—that will enable machinery to replace muscle—that will help produce—and increase harvests.

The Cleveland Tractor is already bearing a big share of the war burden. Farmers are producing larger crops because of the Cleveland—and *are making greater profits.*

You too can help the nation meet the food emergency—and incidentally make more money for yourself. Write to us *now* for complete information and the name of the nearest Cleveland dealer.

## Cleveland Tractor

**THE CLEVELAND TRACTOR CO., Dept. BF, Cleveland, Ohio, U. S. A.**



# Write for -this Big free Book



## THE GIANT FARM POWDERS

STUMPING — AGRICULTURAL

"Better Farming" is all that the name implies. It tells you how to do a hundred and one farm jobs cheaper, quicker, easier and better.

This pocket farm library is published by a company with more than a half a century of experience in making explosives especially to meet western agricultural conditions. You should know the low cost and thorough methods by which they have cleared western land and boosted yields of crops and fruits. Whether you blast or not, you need these 52 pages, fully illustrated, of modern, improved farm methods.

"Better Farming" is sent you free of charge, post-paid. For the price of a postage stamp you get something it has cost us thousands of dollars to prepare. Merely fill in and mail this coupon, or send postal mentioning this paper. Write now.

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"Everything for Blasting"

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Send me 52-page illustrated booklet "Better Farming." I am especially interested in (please check)

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| <input type="checkbox"/> Stump Blasting   | <input type="checkbox"/> Ditch Blasting    | <input type="checkbox"/> Subsoil Blasting |
| <input type="checkbox"/> Boulder Blasting | <input type="checkbox"/> Tree Bed Blasting | <input type="checkbox"/> Road Making      |

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## A Continuous Chain of Boiling Points

—gives easy starting, quick and smooth acceleration, power and mileage, in Red Crown gasoline.

STANDARD OIL COMPANY  
(California)



## The Gasoline of Quality

## HORSE-SHOE-TIRES

DEALERS EVERYWHERE

Guaranteed for 5000 MILES  
Pacific Rubber Co. 1 Los Angeles

# LIME

Pulverized Limestone ..... \$3.35 Per ton  
Ground Limestone ..... \$2.50 Per ton

This is the One Element Lacking in Most California Soils. Write for Booklet  
Riverside Portland Cement Co.  
640 Title Insurance Bldg., Los Angeles, Cal.



## All Fuels Look Alike to



## High Tension MAGNETOS

Whether you burn gasoline, kerosene, distillate, solar oil or spirits, there is a K-W Magneto that will fire *leaner mixtures* and *cheaper grades* of fuel and still develop *full horsepower* than you could get through any other system of ignition.

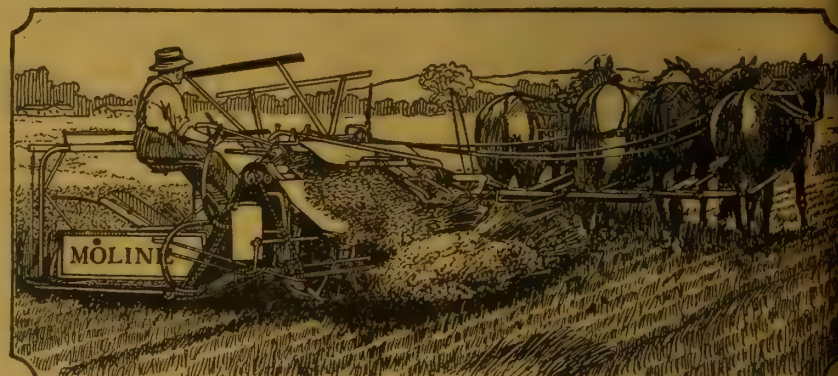
K-W Magnetos effect this saving because they give the hottest spark known—timed accurately. In addition—they start your engine easily—without troublesome batteries or self starters. Their construction protects them against *water, dirt and oil.*

K-W Magnetos are standard equipment on 83 models of tractors, built by forty of the leading manufacturers. See that your new tractor be K-W equipped. If you're not using a K-W on your present tractor, equip *now* with a K-W. There is a type that will cut your fuel bills, and give no trouble ignition. Write for details today and a list of K-W equipped tractors.



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CLEVELAND, OHIO, U.S.A.



## The Moline Grain Binder

The Best Work Under the Worst Conditions

THE Moline Binder has a record of over 50 years of good, honest service wherever grain is grown. In difficult work, in continuous running without stops or breakdowns—in short, in an emergency, Moline superiority is apparent.

The Moline Grain Binder is built from the ground up of the best materials by skilled workmen and has been gradually developed and improved until it is as near perfection as possible. It is built to do the best work even under the worst conditions. That's why a Moline Binder user is never satisfied with anything else.

When you buy a Moline Grain Binder you get the benefit of 50 years' service, the lightest draft, the greatest stability, the strongest construction and the greatest reliability in a grain binder—you get crop insurance.

A typical instance of Moline performance under unusual conditions is reported by Jerry Rivard of Bourbonnais, Ill., as follows:

The Moline 8-ft. Binder bought of you I used in cutting 110 acres of grain. I cut seven acres of new ground where I did not think it could do the work, being very trashy ground, and the men present insisted I was doing wrong to try to cut it with a binder, but the Moline Binder went through cutting all. I never missed a bundle and never broke anything. I consider this remarkable, considering the condition under which the test was made.

We have many letters such as this on file, all equally enthusiastic over the work of the Moline Binder.

The frame of the Moline Binder is extra strong, making it particularly good for tractor use.

See your Moline Dealer about the Moline Binder now, or write us for full information.

### MOLINE LINE

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Solent Six Automobiles.

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MOLINE, ILLINOIS

MANUFACTURERS OF QUALITY

FARM IMPLEMENTS SINCE 1865



# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

May 18, 1918

SAN FRANCISCO

## Los Angeles Union Terminal



One of the World's Best Appointed Market Places.  
See Third Page of This Issue.





## You May Stay at Home —but You Can Help Win the War

**YOU**—“*The Man with the Plow*”—may look far afield, your thoughts may be of the boys in the trenches, you may even feel a strange tugging at the elbow, but your task just now is to plow and plant and produce. *Your* fight is in the “supporting line.” And from that line must come the strength of the

## AMERICAN + RED CROSS

—the great organization of mercy, whose activities  
know no bound in territory, no limit in service.

The atrocities of our enemies have made war's suffering doubly great, but that suffering is being relieved by the Red Cross. In Belgium, in France, in Serbia, in Armenia—wherever war has spread its misery, the Red Cross is at work: nursing the sick

and wounded, feeding and clothing the destitute, rebuilding devastated lands—even preparing crippled soldiers for new lives of the greatest usefulness and independence. And for this great work your money is needed.

Your Red Cross is an all American, largely volunteer, organization, authorized by Congress, headed by President Wilson, audited by the War Department, enthusiastically approved by your Army, your Navy, and your Allies.

The work covers both military and civilian relief in every war torn Allied country and full reports of all expenditures are continually being published, or are available through the Chapters.

Every cent of every dollar received for the Red Cross War Fund is spent for war relief. All administration costs and relief work for other than war purposes (such as the Halifax and Guatemala disasters) are taken care of out of membership dues, and the interest which accrues from the banking of the War Fund has made actually available for war relief at least one dollar and two cents for every dollar contributed.

Contributed through Division of Advertising



United States Gov't. Comm. on Public Information

*This space contributed for the Winning of the War by*  
**California Cultivator, Los Angeles, Cal.**



# California Cultivator

Vol. L, No. 20

LOS ANGELES: May 18, 1918

One Dollar Yearly

## Bureau of Markets Comes to Our Help

A Great Terminal and Market Place Established in Los Angeles and at Same Time the Federal Department of Agriculture Recognizes Needs of Coast in Establishing Many Branches Which Render Service to Producers. Headquarters at Los Angeles Terminal.

**T**HE producer of garden or truck farm crops or even of a small quantity of fruits which are to be marketed in the fresh state finds his problem is not ended when he has produced his crop. He takes his wares to market and, until he has learned the ropes, his confusion after his first look in at the babel

buildings now constructed or under construction is over 4000 feet. The frontage of the market buildings alone aggregates 2800 feet. The frontage of the two six story buildings aggregates 1200 feet. There is trackage sufficient in the market to permit of the unloading and loading of 100 cars daily.

Besides the stalls and markets there are 100 offices located in the buildings. Other features which make

Since the days of the Civil War better cultural practices have been encouraged, but only within the past few years has the bureau of markets been in existence, and only within a few days has this bureau established on the Pacific Coast branches which issue daily reports giving exact conditions of the markets, not only locally but in all parts of the United States.

These branches are now installed at Los Angeles, San Francisco, Portland, Seattle and some of the cities of the Mountain states. These are all under the direction of O. W. Schleussner. Mr. Schleussner's office is Room 204 Union Terminal Building.

Regarding the principal features of this market reporting service the bureau has issued the following statement:

The daily reports show the carlot shipments of important fruits and vegetables for the entire United States; a statement of the f. o. b. prices and daily carlot receipts in the important consuming markets and the jobbing prices prevailing from day to day.

The reports are issued daily during the heavy shipping season of any one commodity, and cover all important perishable food commodities including apples, cantaloupes, grapes, onions, peaches, white potatoes, sweet potatoes, tomatoes, watermelons, celery, and dry beans.

The information given as to carlot shipments and arrivals is obtained from the railroads. The price information is compiled by salaried representatives of this bureau stationed in

miles of private leased wires which are operated by the Bureau of Markets between practically all of the important receiving markets in the United States have now been placed at the disposal of the fruit and vegetable growers and shippers.

Each one of the branch offices is in charge of a trained produce man who thoroughly understands the business and whose duty it is to cover the market each morning and report the arrivals, quality and condition and extent of demand for all seasonable perishable products which are arriving on the market in carloads. This man is on the ground early in the morning while actual sales are being made and reports conditions from personal observation.

The information, gathered in this way, is telegraphed to central headquarters at Washington where it is tabulated and redistributed by private leased wire to all sections of the country from which commercial quantities of the various perishable crops are moving. It is mimeographed by the various branch offices of the bureau located in these producing areas and is distributed by mail free of charge to all interested growers and shippers. By noon each day the Los Angeles office will have ready for distribution the information concerning the conditions prevailing in the central markets at 9 o'clock that morning.

In addition to this information from the market centers, the bureau receives reports from the divisions superintendent on every railroad in the United States moving fruits and vege-



Workers in the Bureau of Markets

The gentleman at the reader's right is O. W. Schleussner in charge of Pacific branches of the bureau of markets, United States department of agriculture. Mr. Schleussner is located at the Los Angeles Union Terminal. The gentleman with hand in pocket is H. H. Warner in charge of the Los Angeles branch.

of hucksters and producers is more than confounded when he endeavors to get next to the man who will turn him over hard cash for his year of labor. He finds a market with all who are connected with it in apparent accord as to how they shall treat him. He stands alone and is entirely helpless. Those with whom he has to deal may be entirely honest, but their system of dealing and their methods are so strange to the producer that he seldom gets justice. At least this is the feeling which obtains with the vast majority of producers of perishable crops.

But few producers understand the magnitude of the business in these crops in our larger centers. On the cover of this issue appears a photograph which gives only a faint idea of one corner in this great industry in the city of Los Angeles. It shows wherein almost unlimited capital has been used by some of the brainiest of business men, and in a true cooperative spirit, to bring together forces which make for economical and expeditious handling of these products and turning them over to consumers at lowest possible cost.

The picture on the cover gives a morning scene in the five acre "court" of the Los Angeles Union Terminal Company. This company has invested five millions in land and reinforced concrete buildings. It has purchased 20 acres near the heart of Los Angeles, ten acres of which are already occupied by this five acre market and the concrete buildings surrounding it. The frontage of these

for almost a complete little city in this great center are a produce exchange, a bank, the Inside Inn, three restaurants, two telegraph offices, cold storage plant, one of the best equipped and up-to-date of any in the United States, Standard oil station, California Walnut Growers' Association, United States Bureau of Markets, and 50 wholesale produce firms doing a business which will total at present rate over \$20,000,000 annually, and it is predicted that before another year rolls around it will total \$40,000,000. The vice-president and general manager of this great institution is Gerald Fitzgerald.

Construction work on this terminal began only a short time before America's entrance into the war in 1917, and it may be some years before it is entirely completed, but its formal dedication took place on Saturday, May 11.

The laudable cooperative spirit which has made this great institution possible and which will make for cheaper foods to the consumers is the same as that manifested by cooperative fruit growers, live stock breeders and others of the producing class who recognize that marketing is a business and unite in securing some one qualified to handle that business. We believe California leads the country in cooperation.

A material aid both to producer and to consumer is now to be given by the department of agriculture. We say it is now to be given, for in the matter of marketing the department of agriculture is only recently in the field.



Preparing the Trackage

One hundred cars of produce may be received and as many forwarded daily from this great terminal.

the principal markets and shipping areas of the country.

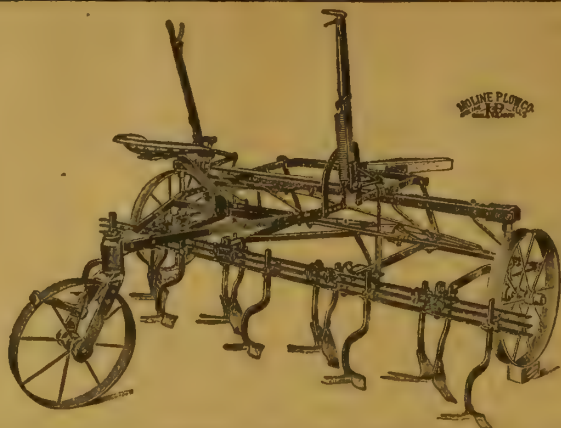
A report of the cold storage holdings of the most important food products in the entire United States is issued semi-monthly. This report shows the total holdings in cold storage, the percentages of decrease or increase, and a comparison of the total figures with those of the corresponding period of the previous year.

All of this information is distributed free of charge. The five thousand

tables in carlot quantities, giving them a complete record of all shipments during the previous 24 hours. This information is also handled telegraphically and appears on the market bulletins, thus giving the shipper complete knowledge of supplies moving to market.

In addition to the furnishing of the market information described, these branches of the bureau are also authorized to receive orders for produce. Continued on Page 615





## For Cultivating Beets or Beans

Use a Moline Beet Cultivator No. 6

WITH a Moline Beet Cultivator No. 6 you cultivate beets or beans two, three or four rows at a time, doing thorough work and covering a great amount of ground with little effort. The cultivator is easily handled, instantly responsive to the driver's control, and provided with a variety of adjustments that make it perfectly adapted for work under any conditions and in any kind of soil.

It is controlled entirely by pushing forward upon foot levers that pivot the wheels and guide the tool bar simultaneously. The tool bar is swung from the main frame so that it is free instantly to move in either direction. The combination of wheel and tool bar control gives the most responsive and flexible control system yet devised.

making it possible to cultivate four rows at a time in a thorough manner without injury to the plants.

The ease with which the machine is handled is due in a large measure to its construction, which is almost entirely of steel, giving maximum strength with minimum weight. Draft is light, the connecting bars between the tool bar and the main frame being directly in the line of draft, subjecting the tool bar to maximum pull.

Two levers are used for raising or lowering the tool bar, operating either together or independently. Two levers are provided as at times it is necessary to force one end of tool bar deeper than the other.

Your Moline Dealer will be glad to show you this cultivator. See him or write us for full information.

### MOLINE LINE

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Salient Six Automobiles.

**MOLINE PLOW CO. Moline, ILLINOIS**  
MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

## Farm for Profit

### and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

## HAUSER PACKING COMPANY

9th and Mateo Sts. 10336-Bdwy. 5600 Los Angeles, Cal.

## Krogh Manufacturing Company

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Los Angeles, Cal.

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**Krogh Pumps are Absolutely Water Balanced  
No End Thrust Possible**

**THE NO TROUBLE PUMP**



Krogh Direct Motor Driven Pump

Fitted with Ring Oil-  
ing Bearings

Renewable Babbitted  
Bushings

Ring Oiling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.



## Soil Nitrogen and Nutrition of Citrus Plants



G. McBETH, physiologist of the United States bureau of plant industry, writes in the Journal of Agricultural Research on the "Relation of the Transformation and Distribution of Soil Nitrogen to the Nutrition of Citrus Plants." From a summary of this paper in the International Review of Agriculture we give the following:

The total nitrogen content of Californian citrus lands is often low, and the quantity rendered assimilable through the natural processes of nitrification soon becomes inadequate to the needs of the plants unless it is maintained by the addition of commercial fertilizers, cover crops, manure, etc. On the other hand, the low rainfall of the districts in which citrus is grown, and the furrow system of irrigation practiced, cause an uneven distribution of the nitrates in the soil, so that the solution of the nitrogen problem depends, not only on a knowledge of the factors influencing nitrification, but also on a knowledge of the forces controlling the distribution of nitrogen in the soil.

In order to solve these problems the author carried out at the citrus experiment station grove at Riverside a series of fertilizer and irrigation experiments with various quantities of ammoniacal and nitric nitrogen. He came to the following conclusions:

### Fertilizer

**Dried blood:** Semi-arid soils often fail to nitrify dried blood when added in one per cent quantities, but invariably nitrify it when it is applied in quantities not exceeding those used ordinarily under field conditions. In the first case it often produces large accumulations of ammonia which do not occur in the second. Semi-arid soils to which has been added one per cent of dried blood may lose, during a six weeks' incubation period, 50 per cent of the nitrogen added. As they frequently give off a strong ammoniacal smell, this loss is probably largely due to the volatilization of the ammonia. Ammonification or nitrification studies on semi-arid soils to which one per cent of dried blood is added are of doubtful value and may lead to erroneous conclusions.

**Green manures:** These, especially the legume varieties, nitrify very rapidly; half of the nitrogen contained in the green plant tissues may be converted into nitrates in 30 days. They also form a valuable source of energy for the non-symbiotic nitrogen-fixing organisms.

### Effect of Furrow Irrigation

The furrow system of irrigation often causes very unsatisfactory distribution of the soil nitrates. In many citrus groves more than two-thirds of the nitric nitrogen in the top four feet of soil are found in the surface six inches, in which, owing to the frequent cultivation, few feeding roots are found. This system also frequently causes the formation of nitre spots, where, if the soil is heavily fertilized, as much as one per cent of nitrogen as nitrates may be found by surface scrapings. These spots, or salt crusts, attributed by Hildgard to rapid nitrification of the organic matter of the soil, by Headden to the fixation of atmospheric nitrogen by nonsymbiotic bacteria, and by Stewart and Peterson to the leaching of nitrates already in the soil, are, according to the author, rather to be attributed to the movement of water in the soil. Their characteristic brown color depends on many factors of which the most important appears to be the deliquescent character of the calcium nitrate.

When the furrow system of irrigation is used the fertilizer should be plowed down somewhat deeper than the land is cultivated, thus placing the food within reach of the feeding roots, because in the cultivated zone the irrigation tends to carry it away from these roots.

Much nitric nitrogen is lost from citrus lands by leaching. The most effective way of preventing this loss is by growing a winter cover crop.

Basin irrigation or overhead irrigation give a more satisfactory distribution of soil nitrates than the furrow system. The first seems to give better results when combined with a mulching system. However, the rapidity with which materials rich in nitrogen decay would seem to make it inadvisable to maintain a constant mulch with these materials, as the nitrates produced would probably be much in excess of the needs of the tree, and much loss would result.

### Mottled Leaf

This disease is usually more marked in plots treated with large applications of commercial nitrogenous fertilizers, and is frequently (but not always) associated with a high nitric nitrogen content of the surface soil, a content which may be due to unfavorable conditions of the soil. An extremely variable supply of plant food and soil moisture may be an important factor in mottling. Mottled leaves usually have a higher moisture and nitrogen content than healthy leaves.

## California Avocado Association Meets

Avocado growers are holding their sixth semi-annual meeting at the Chamber of Commerce in Los Angeles Friday and Saturday of this week. The following is the program:

Afternoon session at 2 o'clock, Friday, May 17: Annual business meeting for members, to include election of three new directors, the adoption of a new constitution, the election of honorary members, and such other business as may come before the meeting.

Evening session, 8 o'clock, May 17: Illustrated lecture, by Dr. H. J. Weber, on "New Avocados, and Avocado Experimental Work."

Forenoon session, 9:30 o'clock, May 18: How Far Can We Go With the Avocado as a Food? Lester Keller, Yorba Linda; The Door Yard Avocado, Ernest Brauntun, Los Angeles; When Is an Avocado Ripe? Mrs. B. H. Sharpless, Tustin; Advertising the Avocado, Mrs. Margaret Stewart, Los Angeles and DeWitt H. Gray, Fresno; Chemical Composition of the Avocado, C. G. Church, Bureau of Chemistry, Department of Agriculture, Washington.

Afternoon session, 2 o'clock, May 18: Why Are the Guatemalan Avocados Best? E. E. Knight, Yorba Linda; My Experiences With the People: The Avocado Psychologically Considered, Dr. W. Earl Flynn, Monrovia; This Association, Thos. H. Shedden, Monrovia; How Do the Cit-

rus Growers View the Avocado? C. E. Needham, Glendora; What Constitutes a Good Avocado? H. M. Halderman, Los Angeles; Care of the Young Avocado Tree for a Year After It Leaves the Nursery, Wm. Hertrich, Alhambra; Question Box.

### CONTROL OF ARGENTINE ANT

The United States department of agriculture is mailing free Farmers' Bulletin 928, "Control of the Argentine Ant in Orange Groves." It refers to the introduction of this pest on ships at the port of New Orleans at least 25 years ago and to its seriousness as a pest in houses, groceries, and orchards. It is also a pest of field and truck crops. One of the most important considerations is that the Argentine ant favors increased infestation by scale insects. Methods of trapping, poisoning, and general control measures are given. This bulletin may be had free by writing Division of Publications, Washington, D. C.

### SHIFTING EXIGENCIES

"What do you understand by Socialism?"

"My ideas on the subject are not clear. As near as I can get it a Socialist is a man who is willing to try almost any kind of a government once."



More than 42,000,000 spark plugs were thrown away last year, largely due to the breakage of inferior insulators



## 42,000,000 spark plugs junked in 1917

*This enormous waste, largely due to the breakage of inferior insulators, rendered needless by a new artificial stone*

**E**VERY motorist knows the constant trouble he has with faulty spark plugs.

This trouble is largely due to the use of inferior material in the insulators. They are frail and simply can not stand up under modern engine conditions. No one should expect them to.

Inferior insulators crack and break down quickly. They cannot withstand the intense heat of the present-day engine—2000° to 3000°F.; the sudden temperature changes; high speeds; and rapidly recurring hammer-like blows of compression. They short-circuit, miss fire and are thrown away.

### The development of Vitrystone

After eight years of experimentation in the Red Head potteries, spark plug experts perfected an insulating material that would not crack under the most severe engine conditions.

Practical tests prove this discovery to be the greatest advance made in spark plug construction in the past ten years.

Vitrystone—the new insulator—is an artificial stone. Its rugged, crystalline structure is unaffected by rapid changes from extreme heat to extreme cold. It withstands the most intense vibration.

The difference between inferior insulators and Vitrystone under the heat of the engine is the difference between a porcelain-ware dish and a stone-ware dish. If you suddenly pour cold liquid into a hot porcelain-ware dish, the chances are it will crack, but you can subject a stone-ware dish to the same test without damaging it.

### Built for years of service

Red Head spark plugs are built for years of service. Rigid tests insure gas-tightness and insulator efficiency. If a Red Head misses, clean it and nine times out of ten it will fire 100% right. It is easy to clean.

Don't wait till your spark plugs crack and miss fire. Put a full set of Red Head plugs in your engine today. You will find that they stand up perfectly under the most severe working conditions.

There is a Red Head plug for every requirement.

Your dealer has Red Head plugs in stock or can get them for you. If he does not, write to us for the name of the nearest dealer who can supply you.

**Emil Grossman M'f'g Corp'n**

**Bush Terminal, Bldg. 20 Brooklyn, N. Y.**

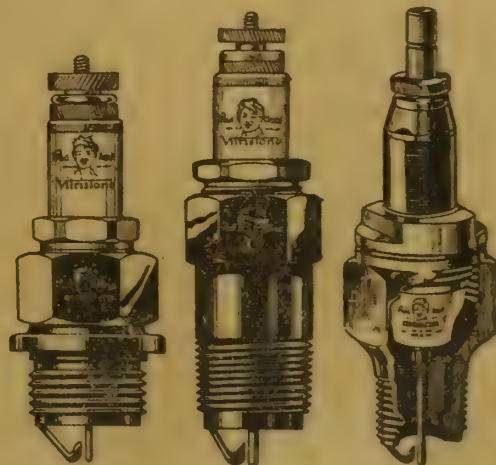
**Red Head Spark Plug**  
  
**Vitrystone Insulator**

#### Stone-ware

Stone-ware withstands extremes of heat and cold. That is why Vitrystone insulators do not break

#### Porcelain-ware

Many inferior insulators are made of the same material as a cheap porcelain-ware cup, which quickly cracks and breaks under sudden and extreme changes of temperature



Red Head Vitrystone Standard 7/8"-18—an all-purpose trouble-proof plug. \$1.00

Red Head Vitrystone Special for Fords. Long body assures accessibility. \$.75

Truck and Tractor 1/2" Vitrystone cap protects mica core. \$1.50.



# Best buy your SEED CORN NOW



The supply of all kinds of seed corn is decreasing every day. Some varieties are almost sold out. Others soon will be. Prices will not be any lower and for some varieties an increase seems certain. By all means buy your seed now.

¶ This year you are sure of high prices for Indian Corn and—you will get a good crop if you plant Morse's Stanford Yellow Dent or Morse's Hybrid Yellow Flint.

¶ Stanford Yellow Dent Corn was originally produced on the famous Vina Ranch. It is acclimated to California and under proper cultural conditions is a sure crop in the interior valleys of California. Last year it first was offered to the public. Scores of satisfied customers have written us their endorsements.

¶ Morse's Hybrid Yellow Flint yields heavy crops of fine, well filled ears. There is no corn better adapted for California. It will soon be time to plant forage and grain sorghums.

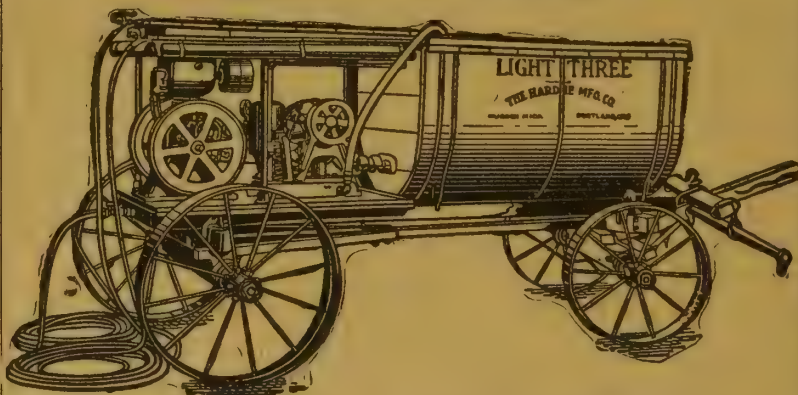
¶ Morse's Dwarf White Milo and Fererita are two varieties that cannot be beat. Morse's Egyptian Corn is another good producer. All seed acclimated and re-cleaned.

¶ New Honey Sorghum is being planted extensively by farmers who want to make their own syrup.

Write Today for Prices to

**C.C. MORSE & CO.**  
729 FRONT ST. SAN FRANCISCO

## Save Your Walnut and Citrus Crop by Using a Hardie Sprayer The Higher Cost of Paying Less



You don't buy a Sprayer simply for the sake of owning it. It is not the possession that appeals to you. It is the service the sprayer gives you. We could do things at less cost, but what would we have gained? A cheap sprayer never satisfies. It gives trouble, requires repairs, fails when you need it most, and wears out quickly.

### Hardie Quality is Like Paying Less

Saving money is the same as making money. Therefore every Hardie sprayer pays dividends to you through its lower upkeep cost and its greater durability. High Pressure, Light Weight, Large Capacity, Powerful Engine, Perfect Agitation, Simple Construction, and the wonderful retank filler, and many other valuable features described in the big spray catalog which will be sent on request.

### Hardie Orchard Gun, \$12.00

The HARDIE ORCHARD GUN that is revolutionizing spraying methods does the work quicker and easier than ever before. This device shoots an enveloping spray, carrying the spray to the high walnut tree tops. GUARANTEED satisfaction or your money back.

WE KNOW THAT "BLACK LEAF 40" IS FATAL TO APHIS.

**The Hardie Manufacturing Co.** 200 N. Los Angeles St., Los Angeles  
Store Room: A. F. George Co.



## IOWA SEED CORN

White and  
Yellow Dent

Carefully Selected and  
Acclimated. Five years  
in Riverside County, Cali-  
fornia.

Send for Samples and Prices

**Newton & Harding**  
113 E. Seventh St. Phone 972  
Corona, California

## Fruit Standardization

Shippers Try to Put One Over but Reckon Without Billy Wood



TATE Horticultural Commissioner Hecke is giving out the following from a report made by County Horticultural Commissioner Wood of Los Angeles. It has to do with the standardization of strawberry packs and is one of the indications that our standardization laws will mean better reputation and better money for our fruit growers.

In another place may be seen the state commissioner's appeal for enforcement of standardization.

Commissioner Wood writes:

The strawberry crop here is very light this season and the price has been exceptionally high, so much so that many growers could not resist putting in anything in the shape of a berry that would help fill the boxes. In fact they had carried this to such an extent that complaints of consumers came into the office. I immediately took the matter up with the field inspectors and visited the berry fields where the picking was going on. I soon found that the complaints were justified. I also found that nearly all of the Japanese had formed an association so strong that they had complete control of the berry market and that anyone who wanted berries must take them as they came or leave them; in fact, dealers who made complaints requested me not to use their names because the "Japs" held the whip-hand and would boycott whoever made complaint against them.

On the 16th of this April I met the president and directors of the Japanese association and told them what they would have to do to comply with the law and showed them how they were hurting themselves by forcing such inferior berries on the market, and that I would be compelled to hold up all of the berries offered for sale and prosecute the owners, where the packing did not comply with the law.

After making this statement to the directors, I was assured by them that they appreciated what had been told them; that they were glad of the explanation and that they would notify every grower how the berries must be packed and that there would be no more cause for complaint, etc.

On the 17th and 18th on making an inspection of the berries throughout our markets, I found a decided improvement, and every berry dealer I visited praised our office for the great improvement made in so short a time. The inspected berries in our markets brought from two and one-half cents to five cents more per box than those not inspected.

On the 18th I went out with one of my inspectors to Gardena and Moneta where six cars were being loaded for eastern shipment and upon examination I found many of the berries in four of the cars would have been a disgrace to California if allowed to go east; so I told the growers they could either sort them over and pack them properly, or sell them to the canneries. They succeeded in doing the latter the second day after being held up, at five cents per box, or five cents less than the dealers were to have paid.

In justice to the association directors, I must say that they have tried to have the growers comply with the law. They did not do so and consequently had to lose an item of \$9270. This was much better than prosecuting a single case where the court might have fined the grower only a few dollars. I feel confident that this lesson will be a lasting one and cause the berry growers to take notice when warned by inspectors that the law must be obeyed.

In commenting upon this case Commissioner Hecke says: "Mr. Wood should be commended for the diplomacy and tact with which he has handled this very difficult situation. By no other means could it have been possible to bring home to the strawberry growers the need of complying with the state regulations in regard to this pack. It also furnishes an excellent example of the fact that the success or failure of a law lies largely in the way it is applied. Here Mr. Wood, without bringing a single case into court, has forced the strawberry growers to accept the state regulations and has apparently incurred no

enmity, in fact it would seem that the growers have been brought to realize the justice of the ordinances and the benefits which may be anticipated therefrom."

\*\*\*

Horticultural Commissioner Hecke, writing of the problems before county commissioners today says:

These are busy times for everyone. The county horticultural commissioners have a distinct service to perform and much is expected of them. Squirrel control, insect and disease control, weed control, inspection of nursery stock and plants, are all important and must not be neglected. In addition to these duties another important duty was added by the legislature of 1915, (the law being amended by the legislature of 1917), and that duty is the enforcement of the fresh fruit standardization law.

It is expected that the coming season will witness a decided shortage of cars for transporting our fruit crop to the markets. This makes it more necessary than ever before that every attention be given to standardizing the pack of our fruits. Nothing except the best fruit which conforms absolutely to the requirements of the standardization law should be packed, and inferior fruit of all kinds should be utilized in the manufacture of by-products.

Many of the county horticultural commissioners have been very active in the enforcement of the fresh fruit standardization law since its passage. Others have not yet begun this work but are no doubt intending to do so this season. The office of the state commissioner of horticulture is preparing a special form for taking notes on violations of the law; in the near future these forms will be mailed to the commissioners with the request that all violations detected be reported to this office. While the enforcement of the act is entrusted to the county horticultural commissioners, the state commissioner of horticulture and his chief deputy are ex-officio inspectors-in-chief of fresh fruits, and as such it is their duty to see to it that uniformity in the work is brought about throughout the state. Therefore, it is very important that each commissioner plan now to enforce the fresh fruit standardization law and it is also very important that we know of any violations of the law and are kept accurately informed throughout the packing season, regarding the progress of the work. The field deputies will be available for service in the various counties of the state, and whenever possible these officials will aid the county officials in the solution of their problems.

The standardization movement is one of the biggest movements in connection with the fruit business and



## Citrus Seed Bed Stock

Sour Orange Seed Bed Stock, strong, thrifty, one year plants 10 inches and up. Absolutely free of scale.

**Walker-Hubbard Nursery Co.**  
San Fernando, Cal. Office First National Bank Bldg.

## Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines

The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.

**Hydrometric Co.** 955 North Main St. Los Angeles Cal.



now is the time to plan for definite work in connection with the enforcement of the new act.

CROP REPORTS

J. F. Benton, Horticultural Commissioner, Humboldt County

Apricots damaged by frost, peaches light, cherries good, prunes fair.

N. E. Mathews, Santa Ana, Orange County

Apricots: Little or nothing on old trees. Young trees loaded but in the aggregate making much lighter crop than last year.

Fred P. Rouland, Horticultural Commissioner, Fresno County

Things have been so uncertain regarding crop production that I have hesitated to make a report. However, I am certain that we will not have a crop of peaches like that of last year. I believe peaches will be somewhere between a 65 and 75 per cent crop.

All other fruit in the county is looking immensely well at this time of the year. Grapes are setting well and everything points to a favorable crop.

A. L. Shively, Santa Paula, Ventura County

Apricots show about 60 per cent of normal crop. Young orchards generally will have good crop; some old trees scarcely anything.

Sheridan W. Baker, Santa Rosa, Sonoma County

Prunes, 75 per cent.

LOOKING OUT FOR BOLL WEEVIL

County Horticultural Commissioner Sharp of Riverside is making an active campaign against quarantine violators. Here is report of action on cotton seed importation taken from daily press:

Charging that George Cooper of Ontario is guilty of violating the California quarantine laws concerning the importation of cotton seed, Commissioner Sharp has caused a warrant to be issued for his arrest and announces that he will be prosecuted to the full extent of the law.

Cooper is specifically charged with failure to send to the state quarantine guardian in Riverside County a statement of the contents of a seed shipment and the name of the locality where it was grown.

Some weeks ago at Blythe, Mr. Sharp alleges that he seized a shipment of cotton seed sent from Ontario by George Cooper to J. D. Cooper. When examined, the seed was found to contain boll weevil and was ordered burned.

So flagrant a case resulted in a careful investigation, and the warrant for Mr. Cooper's arrest is the result.

BUREAU OF MARKETS

Continued from Page 611

authorized to make inspections and issue certificates as to the true condition of carloads of produce arriving on the market. These certificates are issued only at the request of the shippers or shippers' agent and are accepted in all courts as prima facie evidence as to the true condition in any cases where there is any dispute regarding this.

The local work of the Los Angeles office is in charge of H. H. Warner, while that at San Francisco is in charge of S. H. Boddington, whose office is in the Consular Building, San Francisco.

As may be noted on last market page of this issue, these offices are anxious to mail these daily market reports to everyone interested. At the present moment special reports are being issued on onions, and every large onion producer should secure these daily reports. A weekly report, giving more general review of the market, is issued every Tuesday afternoon.

WHY INDEED

War	Savings	Stamps
Will	Soon	Supply
Willing	Splendid	Service
With	Ships	Shoes
Weapons	Socks	Smokes
Why	Spend	Salary
Without	Securing	Some
War	Savings	Stamps?

The Spokane Interstate Fair dates are September 2-7.

Spray Now for the Melon Aphis

Due probably to the fact that it was not checked by cold weather during the past mild winter, the melon aphis has shown unusual activity this spring, and threatens to do considerable damage unless controlled. Although the aphis can be found on a number of trees and plants, the greatest damage will be to melons and cucumbers. These plants are all small now, many just coming up, and an infestation of the aphis at this time is likely to kill the plants outright. Although it may be possible that natural enemies and weather conditions will greatly reduce the number of aphis, it is extremely hazardous to wait and take such a chance. In order to be on the safe side, spraying should be resorted to immediately.

The following formula has been tested and is recommended by the department:

Nicotine sulphate, 40 per cent, six fluid ounces; whale oil or common laundry soap, two pounds; water, 50 gallons.

The tobacco solution (nicotine sulphate) should not be mixed with the soap until both have been somewhat diluted.

The aphis feed almost entirely on the under side of the leaves. Therefore an angle spray giving a fine mist spray should be used. The above insecticide kills by contact, hence spraying should be thorough enough to come in contact with every aphid, otherwise they will not be killed.

As the melon aphis will feed on many other plants and weeds, it is essential to the success of controlling this pest that all weeds in the melon field be cut before spraying and kept down afterward. Every weed makes

an additional breeding place for the aphids to spread to the melons or cucumbers. Weeds around the sides of the field should also be removed.

As there are now many winged aphids being produced, some of these may migrate to the melons after the latter have been sprayed, making it necessary to spray again a second or third time. The plants should be carefully watched to ascertain if this is necessary.

Any additional information can be gained by addressing the Truck Crop Insect Laboratory, 800 North Marguerita Ave., Alhambra.

PLANNING LARGE

The premium list of the 1918 Southern California Fair at Riverside, October 8-12, has just come from the press. A copy may be had by addressing Secretary R. L. Taber, Riverside. Premiums in all departments have been increased this year, especially in classes for livestock.

The superintendents of livestock will be: Horses, mules, F. L. Hall, Perris; cattle, sheep, Geo. W. Thomas, Alvord; swine, F. A. Langdon, Perris; goats, J. A. Packard, Riverside; poultry, E. I. Hammond, Riverside.

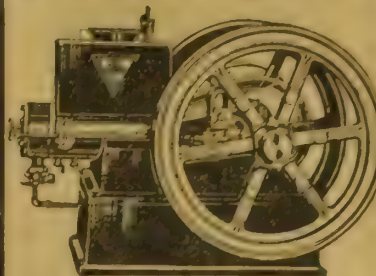
One strong feature of the live stock department will be the first annual Southern California Duroc-Jersey Futurity under the direction of the National Duroc-Jersey Record Association.

THE ORIGINAL CON MAN

"Is that plausible person pro-German?"

"I don't think he is as much 'pro' as he is 'con'."

ALPHA



Pumping Engines

1 1/2 to 28 H.P.

If your crop DEPENDS on the water you pump put a DEPENDABLE engine on the job. Buy an engine that will work as well five years hence, as the day you buy it. That's what you'll have if you buy an ALPHA. That's economy. The design, — the kind of materials used, — the accurate machine work, — the perfect balance, — insure low operating cost, long service and freedom from breakdowns.

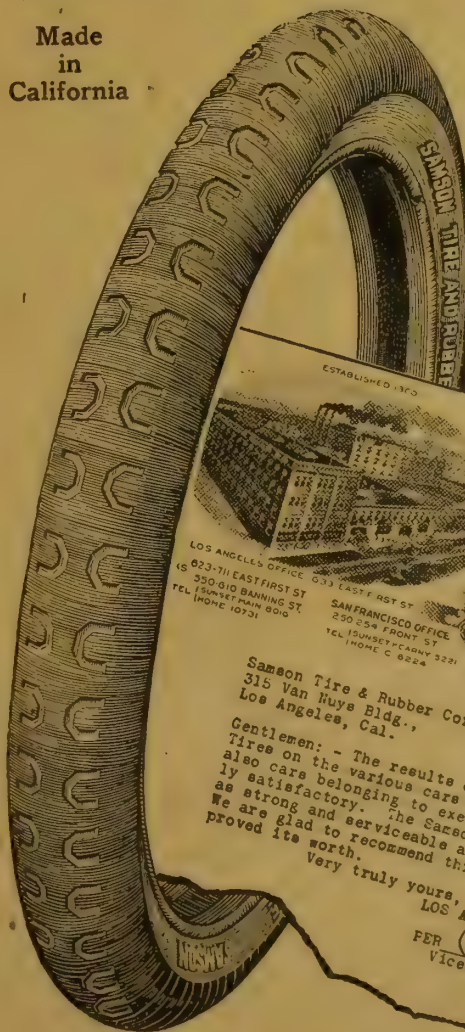
Details on Request

De Laval Dairy Supply Co.

61 Beale St., San Francisco

More evidence of Samson supremacy!

Made in California



Big institutions—concerns that demand the utmost in tire service—are frankly and enthusiastically endorsing Samson Tires. The Samson is gaining an ever-widening circle of friends because of its rugged, giant-like strength and its seeming imperviousness to terrific road punishment. After all, the life of a tire depends greatly upon the grade of materials used in its construction. No wonder Samson Tires live long! Better materials than those which go into these scientifically constructed casings do not exist.

Samson Tire and Rubber Corporation

315 Van Noy Building  
Los Angeles

ESTABLISHED 1900

LOS ANGELES SOAP CO.

RENEWABLE LINE OF FINE TOILET SOAP

LAUNDRY & TOILET SOAPS

Also Dealers in HIDES, PELTS & TALLOW

Los Angeles, Cal., April 29, 1918.

Gentlemen: — The results obtained from Samson Tires on the various cars of this company, and also cars belonging to executives, are eminently satisfactory. The Samson Tire evidently is as strong and serviceable as its name implies. We are glad to recommend this tire. It has proved its worth.

Very truly yours,

LOS ANGELES SOAP COMPANY

PER *W. H. H. H.*  
Vice-President & Secretary

**SAMSON TIRES**

**SAMSON TIRES**

**Dealers Attention!**

Our proposition to dealers is especially attractive. Write or call at Executive Offices, 315 Van Noy Building, Los Angeles.



# GARBAGE TANKAGE

9 Units Nitrogen  
7½ Units Phosphoric Acid  
3 Units Potash

All for \$60.00 f. o. b.  
Los Angeles

Write for Free Fertilizer Booklet C

**SOUTHERN CALIFORNIA  
FERTILIZER CO., INC.**

602-610 Kerckhoff Bldg.  
N. E. Cor. 6th and Main  
Los Angeles

## SULPHUR



Fleur de  
Soufre  
Anchor  
Brand  
Velvet  
Flowers of  
Sulphur and  
Eagle  
Brand.

Packed in barrels and double sacks are the purest and purest Sulphurs that money can buy; the best for vineyardists; the best for bleaching purposes. LEAVING NO ASH.

TRY OUR NEW BRAND OF VENTILATED SULPHUR. SUBLIMED 100 PER CENT PURE FOR DRY DUSTING. SEND FOR ILLUSTRATED BOOKLET. ALSO PRICE LIST AND SAMPLES.

SAN FRANCISCO SULPHUR CO.,  
624 California St., San Francisco, Cal.

## "THE BOSS" TREE PROTECTOR

Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

### Prices

	Per 1000
10 in. long, 7 in. wide....	\$10.00
12 in. long, 7 in. wide....	11.00
14 in. long, 7 in. wide....	12.00
16 in. long, 7 in. wide....	13.50
18 in. long, 7 in. wide....	15.00
24 in. long, 7 in. wide....	18.00
30 in. long, 7 in. wide....	21.00

**YUCCA MANUFACTURING CO.**  
1380 Willow Street, Los Angeles Cal.

## Fertilizer

Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

**Rogers Brown & Co.**

1307 Baker-Detwiler Building  
Los Angeles, Cal.

## RHUBARB

PLANT YOUR LAND NOW TO WINTER RHUBARB. You should get a crop by next fall. Others making \$1000 per acre, so can you with WAGNER'S GIANT—plant no other. Get your plants from originator and avoid disappointment. J. B. WAGNER, Rhubarb and Berry Specialist, PASADENA, CAL.

Better service is assured by the advertiser if when writing you mention the California Cultivator.

## The Soy Bean



THE soy bean is an erect, rather hairy, leguminous plant, resembling somewhat in its early growth the ordinary field or navy bean. It is a native of southeastern Asia and is grown extensively in China and Japan, being used for human food, for forage, and as a green manure. The high yield of seed, the nutritious forage, the ease of growing and harvesting, and the freedom from insect enemies and plant diseases should encourage the planting of this crop. One of its most common uses is for hay, which is comparable to alfalfa and red clover in feeding value. It is also valuable as a soiling crop, yielding from five to ten tons of green forage to the acre. Good results have been obtained where soy beans and corn are mixed as ensilage. The soy bean can be used to advantage for green manure, greatly increasing the supply of humus and nitrogen of the soil. For a greater variety and larger yield of forage it may be satisfactorily grown in combination with other crops, such as cowpeas, sorghum, corn, and Sudan grass. The use of the seed or meal as a substitute for cottonseed or oil meal in the feeding ration has given excellent results. Under ordinary conditions the best varieties yield from 20 to 30 bushels of seed to the acre. As a human food the soy bean may be used as a green vegetable (when the seed is about full grown), while the dried beans may be roasted as a substitute for coffee, in soups, or baked, and as flour or meal, the same as corn meal. In addition to their forage and food value, soy beans contain a valuable vegetable oil utilized in many trades. The cake remaining after the oil is expressed is a valuable food for all kinds of live stock.

The soil requirements are quite similar to those of corn. Rabbits are exceedingly fond of the young plants and sometimes cause serious injury where the plot is small, especially in the semi-arid regions.

### Inoculation

Soy beans, like other legumes, when well inoculated add much nitrogen to

the soil. In isolated localities where this crop has not been previously grown, some difficulty from lack of inoculation may be expected. The inoculation of a new field may be most certainly secured by applying soil from an old soy bean field, using from 300 to 500 pounds of soil to the acre or dusting the seed with some of this soil.

### Culture

The land should be thoroughly prepared before seeding. If the soil is low in fertility, phosphoric acid and potash should be applied to obtain the best results. Soy beans may be sown at any time after danger of severe frosts is over, ranging from early spring until midsummer. The general practice for seed production is planting in rows, 30 to 48 inches apart. For hay, soiling, or green manure, a drilled or broadcasted crop furnishes a finer quality of forage. In rows, from 20 to 30 pounds of seed to the acre are found satisfactory, and if broadcast or drilled, 60 to 90 pounds. The ordinary grain drill may be used in planting by covering the feed cups not in use, thus spacing the rows as desired. The cotton planter or corn planter may also be used. For small areas the ordinary garden drill does well. The planting should be shallow, not exceeding two inches in depth. As soon as the seedling plants appear above the ground cultivation should begin. Soy beans should receive at least three cultivations.

### Harvesting

The time of harvesting depends on the use to be made of the crop. Soy beans are best fitted for hay when the pods are well formed. When grown for grain alone, the cutting may be delayed in the case of most varieties until all of the leaves have fallen. The early varieties can best be harvested with a mowing machine or bean harvester. The later and taller growing varieties can be harvested satisfactorily with a self-rake reaper, a mowing machine, or a self binder, the last being the best for rather tall varieties.

## Rodent Control

California is going after the varmints. The state horticultural commission announces appointment of five field men who will conduct the fight in the five districts into which the state has been temporarily divided for battle operations. These field men will work with the county commissioners in their districts. They are: A. E. Gray of District No. 1 with headquarters in Forum Building, Sacramento; C. Olsen, District No. 2, Redding; Harley Ean, District No. 3, Santa Rosa; L. S. Neville, District No. 4, Visalia; A. H. Call, District No. 5, 324 Union League Building, Los Angeles.

The work of these men will be: Control of rodents on state lands, particularly the ground squirrel at this time, and the help and assistance

which they are to give the county horticultural commissioners. In conducting operations on state lands, local conditions will necessarily determine the methods to adopt. Crews will be organized, with suitable camps, (sanitation and other factors considered, mode of travel, distribution of poison, etc., being planned in advance of actual operation.

In helping the county horticultural commissioners, these men will attend meetings, those specially called by the horticultural commissioners, the farm bureaus or any other organizations assisting or desiring to assist in rodent control. They will assist in demonstrating the mixing and distribution of poisoned grain, will aid the individual rancher and above all will show no partiality to localities, men or commissioners.

## Farm-Wage Rates in 1917

Definite information concerning the great increase in the wages of farm labor last year has been provided by the United States department of agriculture in a recent publication. Wage rates per month in hiring by the month or season with board in 1917 ranged from \$21.88 in the South Central states to \$36.23 in the North Central states west of the Mississippi River and \$44.25 in the Western and Pacific, with a national average of \$28.87. Without board, the monthly rate for the United States was \$40.43, with a range from \$30.80 in the South Atlantic states to \$49.46 in the West North Central and \$63.59 in the Western and Pacific. Harvest wages with board were as high as \$2.77 per day in the West North Central states and as low as \$1.55 in the South Atlantic, while the United States average was \$2.08. The rates without board were 35 to 59 cents higher in the various sections.

Outside of harvest, day rates of wages with board ranged from \$1.17 in the South Atlantic states to \$1.91 in the North Atlantic and \$2.03 in the West North Central, and the United States average was \$1.56. Without board, the rates were 35 to 95 cents higher.

As a general average for the whole country, the increase in the rate of wages per month with board in 1917 over 1916 was 24.2 per cent. The increase over 1910 was 50.3 per cent. In the average rate of wages for harvest labor with board, the increase in 1917 over 1916 was 23.1 per cent; without board, 22.7 per cent. For day labor outside of harvest, farmers paid 23.8 per cent more with board and 24.7 per cent more without board. The general fact is that the rates of wages for farm labor increased almost one-quarter in one year and about two-fifths to one-half in seven years.

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# Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

## Pasturing or Cutting Alfalfa for Hogs

What is your opinion of the system of feeding hogs green alfalfa, cut daily, in their pens, instead of turning them out on the field? (Hog fencing is expensive, and hog's rings either do no good in wet ground after irrigating, or come off, thus the hogs ruin an alfalfa field in a short time.) — Subscriber, Coaldale, Nevada.

Certainly one can secure much greater return from the land by cutting and feeding the alfalfa. It is a case where one has to consider land prices and present labor prices. We will be glad to hear from hog feeders as to which method has been found the most economical.

## Thornless Blackberry

In a recent issue in this department the question was asked as to the success of the Thornless blackberry in interior and warmer valleys. A Tuolumne County subscriber, J. E. Meier, writes: "They will thrive in a hot climate. The berry originated near this place and I firmly believe it will do well under the most trying conditions." Mr. Cory, the producer of these vines, exhibited at the time of the tractor demonstration at Davis specimens showing immense growth, and he gives assurance that they will do exceptionally well under conditions such as exist in interior valleys.

## Dwarf Pears

Can you give me any data on the dwarf pear? What can it do under the best conditions and what will it yield per acre?—Subscriber, San Bernardino.

This question was referred to A. L. Wisker of Grass Valley who answers: Under the best of conditions dwarf pears will stand blight no better than standard pears, the difference in the two being wholly in the root. The dwarf pear is grown on quince root, which is far more susceptible to blight than the Japan pear seedling root now so generally used upon which to propagate standard pears. In point of comparative yield per acre, under the best of conditions standard pears will produce double the tonnage of fruit that would be produced on the dwarf trees. Some orchardists contend that the quality of some pears is improved when grown on dwarf roots, but the usual commercial varieties of high quality are probably not perceptibly improved when grown as dwarfs. It is doubtful if dwarf pears are justified under California conditions, unless it be for small home orchards or where soil conditions are unfavorable for trees propagated on pear roots. In extremely heavy soils with poor drainage, the dwarf root would sometimes be preferable.

## Testing Acid Soil

I have read with interest the article in your issue of the 13th on Lime and Gypsum. In testing soil from some spots that bother me the blue litmus remains blue and the red turns purple. One sample from spot that bakes and grows nothing turned completely dark purple, the other from spot with sandy subsoil only partly purple. Is this alkali? If so I suppose gypsum would be indicated for neutralizing.—Subscriber, Porterville.

The bluing of litmus paper may be due to black alkali, magnesium carbonate or calcium carbonate (lime), but

the difference may be determined in the following manner: After moistening three slips of red litmus paper place them in the moist soil a little apart and press the soil close to them. Examine one at one minute, at four minutes and at 20 minutes respectively. If there is no bluing at one minute no black alkali is present; if none at four minutes no magnesium carbonate is present; and if none in 20 minutes no lime carbonate is present. In the last named case supply a ton of finely ground lime carbonate or air-slaked lime per acre; if either black alkali or magnesium carbonate is present apply at least a ton of gypsum per acre. Upon the spot where nothing will grow apply gypsum at the more liberal rate of four tons per acre.—R. R. S.

## Fruit Fast

What is a fruit fast?—Subscriber, Rosamond.

As contradictory as it may seem, a fruit fast is abstaining from all foods

excepting fruits. This type of fast should be popular with California fruit growers.

## Bauhinia Purpurea

Send leaf and flower, the leaf having the peculiar habit of folding or closing at night, some leaves even remaining tightly closed all day. The flower is purple.—Subscriber, Los Angeles.

This is one of the leguminosae, Bauhinia purpurea. The name was given in honor of John and Caspar Bauhin because of the twin leaves suggesting two brothers. It is sometimes called mountain mahogany or orchid tree. It is a native of India and Southern China. The tree is small or medium size and gives a profusion of bloom at this season.

## BIG FAIRS THIS FALL

The favorable outlook for a successful 1918 California State Fair is made the basis in part for the statement issued by General Manager John C. Simpson of the Eastern States Exposition, Springfield, Massachusetts, that "altogether the big fairs and expositions of the country are alive to the possibilities before them this year."

"From coast to coast the feeling prevails that the coming fall will see

enough of an adjustment of railroad congestion to permit the satisfactory moving about of exhibits," says Simpson in a letter to Secretary Charles W. Paine of the California State Board of Agriculture.

"They are all, without exception, looking forward to a great realization of their purpose since fairs began, and they are all striving to render to the government the assistance they are so peculiarly fitted to give."


On Western fairs the report says: "Fairs in this section are bending every effort toward war work. Preparations are going ahead with greater interest than ever. No uneasiness over unusual conditions admitted."

## PUT BOND INTEREST INTO STAMPS

Don't take interest money from your government at this critical time if you can possibly avoid it. If the government owes you money, put it right back into other government securities.

Liberty loan interest will be due in May. It is not likely that you need this interest to live on. If you take it you will probably spend it for luxuries.

Lend this interest right back to your government by purchasing thrift and war savings stamps immediately. Buy the stamps right at the bank where you cash your coupons.



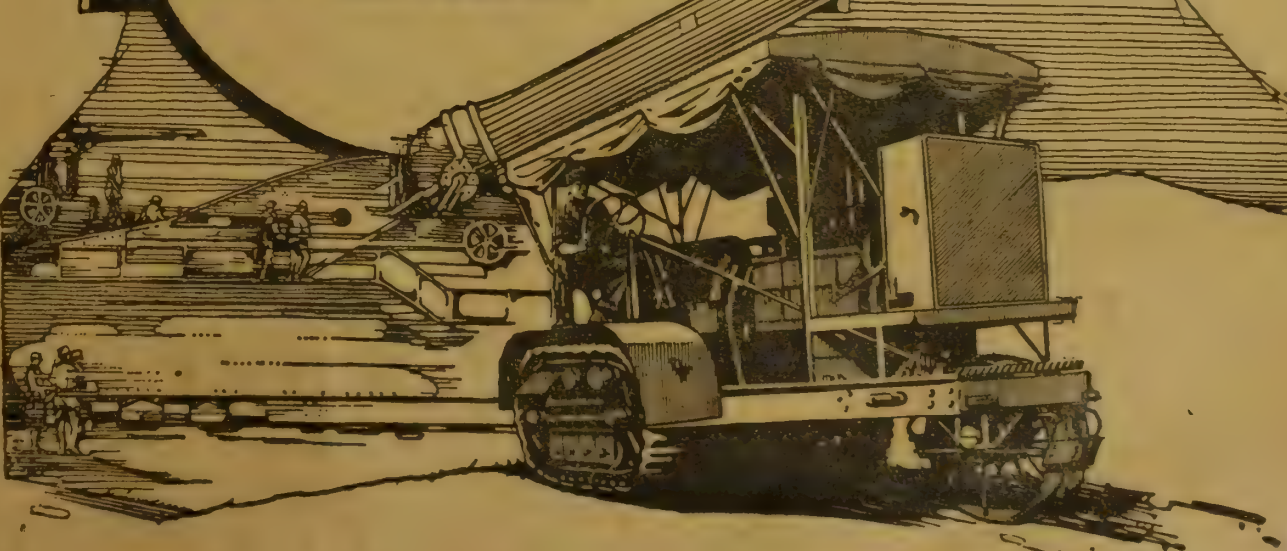
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 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established  
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Saturday, May 18, 1918

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 the debts of honest bankrupts. Notice  
 of complaint must be sent us within 30  
 days from date of the transaction, and  
 the subscribers must have mentioned the  
 Cultivator when writing the advertiser.

## THIS WEEK'S COVER

One practical step being taken  
 by our federal government to aid pro-  
 ducers is given some attention on the  
 third page of this number. The bureau  
 of markets is one of the newer activi-  
 ties of the department, and it is prov-  
 ing most helpful to every producer.  
 The branches just established on the  
 Pacific Coast under direction of Mr.  
 Schleussner will give to the producers  
 the information so long needed in or-  
 der to have intelligent grasp of mar-  
 keting conditions. The Cultivator will  
 be glad to aid in connecting producers  
 with the directors of these branches,  
 and daily reports will be sent to ev-  
 eryone who has products to market.

## LOWER TAXES

A Covina subscriber writes:  
 "In the last eight or nine years I  
 have watched the taxes and assess-  
 ments on lands around here raising  
 beans, potatoes, etc., go up from a  
 very light burden to \$15 and \$16 per  
 acre, almost full rental value with  
 water. The producing value in dol-  
 lars of the land has remained about  
 the same and its renting terms the  
 same. Eight or nine years more at  
 that rate will fix things. It looks to  
 me as if a farm paper ought to pro-  
 test once in a while but maybe I am  
 mistaken."

There was never quite so insistent  
 a demand for lessening expense and  
 never quite so insistent an inclination  
 to increase expense as at this mo-  
 ment. Our taxes have been no excep-  
 tion, and there are some lands on  
 which such valuation has been placed  
 that farming as generally known is  
 impossible if the taxes are to be paid  
 from the income from the land. Hence  
 only specialized and intensive farm-  
 ing will make great returns possible.  
 People having lands on which these

high valuations are placed can only  
 succeed by most careful planning.  
 However, we hope that the powers  
 that be, such as boards of equaliza-  
 tion, assessors and budget makers,  
 will have a heart in placing these  
 great burdens on the producers of the  
 country.

## MORE WHEAT

On April 1 the department  
 forecasted a production of about 560,-  
 000,000 bushels of winter wheat. On  
 May 1 conditions had improved so  
 that the forecast was raised to 572,-  
 000,000 bushels. Last year's forecast  
 on May 1 was 418,000,000 bushels,  
 while the average production for the  
 five years preceding was 553,000,000  
 bushels. The largest production re-  
 corded was in 1914, when 685,000,000  
 bushels were produced. The acreage  
 planted last autumn was 42,170,000,  
 and it is now estimated that 13.7 per  
 cent of this has been abandoned. This  
 leaves over 36,000,000 acres, as com-  
 pared with 27,000,000 last year.

If the country is given fair weather  
 conditions until harvest an immense

We who are not privileged to fight in arms for our country—the men  
 too old to fight, the women not called upon to fight, the children too  
 young to fight—we must have one watchword, one resolve, beyond all  
 others till our boys return to victory, and that is sacrifice and service.  
 Let that be the controlling impulse of our actions and thoughts, so that  
 our sons and brothers may not lack for anything which it is in our power  
 to give or procure, so that our country may not fail in anything within the  
 utmost limits of our means, to insure and hasten victory.—Otto H. Kahn.

production will aid in the present food  
 situation. The planting of spring  
 wheat has been immense, but the de-  
 partment announces, "A report on  
 spring wheat will not be made until  
 June."

## BOTULINUS

It now appears that botulinus  
 will never become quite so popular as  
 appendicitis. Last season at vegetable  
 canning time reports of ptomain and  
 various other types of poisoning from  
 eating of canned vegetables and fruits  
 were so frequent that the question as  
 to the safety of eating these home  
 canned foods was often brought up.  
 We may look at it now as a form of  
 German propaganda or simply a mild  
 case of strabismus. We are now re-  
 assured, however, in an article issued  
 by the University of California. A  
 ten minute cooking of contents of can  
 after opening gives assurance of  
 safety. Read the article on page 625,  
 then can more. In fact, as long as  
 vegetables or fruits grow during this  
 season, can all you can.

To the end that the season may be  
 as successful for us all as possible,  
 will not all who had experience last  
 year in canning and drying send some  
 hint which will aid in greater and  
 more economical food preservation.

## WANTED—HUNDRED MILLION

The president of the United  
 States has proclaimed the days from  
 May 20 to 25 inclusive as time of  
 sacrifice. This for the Red Cross, the  
 great constructive force of war. It is  
 only a few months since this organi-  
 zation asked for a hundred million dol-  
 lars. It was given by the American  
 people in measure pressed down and  
 running over. These millions carried  
 comfort, or at least lessened suffer-  
 ing, in almost every corner of the  
 world, but of course to the greatest  
 extent in war-torn Europe, but the  
 need has only increased. The cry for  
 help is louder, and the money is be-  
 ing poured out in increasing measure,  
 so the management turns to the peo-

ple who created the organization and  
 is saying: "You must help us to an-  
 swer the call." The president has  
 said:

"The people of the United States  
 will be called upon to give generously  
 to the continuation of the important  
 work of relieving distress, restoring  
 the waste of war and assisting in  
 maintaining the morale of our own  
 troops and the troops and peoples of  
 our Allies by this manifestation of  
 effort and sacrifice upon the part of  
 those who, though not privileged to  
 bear arms, are of one spirit, purpose,  
 and determination with our warriors.

"In witness whereof, I have here-  
 unto set my hand and caused the seal  
 of the United States to be affixed."

## MILLION A DAY

Foreigners who have come to  
 make America their home have not  
 all come by the way of Ellis Island.  
 Some who have come there have been  
 hard enough to assimilate; others  
 which have been imported on fruits  
 or trees or plants are giving poor re-  
 turn for the hospitality shown them.

Careful observers now estimate that  
 insect and fungous pests which have  
 been introduced through carelessness  
 of importer and federal and state  
 quarantine stations are now causing  
 a loss to growers of this country of  
 over one million dollars daily. Of  
 course some of this awful loss is  
 passed on to the consumer, but the  
 farmer is the more direct and the  
 first sufferer. The federal horticul-  
 tural board and, in fact, all the people  
 now appreciate the cost of American  
 indifference, and while every year has  
 witnessed the introduction of some  
 new pest, the board, the entire depart-  
 ment of agriculture and quarantine  
 officials of nearly all Atlantic and  
 Pacific states are resolving to keep  
 out the pests. The federal horticul-  
 tural board has the power to prohibit  
 importations from countries infested  
 with these pests; it should use this  
 power more freely than it has.

One of these pests, pine blister rust,  
 has proven so serious to orchardists  
 and all who love to see the native  
 forests preserved that a committee or  
 large organization for the "suppres-  
 sion of the pine blister rust in North  
 America" has been organized. We be-  
 lieve there is none of this pest this  
 side of the Mississippi. None the less  
 will the Coast unite with the well-  
 wishers of the country in the effort to  
 stamp out the plague and stiffen the  
 backbone of quarantine officials so  
 that all of our ports may be more  
 closely watched.

## This Week's War Notes

Second Red Cross drive for \$100,-  
 000,000 begins Monday morning.

The latest war measure is to substi-  
 tute a big baked potato for the bun  
 in hot dog sandwiches.

The kaiser has announced: "It is  
 assumed that Lithuania will 'partici-  
 pate' in the war burdens of Germany."

Nearly a quarter million Italian  
 troops have been brought to France  
 to aid in repelling the expected Hun  
 drive.

Sir Thomas Hughes, premier of  
 Australia, with many Australian offi-  
 cials, is in California on the way to  
 a war conference in London.

A war conference in which Cali-

fornia's part was discussed from every  
 angle was held in Los Angeles this  
 week. Governor Wm. D. Stephens  
 presided.

The past week has seen eight steel  
 steamships completed and put into  
 active service, total tonnage 48,150.  
 New launches aggregated 14 vessels  
 with tonnage of 57,100.

Rumors of Hindenburg's "death" are  
 not taken very seriously by the Allies.  
 However, the disappointment of Ger-  
 many at the failure of the great drive  
 is such that the rumors may indicate  
 his political condition.

Germany's demands on Russia are  
 increasing the Russians' burden until  
 the feeling of unrest is increased in  
 every section. In some portions re-  
 mainants of the Russian army have been  
 brought together and have given many  
 an uncomfortable hour to German  
 troops.

The decrease in the U-boat cam-  
 paign is more and more notable. It  
 is rumored that Germany will soon  
 appear with a new type of super-  
 submarine which will have a far  
 greater cruising range. Both Amer-  
 ican and English navies are also be-  
 coming more effective in submarine  
 control methods.

"Rumania shall indemnify all Ger-  
 mans for damage suffered by them in  
 Rumanian territory; also all German  
 share holders in any enterprise in  
 Rumania." "Rumania renounces all  
 claims for damages caused in Rumania  
 as a result of German military meas-  
 ures." Queen Marie has announced  
 that she will abdicate rather than  
 reign over her country under German  
 "peace" conditions.

The Italian troops made a success-  
 ful assault on Mount Corno, which  
 was followed by counter attacks by  
 the Austrians, but the Italians have  
 held their advantage. The Austrians  
 make occasional efforts to renew the  
 drive, but the efforts of Austria at  
 this time seem to be needed to correct  
 internal conditions. Bread riots are  
 occurring repeatedly, and greatest of  
 suffering is reported from all sections,  
 especially Hungary.

A Belgian army officer in America  
 has remarked: "Anyone who talks  
 peace this year is a traitor to America  
 and the cause of the Allies." "The  
 length of the war will be gauged by  
 the amount of bone and sinew the  
 American people put into it and the  
 speed with which they move." "Sev-  
 enty-five per cent of your so-called  
 slackers are no slackers — they are  
 simply too sluggish to comprehend the  
 enormity of the situation."

The German submarine base of  
 Ostend, Belgium, has been success-  
 fully blocked by the sinking of the  
 old cruiser Vindictive which had been  
 used so successfully in the attack  
 upon Zeebrugge a couple of weeks  
 before. It is known that great dam-  
 age was done to the port. It was  
 accomplished with the loss of only one  
 small motor boat and less than a  
 dozen casualties to the English troops.  
 A few days later English aircraft suc-  
 ceeded in sinking an immense dredger  
 alongside the wrecked Vindictive,  
 which it is thought will close the har-  
 bor entrance for some days.

American forces are now occupying  
 a more definite portion of the line in  
 France than at any preceding time.  
 However, the battle line has been ma-  
 terially changed under the generalship  
 of Foch. Formerly the Belgians, the  
 English, the Canadians, Australians  
 and French maintained practically  
 separate armies on different portions  
 of the battle line. Under the present  
 plan there is one great army from  
 the North Sea to Switzerland, and its  
 unity of purpose is shown in the fact  
 that reserves of French or American  
 or other troops may be thrown into  
 line to aid English, Canadian or Bel-  
 gians as the needs may require. The  
 artillery action has been almost in-  
 cessant, especially in front of Ypres  
 and Amiens, and the Allies have been  
 in daily expectation of renewal of the  
 Hun effort to advance. American fly-  
 ers are becoming more in evidence,  
 and the announcement is made that  
 the Allies are dominating in air ac-  
 tivities. The Allies' forces have ad-  
 vanced slightly at various points, and  
 the English advance on either side of  
 Kemmel Hill is threatening that  
 stronghold, which cost many thou-  
 sands of German lives to capture.



# Agricultural News Notes of the Pacific Coast

## Northern California

A Hundred Million for Red Cross.  
Napa County is conducting a silo campaign.

Madison, Yolo County, held its rice festival last Saturday.

The Pacific Coast Land and Industrial Exposition will open in Oakland, October 6.

Napa and Mendocino grape growers are organizing to attack the Shepard bone dry bill.

County Horticultural Commissioner Mills of Butte County reports a death list of \$50,000 squirrels.

Paradise, Butte County, has its reservoir filled and plenty of water assured for the coming season.

Colusa is to have a cheese factory which expects to make an initial production of about 500 pounds daily.

Butte County is arresting vagrants and those who will not work and is confining and feeding on bread and water.

Placer County has a committee working on articles of incorporation for the mutual fire insurance organization.

The board of supervisors of Yolo County has passed an ordinance establishing 17 fire stations in various grain growing sections.

A mass meeting of fruit growers was recently held at Auburn and a movement was launched to secure more unity of action as to standards of fruit packs.

Alameda County contemplates a cow testing association, in fact, is now organizing and has 600 cows signed up. Members anticipate the number will reach 1000.

Glenn County reports fruit conditions normal; wheat crop at least 95 per cent of normal; barley outlook fine. The wheat planting has been increased over 6000 acres.

Yolo Power and Water Company has permission from the state railway commission to discontinue immediate irrigation service of alfalfa fields and serve water to the rice fields.

Placer County farm bureau meetings: Long Valley, May 18; Gold Hill, 20; Colfax, 22; Mount Vernon, 25; Roseville, 27; Lincoln, 29. Sheridan held its rabbit drive on the 14th.

Camp Fremont near San Francisco is being rapidly filled to capacity by trainloads of recruits. When it reaches full military strength there will be 27,500 men quartered there.

Butte County cattle and sheepmen using stock ranges on the Plumas forest reserve recently assembled at Oroville and organized. Another meeting will be held this week on Saturday.

California Swine Breeders' Association holds its annual meeting at Davis, Thursday and Friday of this week. An interesting feature is the hog feeding demonstration conducted by C. M. Vestal.

Sacramento Valley prune growers are hoping that the coming crop may be sold around the six and three-quarter cent basis. Meeting recently held at Chico was attended by 125 prune growers.

Vacaville's first cherries were shipped April 22, exactly the same date as 1917's first shipment. Yuba City made its first shipment April 21; Sacramento County, its first, April 23; Loomis, Placer County, April 22.

## Central California

A Hundred Million for Red Cross.  
Ceres, Stanislaus County, maintains it is now the "center of fig culture."

Turlock district has a dredger operating to establish a drainage system.

Terra Bella, Tulare County, estimates she will ship 200 tons of peaches and apricots.

Farm Adviser Jungerman of Stanislaus is advising the planting of honey sorghum for ensilage.

Nearly 30,000 acres of wheat on the west side of the San Joaquin Valley have been irrigated.

Stanislaus County farm bureau recently met and discussed regulation of prices of cereals other than wheat.

The Kearny properties of the University of California have been used to plant to Egyptian long staple cotton.

Owing to warm weather on the snows of the Sierra the Kings River is now running nearly 3000 second-feet.

Fresno's Raisin Day took on more of the military than any of the previous observations. It was the greatest ever.

A private reservoir on a ranch near Newman, was destroyed by the use of dynamite. It is thought to have been done as a pro-German act.

Oakdale irrigation board has ruled that water will not be delivered to lines where headgates and ditches are not in shape to handle water.

Irrigators under the Delmas ditch have secured a writ of mandamus against Turlock irrigation district compelling it to furnish water.

Dinuba is planning for a summer camp under the management of the Y. M. C. A. which will supply laborers for fruit harvesting and curing.

Kings County farm bureau is discussing the labor question and has recommended the closing of non-essential business houses such as saloons, pool halls, etc.

Women of Stanford University are organizing units to aid in the labor shortage which will prevail in the fruit handling of Santa Clara Valley orchards during July and August.

The San Joaquin Light and Power Company has appealed for "permission to increase its rates so that the company may earn eight per cent on its investment." "Daylight saving has reduced its revenue \$50,000."

The Valley Fruit Growers' Association has passed resolutions petitioning Governor Stephens to close all saloons during the period of the war. Wylie Giffen of the association stated that saloons lowered efficiency of transient labor at least 33 1-3 per cent.

The peach growers who had contracted during 1914-15 to deliver canning peaches for a period of years and who made appeal to canners for revision of contract, have secured concessions which will amount to from \$10 to \$12.50 per ton above contract prices.

A canvass of the food producing situation of the Turlock irrigation district indicates there will be grown this year 101,235 acres on irrigated land, while of this over 20,000 acres will be used for second crop. In addition there will be nearly 19,000 acres of food crops grown on non-irrigated land.

## Southern California

A Hundred Million for Red Cross.  
El Cajon, San Diego County, is now assured of a cannery.

Coachella Valley is discussing cotton and peanut growing.

Imperial County growers are making tests of castor bean plantings.

A cooperative cannery is being organized at Fallbrook, San Diego County.

La Habra farm center, Orange County, is holding citrus pruning demonstrations.

An effort is being made to include the east side mesa district in the Imperial irrigation district.

Effort is being made to organize the Southern California division of the National Defense League.

Several citrus growers are making practical test of the use of summer cover crops to prevent June drop.

Cattlemen of Imperial Valley have organized to protect grain fields from being fired by traitors and slackers.

A. L. Paschall has resigned as county farm adviser of Riverside and has been succeeded by R. N. Wilson.

Pomona, Los Angeles County, is making a pull for a sorghum mill and has nearly sufficient acreage pledged.

County Horticultural Commissioner Waite of Imperial is planning a thorough standardization of the cantaloupe crop.

Yucaipa Apple Growers' Association has purchased its entire supply of apple box shooks for next season's pack.

A violator of the state quarantine law at Ontario has been fined \$100 for shipping cotton seed infested with boll weevil into Palo Verde Valley.

Sonora wheat has done exceptionally well in Imperial Valley. One grower has 160 acres which it is estimated will produce 60 bushels per acre.

The last meeting of the season of the Claremont Pomological Club will be held at the home of its secretary, V. V. Leroy, in Los Angeles, Saturday, May 25.

R. S. Vaile, formerly connected with the citrus experiment station, has gone in the interests of the Armenian and Syrian Relief to aid in the agricultural development of Northern Persia.

Members of various citrus associations are uniting in the establishing of marmalade and jelly factories, which will handle low-grade and cull fruits in the manufacture of high-grade products.

Growers of Mecca, Riverside County, have organized and will operate a general merchandise store, maintain packing shed and buy and sell for the benefit of members. Single membership costs \$100.

Prof. Mason and Bruce Drummond are enthusiastic believers in the date industry of the Coachella Valley. They recently gave a demonstration of methods of removing offshoots from the parent palm.

Imperial County's cantaloupe crop covers about 10,896 acres as compared with 12,939 acres last year. Reports from the valley indicate an exceptionally fine yield and early shipments. It is anticipated this will be the first week for carlots or not later than the 20th will see first shipment.

## The Coast and General

A Hundred Million for Red Cross.  
The shah of Persia takes \$100,000 in liberty loan.

Washington County, Idaho, is forming a farm bureau.

The 1918 Canary Island onion seed crop will be materially reduced this year.

Benton County, Washington, stockmen have organized a protective association.

The war department recently ordered 5,500,000 pairs of shoes costing \$7.75 per pair.

It is reported that Washington contemplates a reduction in the prices of flour and flour substitutes.

The condensed milk industry is becoming a great factor in the commercial life of South Africa.

An experiment station in Brazil reports the cotton plant as one of the best honey yielders of that section.

A \$250,000 corporation has been formed at Chicago to maintain freight truck service between that city and New York.

The shipping board has announced the launching of a steel 88,000 ton cargo steamship 55 days from the laying of the keel.

High priced feeds have convinced some Arizona farmers that they can better afford to dispose of stock and sell feed direct.

Michigan and New Hampshire are the latest states to enter the prohibition lines in favor of the constitutional amendment.

The government reports a total tonnage of nearly a quarter of a million as the ship building record for April. It is now averaging over a 9000 ton vessel daily.

Over \$60,000,000 worth of engines and freight cars have been ordered by the administration. The order will be distributed between different factories over the country.

Sub-soiling by using dynamite is popular in New Zealand, and we note by commerce reports that "the best dynamite cartridges for this purpose are obtained in the United States."

Whitman County, Washington, has a fully organized farm bureau, and T. L. Kennard was recently appointed county farm agent. Other counties now fully organized with county agents are Chelan and Adams.

Commercial organizations of the South have determined that "The South must feed herself." In other words, cotton must give way to an extent and dairying and other food producing industries be installed.

Congress has enacted; "That it be unlawful to capture, kill, etc. or detain a homing pigeon wearing a band owned and issued by U. S. A. One hundred dollar fine and six months imprisonment may be the punishment.

The Okanogan County, Washington, Stockmen's Association is working for a state enactment providing "that all stray stock be advertised as estrays with full and complete details as to color, age, sex and distinctive marks."

The Manchurian Produce Exchange is endeavoring to secure a standard of oil percentage on soy beans. Mills maintain they are able to secure an average of only about 12 per cent of oil, while some beans show a 20 per cent content.





## The Heart of The Milking Machine

**THE** pulsator is the heart of any milking machine. It controls and regulates the action of the teat cups on the cow's teats.

A man with a weak heart would not be accepted for military service. You should not accept any milking machine with a weak heart. The Perfection has the heart of an athlete. His heart beats are strong and steady. He can stand lots of work and thrives on it. The Perfection pulsator is simply a piston working back and forth in a brass cylinder, no cog wheels, weights, levers or "clock work." It does not easily get out of order, and with ordinary care it should outlive any other piece of machinery on the farm. The Perfection milks as the calf does, with a gentle suction, a downward squeeze, followed by a period of complete release. The pulsator can be instantly adjusted to suit either a hard or easy milking cow. This point is a very

important one. Not all cows milk alike and the Perfection recognizes this fact.

The action of the Perfection on the cow's teats, which is nature's way, and the possibility of adjusting the machine to suit different cows are two of the many points in which the Perfection excels all other milking machines.

Newman Bros., Elk Grove, Cal., write:

"As you know we produce certified milk and would not be allowed to use any machine that would injure a cow's teats or udder or adversely effect the bacteria count. We have milked entirely by machine for about two years with perfect satisfaction to all concerned, including the cows. One man with ordinary intelligence is doing with the machine what it required three men to do in the old way. We would convict ourselves of being either philanthropists or fools were we to go back to the old way. We are familiar with most makes of milking machines and have tried out several of them. The Perfection is superior in several respects. First: Both suction and squeeze can be changed instantly and adjusted to the individual cow. This is a mighty good thing, as any milker ought to know. Second: The Perfection will milk more cows in a given length of time. Third: The Perfection pulsator is more simple; has fewer wearing parts and is easier to adjust. Fourth: The teat cup rubbers last much longer than on one other machine which we tried. I cannot understand the dairyman, who modern in every respect, will go on milking by hand when he could cut expenses and make dairying more attractive, to say nothing of sanitation, by using a Perfection Milking Machine. When we need more milking machines, the order is yours."

Write for free illustrated catalog. It contains valuable information.

**Perfection Manufacturing Company**

2113 East Hennepin Ave.

Minneapolis, Minn.

# PERFECTION MILKER



## Elliott-Brant Rancho Guernseys

We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.

We have calves from A. R. cows with different sized records up to 750 pounds of butter fat. Our prices are reasonable and are based on breeding and records. Write and tell us your needs and we will tell you how we can fill them.

**Elliott-Brant Rancho - Owensmouth, Cal.**

**D. O. Brant, Mgr.**

We are selling a hog that a farmer will want to buy at a price a farmer can afford to pay.

Write for illustrated booklet telling about our Berkshire herd and

**Star Leader**



## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. F. I. E.

513 Hearst Building  
San Francisco

CARRUTHERS FARMS  
Mayfield, Cal.

## Holstein Auction Sale at Modesto

Written for California Cultivator By C. A. Briggs



**H**OLSTEIN breeders of the north San Joaquin district held their first consignment sale on May 9 at Modesto.

Thirty-four head were sold for \$12,475, an average price of \$375. The stock sold was mainly mature females of a very high grade quality; bidding was brisk and sales made to almost an entire set of new buyers. The most notable feature of the sale was that the cattle were sold almost without exception to practical dairymen who paid handsome prices for their choice. Every recent sale shows marked progress along this line but the tendency was more evident at this sale than at any previous one. This result is without doubt largely due to the broad minded, wide spread campaign of advertising and educational work of the California Breeders' Sales and Pedigree Company who conducted the sale. Their policy of conducting absolutely clean sales, standing back of the cattle sold, that every cow must be free from contagious disease and a breeder or money back has inspired the dairymen with confidence, and they now show their faith in these methods by buying good animals at prices that a few years ago they would not have thought of paying.

The day was a good one, sale well managed, prices satisfactory to both buyers and sellers. The greatest number (five) was bought by Wm. Lehfeldt of Livingston. The top notcher, Senorita Ceres Mechthilde, consigned by R. L. Holmes of Modesto, was knocked off to H. H. Wallis of Crows Landing for \$605.

Col. Cy Clark of Modesto acted as auctioneer, Charles E. Hughes as sales manager. Consignors and buyers as follows:

J. W. Benoit, Modesto: Koroba Electa, Koopman Dairy Company, Pleasanton, \$500; Electa Pontiac Koroba, C. H. Hull, Atwater, \$540; Venteta Electa Netherland, M. R. Moody, Modesto, \$400; Venetta Electa Netherland, Koopman Dairy Company, Pleasanton, \$450; Elfreda

Estrata, M. R. Moody, \$475; Modesto Zenobia 3rd, Wm. Lehfeldt, Livingston, \$560; Melba Zenobia Pontiac, H. E. Cornwell, Modesto, \$300; Azalea Zenobia, C. H. Hull, \$400; Pauline Hermana, Koopman Dairy Company, \$275; Esmeralda Electa Pontiac, W. Batterbury, Crows Landing, \$470; Zella Hermana Pontiac, R. C. Sturgeon, Tulare; Princess Pontiac Ruby Burke, W. Batterbury, \$450; Salambo Pietertje, P. Brunold, Modesto, \$340; Clover Lad Wayne Colantha, E. Thorkelson, Patterson, \$140.

J. A. Pelanda, Modesto: Squaw Queen De Kol 2nd, C. A. Miller, Ripon, \$350; Lassie Delmar Pauline De Kol 2d, R. C. Sturgeon, \$485; Brinka Hengerveld of Pelandale, R. C. Sturgeon, \$300.

R. L. Holmes, Modesto: Holland Aaggie Belle Colantha 2nd, R. C. Sturgeon, \$530; Senorita Ceres Mechthilde, H. H. Wallis, Crows Landing \$605.

H. E. Cornwell, Modesto: Lady Holland 3rd, R. C. Sturgeon, \$430.

Gotschall & Magruder, Ripon: Vee-man Hengerveld Pride 3rd, Wm. Lehfeldt, \$450; Urana of Linwood, F. E. Hess, Lindsay, \$475; Stratford Juliana Maid, D. Salfeld, Stockton, \$335; Pauline Clothilde Pondyke De Kol, Wm. Lehfeldt, \$410; Netherland Lily De Kol, S. Boren, Modesto, \$375; Moorland Romeana De Kol, Wm. Lehfeldt, \$300; Baby De Kol Pietertje, W. L. Choisser, Riverdale, \$210; Arabella of Linwood, R. T. Brooks, Merced, \$375; Alma Goldstone Fidesa, Mrs. O. E. Warnock, Modesto, \$555; Aaltje Vale Cornucopia, A. M. Bibens, Modesto, \$230; Karlray Fobes Juliana A. M. Bibens, \$255; Prince Pontiac Jose Karlray, Wm. Bond, Newark, \$165; K. P. O. S. Pondyke Karlray, Z. J. Funk, Ripon, \$100; Moorland Colantha Primrose, R. E. McCracken, Ripon, \$170.

Consignors' averages were all over \$300. J. W. Benoit, 14 head, \$402; Gotschall & Magruder, 14 head, \$314; J. A. Pelanda, three head, \$378; R. L. Holmes, two head, \$567; H. E. Cornwell, one head, \$430.

## Destroy Cattle Lice



**C**ATTLE lice are injurious to all classes of cattle, but the greatest losses occur in young stock and poorly nourished old animals. Losses are caused by irritation, digestive disturbances, arrested growth, low vitality, and increased death rate. The methods of preventing these losses and ridding the cattle of lice are described in Farmers' Bulletin 909, "Cattle Lice and How to Eradicate Them," recently published by the United States department of agriculture.

Ordinarily lice on cattle are not observed until they become so numerous that they cause unmistakable signs of annoyance. Usually the animals whose lousy condition first attracts attention are the poor, weak, unthrifty members of the herd, and frequently the owner thinks they are lousy because they are unthrifty,

whereas the unthrifty condition may be caused by the lice.

**Can Not Thrive**

Three kinds of lice are commonly found on cattle, and all three species may be present at the same time, but the same method of treatment may be used for any of them. When they make their appearance on the cattle during the fall or winter they usually spread rapidly until every animal is infested. When a herd is grossly infested it is not uncommon to see some animals with large areas of skin partly denuded of hair, and limited areas bruised and raw from rubbing against posts and other objects. Cattle in this condition will not thrive or gain weight normally, and during winter often remain stunted until the old coat of hair is shed in the spring, at which time most of the lice disappear. Hand applications, spraying, and dip-



Feeding Sheds

View of Feeding Sheds on University Farm at Davis. This shows open side with driveway. Hay or roughage may be unloaded direct from wagon without driving into corral, a great number of which on opposite side of this shed permit stock to feed at their own pleasure.





## SANTA ANITA RANCHO

Anoakia Breeding Farm

### Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

### Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

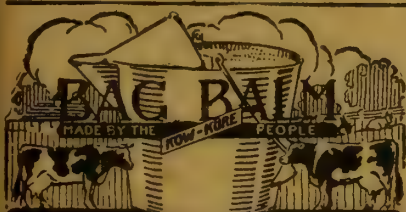
### Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita Calif.  
W. H. Taylor, Supt.



### Easy Milking and a Full Pail

are the natural result of a healthy udder. When a cow freshens, her udder should be given careful attention. Caked Bag, so likely to occur then, is quickly removed by applying Bag Balm, the great healing ointment. Sores, cuts, chaps, bruises, cracks, bunches and inflammation quickly respond to its healing, penetrating effect. Try Bag Balm and you will never be without it.

Sold by feed dealers and druggists, in large 50c packages. Send for booklet, "Dairy Wrinkles," DAIRY ASSOCIATION CO., Lyndenville, Vt.

## ROSAMAINES HOLSTEINS



King Pontiac Netherland Segis 3rd  
CHOICE BREEDING STOCK FOR SALE  
A. R. O. Records up to 34 lbs. Butter in 7 Days  
ROSAMAINES RANCHO  
Stalder Bros. RIVERSIDE, CAL.

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

### Whittier State School

WHITTIER, CALIFORNIA

## Holstein Bulls

SIR PIETERTJE ORMSBY CANARY heads the herd. He is by Sir Pietertje Ormsby Merceles and out of a dam that made 862.88 pounds butter in one year as a three year old, and she in turn out of a 1009.87 pound cow. His three nearest dams average 19,496.7 pounds milk and 877.29 pounds butter in one year. A few of his sons for sale.

The McCloud River  
Lumber Company  
McCloud, California

## HOLSTEINS

32 Females

Herd Sire Juliana De Kol King Segis  
Grand Champion Kings County Fair  
CHOICE BULLS FOR SALE  
A. B. COMFORT - Guernsey, Cal.

ping with insecticides are the methods which the bulletin recommends as remedies. In southern latitudes where the winters are mild cattle may be dipped during the winter months without injury from cold weather, but in the northern sections winters are usually too cold for dipping or spraying. All animals in the herd should be treated regardless of the number showing infestation, and the treatment should be repeated in 15 to 16 days.

### Homemade Remedies

Hand applications are practical only when a few animals are to be treated, but are especially valuable in holding the parasites in check during weather too cold for dipping or spraying. Some dusting powders obtainable on the market are good when this method is used. The following homemade liquid remedies are also effective: Equal parts cottonseed oil and kerosene, or kerosene and lard mixed in the proportion of one-half pint kerosene to one pound of lard or crude petroleum. Apply these remedies with a brush or cloth, covering the entire body, being particularly careful about the head and ears. For spraying and dipping arsenical dips, coal-tar creosote dips, and nicotine solutions are recommended. They may be applied with a hand sprayer, but the most effective method, the bulletin states, is to provide a dipping vat and completely dip the cattle two or, in some cases, three times. Complete directions for making and using a dipping vat are outlined in the bulletin referred to, which may be obtained, so long as the supply lasts, by applying to the Department of Agriculture, Washington, D. C.

### HOLSTEIN-FRIESIAN ANNUAL

The thirty-third annual meeting of the Holstein-Friesian Association of America will be held at Milwaukee, Wisconsin, June 5.

Several amendments to the constitution are proposed and officers will be elected. Present officers are: President, Hon. D. D. Aitken, Flint, Michigan; vice-president, G. Watson French, Davenport, Iowa; secretary, Frederick L. Houghton, Brattleboro, Vermont; treasurer, Wing R. Smith, Syracuse, New York; superintendent of advanced registry, Malcolm H. Gardner, Delavan, Wisconsin.

### DAIRY CATTLE CONGRESS

The ninth annual Dairy Cattle Congress will be held September 30 to October 6, 1918 in its permanent home at Waterloo, Iowa. This is the great yearly event of the dairy industry in the Middle Western states.

The industrial world is facing gigantic problems different from any it has solved heretofore. These problems necessitate greater activity, more strenuous effort and the necessity for greater achievement. People are asked to conserve all possible lines and at the same time increase production. Events such as the Dairy Cattle Congress are for the purpose of encouraging both conservation and production and have not only the sanction but the hearty recommendation of the government.

The economy which makes one horse a dollar rather than to put that dollar to work where it will multiply many times is ridiculous business judgment. It is not conservation, it is not loyal business policy and the men who come to the Dairy Cattle Congress year after year are not the type who follow such practices.

From the standpoint of the visitor, the Cattle Congress is of twofold importance. In the first place, it brings him face to face with the latest achievements along manufacturing lines. It shows him what the manufacturing world offers in the way of labor saving machinery, and those conveniences which are fast taking the drudgery out of every phase of farming.

Further than this, one of the most difficult problems the farmer is called upon to solve today, is that of help. How is he going to get his work done with labor conditions as they are? He cannot do more himself, yet the incessant call is for more production along every line. How is he going to meet it? The answer is, labor saving machinery, and here is where he may put himself on the latest things along these lines.

In the second place, the programs

## Ormsby Segis Marie 223321



Sire: Sir Ormsby Burke Segis 51506. A son of King Segis.  
Dam: Marie Midnight Queen 105116, 21.84 pounds butter in seven days, 18,736.2 pounds milk, 774.17 pounds butter in one year.  
Her record at three years six months:  
Milk seven days .... 640.3  
Butter seven days .... 26.83  
365 days semi-official:  
Milk ..... 27,186.8  
(World's record in class)  
Butter ..... 1,089.6  
(Second highest in class)

### SHE IS A GREAT HEIFER

and would be an attraction in any sale in the world, and her presence would improve any breeding herd in the world, but she is still only one of many outstanding individuals and groups that will feature the dispersal of

## La Conner Flats Stock Farm Holsteins 90 REGISTERED COWS, HEIFERS AND BULLS

Owned by J. H. Hulbert Jr.

### Mount Vernon, Washington, Saturday, May 25, 1918

Besides Ormsby Segis Marie, who is a show individual of very great merit in addition to her world's record as a producer there will be FORTY-TWO DAUGHTERS OF SEGIS PONTIAC ACME, including all of his prize winning daughters. Five of them are now fresh as two year olds and have 15, 18, 20, and 23.9 pounds butter to their credit in seven days, the fifth one just now starting on test.

FORTY-SIX DAUGHTERS OF A. R. O. COWS, 32 of them out of dams with records above 20 pounds butter in seven days.

FORTY SPLENDID FEMALES bred to four great yearly record bulls, three of the bulls being out of dams with records from 1025 to 1214 pounds butter in one year, while the fourth is the proven sire Segis Pontiac Acme.

TWENTY A. R. O. COWS AND HEIFERS with records up to over 30 pounds butter in seven days.

LACONNER PONTIAC SEGIS, yearling son of Ormsby Segis Marie and Segis Pontiac Acme. A beautiful individual, dark in color, already bred to some good ones, ready for fairly heavy service, and fit to head a real breeding herd.

Herd is under Federal test for tuberculosis, and will be sold under Federal certificate, and SUBJECT TO 60 DAY RETEST BY THE BUYER. Every animal pledged to absolute sale and positively guaranteed to be a breeder under the sales rules of this company.

CATALOG FREE ON REQUEST.

Management of

## California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President C. L. Hughes, Sales Manager  
Sacramento, California.

Auctioneer—Col. Ben A. Rhoades, Los Angeles.

## Remarkable Records! What Do You Think!

### In One Season

## 80% above 30 lb. Records

Eight 30 lb., 7 day butter records, from 10 cows tested this season. Records 32.70 lb. from 30.41 lb. to 37.50 lb., average for eight cows

In one season 88% of 2 yr. olds tested, made above 21 lb. butter 7 days.

Eight from 21.02 lb. to 26.51 lb. butter seven days. Average for eight heifers 23.86 lb. at average age of 2 years, 2 months. All first calf heifers.

We offer for sale at reasonable prices these young bulls by our herd sire "King Segis Alcartra Abbekerk," sire of the \$50,000 bull "King Segis Pontiac Alcartra." Dam 30 pound daughter of the great sire "Tidy Abbekerk Prince," who has nine 30 pound daughters, her record made at second calving.

No. 1—"Segis Abbekerk Alcartra Pontiac"—Born October 3, 1917. Fine individual seven-eighths white. Dam 25 pound daughter "Spring Farm King Pontiac," one of the best sires of "King of the Pontiacs." The nine first dams of this calf average 30.55 pounds butter in seven days.

No. 2—"Segis Abbekerk of Riverside"—Born July 30, 1917. Nicely marked, two-thirds black. Dam's record seven days 25.01 pounds butter, one year 814 pounds butter, 18,362 pounds milk. First ten dams of this young bull average 28.50 pounds butter seven days.

We also offer several younger bulls from 30 pound dams of high class breeding.

Write for particulars, photos and prices.

## Bridgford Company

Knightsen Contra Costa County California

### MONTELENA HERD

## Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

### A. L. TUBBS CO.

Callistoga - California



Raising the Standard of California Bacon





**Save Money  
by repairing  
Your buildings  
Now with**

**Pioneer  
Roofing**



Barns, chicken houses, silos and other buildings will deteriorate quickly unless the roof is in good condition. A little money spent on the roof now—will save you money in the long run.

Pioneer Roofing wears like iron—always looks good—is economical—easy to apply.

Ask Your Dealer  
—or write us for samples.

**Pioneer Paper Co.**

Manufacturers

Los Angeles

## WEST COAST GAS ENGINE

MADE IN CALIFORNIA



**We Specialize in  
Complete  
Pumping Plants**

One of the largest Railway companies as well as one of the largest Oil companies in the West have been using our pumping plants for the past 16 years and are still buying them. Also we can refer to a large number of Satisfied Farmers and Ranchers who have tried to their satisfaction West Coast pumping plants.

Write us regarding your engine pump requirements. No fee charged for estimates.

**The West Coast Gas Engine Company**

420 East Third Street, Los Angeles 76 Fremont Street, San Francisco  
Factory: Union and Market Streets, San Diego



California Wonder

## KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets.

Jacks and Jennets for sale at all times. Come and see them.

**John Burrell**

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which form a most important feature of the Cattle Congress, bring together the best authorities on subjects that are of vital importance to the men who believe in keeping thoroughly posted and up-to-date in their business. Dairying is a business just as much as merchandising or manufacturing. It is one of the most important lines of activity in touch with hu-

man life. This has been brought out with decided emphasis during the recent investigations that have been made along the lines of the foods that are best adapted to the nourishment of the human race.

These are a few of the reasons why the Dairy Cattle Congress is always an event of extreme significance, and why it is of more importance this year than ever before.

## University Farm Produces World Record Breaking Goat



NEW and unusual distinction has come to the University of California in the field of stock raising. "California Gretel," purebred Toggenburg, has broken the world's record for milk production in goats. She has given in 365 consecutive days 2941.5 pounds of milk and 97.41 pounds of butter fat. This amount of milk would furnish a family with 3.8 quarts of

milk in ten months, and her grandmother, "El Chivar's Geneva," gave over 2100 pounds in ten months and was the grand champion Toggenburg doe at the Panama Pacific Exposition in 1915. Her pedigree traces in almost every line back to the handsome imported buck, "Prince Bismark."

Goats are gentle and affectionate and soon become family pets. They are extremely intelligent, as much so



California Gretel

The upper picture of California Gretel, the wonderful Toggenburg goat whose great production of milk has surprised the world, was taken with the Cultivator camera on Farm Picnic Day. One of the first of the university staff whom we met was Prof. Gordon H. True who has used of his energies and of his knowledge of live stock to add much to the credit of California. He took California Favorite and Jock to the International, 1916, and surprised the world, even including California. But that is a long story. As soon as we saw Prof. True he wanted to show us this little wonder milk producer. Note the look of intelligent interest on the face of the little animal as she listens to Prof. True's instructions to look her prettiest. Yesterday we received from the university the lower picture. It was rushed to the engraver with instructions to have ready for this week. Count those milk cans and compare them with the size of the little animal—34 cans with a capacity for holding 2,941.5 pounds of milk. When it comes to making up the record of war activities we think California Gretel can say; "I done my best."

milk a day throughout the year. If the fat in the milk were churned into butter, it would make 120 pounds of butter, or enough to supply the needs of a family for a year. If this milk were made into Neufchatel cheese, it would make over 450 pounds of cheese, or over a pound of wholesome cheese per day throughout the year. This cheese, retailed at 30 cents per pound, would be worth \$135. This goat's milk, retailed to infant hospitals at 25 cents per quart, would be worth \$350.

This goat had an average weight of only 120 pounds and the milk she gave during the year would be about 24½ times her body weight, which excels the record of the best Holstein cow.

"California Gretel" comes from royal blood. Her mother, "El Chivar's Gretel," gave over 2250 pounds of

as most dogs. They are little trouble to milk and in fact like to be milked, as they will jump up on the milking stand of their own free will at milking time and seldom raise a foot while being milked. Goats are easy to care for and are rarely sick. Any food that is good for cows is relished by goats, as well as many other things such as vegetables and tree leaves and twigs. Although they need good food to do their best, anyone with a back yard can keep a goat by providing a little alfalfa hay and grain to supplement the vegetable waste from the table and the lawn clippings.

A good goat should keep up a fair flow of milk, say two to three quarts a day, for from eight to twelve months, but cannot be milked continuously between freshenings without harm to the goat. To avoid this, the best plan is to keep two goats.



# Los Angeles



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of excellent breeding at a fair price.  
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A fine straight one, bred right, priced right

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YOUNG BULLS FOR SALE

**C. D. HAYWORTH**

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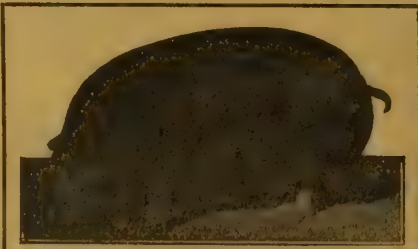
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### ORGANIZED EFFORT FOR CATTLE PROTECTION

The Cattle Protection Board, Underwood Building, San Francisco, informs cattlemen that the work of organization has proceeded in a very satisfactory way and the entire Act is now in operation with the exception of inspection of cattle before shipment, and it is hoped, in the very near future, to arrange for the appointment of inspectors to do this work.

All brand applications received have been classified and card indexed and certificates of brand registration are being mailed at the rate of several hundred daily. Many duplications of brands occur in all counties and the number of these is very much greater than was expected, indicating that in the past many brands exactly alike have been used by numbers of people in the same localities, which condition must have caused confusion among cattle owners. The present law will do away with this and it has already been highly commended by many cattlemen for its beneficial effect. Scores of letters are mailed daily requesting information from brand owners which will enable the board to adjust these duplications. This, of course, is slow and painstaking work and requires considerable time.

All cattle slaughterers are also being registered and bonded, and monthly slaughtering reports to this board are required from them. This enables us to keep an accurate record of all cattle killed, from whom they were purchased, etc., and will go a long way to prevent cattle rustling.

Preliminary work has already been conducted pertaining to cattle rustling and the board is prepared to investigate such reports at any time, upon notification. It particularly requests cattlemen to communicate with it immediately in the event of having cattle stolen.

### JERSEY PRIZE OFFERS AT LIBERTY FAIR

The American Jersey Cattle Club has offered to supplement the premiums offered by the Liberty Fair which is to be held in Los Angeles next October by \$140 in premiums divided as follows:

Fifteen dollars each to cow having a Register of Merit record for one year; cow having Register of Merit record for one year shown with two of her progeny; bull entered in Register of Merit, shown with four of his progeny, at least two of which must be females in milk; get of sire—four daughters of one bull, six months or over, two of them in milk; breeders young herd—one bull six months and under two years, two heifers one year and under two years, two heifers two months and under one year, females to be bred and owned by exhibitor; exhibitors herd—one bull two years or over, one cow three years or over, one heifer two years and under three, one heifer one year and under two, one heifer over two months and under one year, owned by exhibitor.

Ten dollars for produce of one cow: two animals over six months, at least one to be a female.

Twenty dollars each to grand champion bull exhibited by his owner, who must have been his owner for one year or over; grand champion female, exhibited by her owner, who must have been her owner for one year or over.

### WOOL STOCKS IN THE UNITED STATES

Stocks of wool held by dealers and manufacturers in the United States on March 31, 1918, amounted to about 427,000,000 pounds, grease wool equivalent, according to the quarterly wool report just issued by the bureau of markets of the department of agriculture. This figure compares with 585,000,000 pounds on June 30; 636,000,000 pounds on September 30; and 562,000,000 pounds on December 31, 1917. Imports during January, February and March of this year amounted to 111,378,688 pounds, including mohair and alpaca.

Stocks on March 31, 1918, in pounds, by classes were: Grease, 222,814,951; scoured, 46,559,630; pulled, 27,844,141; tops, 19,671,821; and noils, 17,441,316.

So long as the boys are at the front, difficulties are to be subdued, impossibilities to be trampled down.

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Better service is assured by the advertiser if when writing you mention the California Cultivator.



# Botulinus Poisoning

Boil Canned Vegetables Ten Minutes

During the past few years a number of fatal cases of poisoning have occurred from eating fruits and vegetables put up in the home in cans and jars. The poisoning is caused by a very powerful toxin produced in the canned food by the growth of a bacillus or germ known as Bacillus Botulinus. If the food in the jar or can is not sufficiently sterilized by heat the spores of the bacillus are not killed. These will grow later in the sealed can or jar and produce a toxin which is so poisonous that a single grain of canned corn or peas infected with the bacillus will be sufficient to cause death. The bacilli themselves are not infectious, but it is the toxin produced by them in the food that is dangerous.

Botulism or botulinus poisoning, is not the same as ptomain poisoning; although most cases of botulism are incorrectly reported in the newspapers as "ptomain poisoning." Ptomain poisoning is caused by the eating of partially decomposed protein substances, such as meat and fish. Ptomains are much less poisonous than botulinus toxin and occur in products whose decomposition can be easily recognized by the odor. Ptomains are not destroyed by any amount of cooking and boiling. Botulinus toxin, on the other hand, is easily destroyed by boiling. Botulinus poisoning is usually fatal; ptomain poisoning does not so often result fatally.

Until recently botulinus toxin was considered to occur only in meats. It has now been proven, especially by Dr. Dickson of Stanford, that some fruits and many vegetables have caused fatal cases of botulinus poisoning. Several deaths recently occurred at Madera and San Bernardino from eating apricots infected with botulinus. Asparagus, string beans, and corn have all caused fatal poisoning from botulinus. Sausage, chipped beef, commercially canned beans, and pork and beans, according to Dr. Dickson, have all been causes of botulinus poisoning.

The presence of botulinus in canned food is usually indicated by a characteristic rancid odor. This odor in some cases is easily recognized, but in others may be so slight as to pass unnoticed.

The poisonous principle acts by being absorbed by the blood stream from the digestive tract. It is one of a very few toxins that can be so absorbed. The germs themselves can be taken without causing serious trouble if they are free from the toxin.

Botulinus toxin will kill chickens and other fowls or animals. Cases are on record where canned vegetables that possessed a rancid or suspicious odor have been fed to chickens which were killed. An advanced symptom of the disease is paralysis. In chickens the neck is first paralyzed causing a condition known as limber neck. The chicken loses the power to keep its head erect. If suspected material is boiled it may be fed to animals or fowls with safety.

## Destroyed by Boiling

Where there is any doubt as to the sterility of home canned foods or foods put up in jars, they should be boiled for ten minutes after the container has been opened and emptied for use. Boiling destroys the toxin and in this way renders the food non-poisonous. Canned vegetables, if to be used for salad, should be boiled for ten minutes and allowed to cool before use. This is especially true of asparagus and string beans.

## Use Safe Methods of Sterilizing

If the proper methods of sterilization are used, home canned foods are just as safe as those canned commercially. Sterilization of vegetables under steam pressure as directed in Circular 158 of this station and in various United States department of agriculture bulletins is one of the most satisfying methods. The lemon juice method described in Circular 158 and in Illustrated Methods of Food Preservation 1 of this station has been tested during the past year and been found to destroy the spores of bacillus botulinus in vegetables heavily inoculated with this organism. This method consists in canning or putting up vegetables in jars in a dilute brine acidified with from five to six fluid

ounces of lemon juice or very strong vinegar per gallon, followed by sterilizing in the can or jar in boiling water in a washboiler sterilizer for one to two hours. (Write College of Agriculture, Berkeley, for copies of Circular 158 and Illustrated Food Preservation Leaflet 1. This and other methods are described in these publications.)

Vegetables may also be safely sterilized by three sterilizations in the can or jar in boiling water for one hour or more on each of three successive days. This is known as the "intermittent" or "three-day" method.

Another method commonly used is the "one-day" method. Where this method is used the vegetables must be sterilized in the can or jar in boiling water for a very long time in order to be sure that the spores are all killed.

Fruits should be sterilized in the jar or can in boiling water for the times given in publications above referred to.

Meats should always be sterilized in the can or jar under pressure or by the three-day method; never by the one-day method at the boiling point.

In sterilizing cans or jars of food in a washboiler sterilizer, count the time of sterilization from the time the water boils vigorously. This is extremely important.

## In Case of Poisoning

The symptoms of poisoning usually develop slowly, and by the time the case has fully developed little can be done to counteract effects of the poison. Where the poisonous nature of the food is discovered in time a great deal of the toxin may be eliminated by giving a strong emetic, such as tartar emetic of warm mustard water, and a strong purgative such as castor oil. It is sometimes possible in this way to eliminate the poison before it is absorbed from the digestive tract. Call a doctor at once.

Several laboratories are now at work on the production of an antitoxin to be used to counteract the effect of the botulinus toxin. These efforts have not yet met with full success. It is probable that such an antitoxin will in time be developed and used with success against botulinus toxin.

## Summary

Botulinus poisoning is caused by eating food in which bacillus botulinus has grown and produced botulinus toxin. The toxin ranks with rattlesnake poison in deadliness.

Botulinus bacilli sometimes survive the sterilization of fruits and vegetables where improper methods are used. Meats, string beans, peas, corn, asparagus, apricots, and pears, have all caused poisoning.

The foods must be sterilized in the can or jar by some one of the safe methods recommended in publications of the University of California, Agricultural Experiment Station Circular 158 and Illustrated Food Preservation Leaflet 1, in order that danger from botulinus shall be avoided.

Boil all vegetables for ten minutes after the jar or can has been opened for use.

Do not feed suspected material to valuable fowls or animals without boiling it first.

In case of botulinus poisoning call a doctor at once and in the meanwhile give an emetic and a purgative.

## UTAH EXPERIMENT STATION BULLETIN

The Utah agricultural experiment station has just issued Bulletin No. 161 on orchard heating by Dr. F. L. West and N. E. Edlefsen. The general conclusion reached is that while in most cases it is possible to protect the fruit, yet, at the prices received for fruit in Utah during the last few years, the cost of heating is, in most cases, greater than the value of the fruit saved. Present prices, however, will probably justify heating that would not be profitable in normal years.

This publication is being distributed free of charge by the Utah Agricultural Experiment Station, Logan, Utah, to all who desire it.



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### AVOCADOS

The Spinks is easily the best variety that has fruited in California. It combines the good points of all the others with none of their defects. A rugged, prolific tree and a superb fruit. Field grown trees of this and other well known varieties, including the Rey, Linda, Sharpless, Fuerte, L. X. L., Caribou and others, \$3.00 to \$5.00 each. Liberal discount in quantities. W. A. Spinks, Duarte, California.

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**Here is Your Opportunity to Secure A-1 citrus trees.** We offer several thousand 2-year-old lemons; Eureka and Villa Franca, also Washington navel; also several hundred Valencias on sweet root. We call these good trees and we know whereof we speak. ALBERT JACKSON, Upland, California.

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**Citrus Stock**—Very best Valencia and Eureka lemon trees. Two years old. Pedigreed stock. Big strong root system. Grown at San Dimas. Price right. Smith Citrus Nurseries, 1121 Investment Building, Los Angeles. M. 3604; F. 2729.

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**For Sale**—All kinds Citrus Nursery stock, 1 and 2 buds, fine roots. Y. Yamaguchi, Box 574, Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

### SPECIAL

**SHARPLESS AVOCADO TREES**—Mother's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsurgi, 23rd St., Upland, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

**For Sale**—Citrus trees and Seed stock at your own price. Write or come. B. C. Dodson, Glendora, California.

**For Sale**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, California.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### MISCELLANEOUS

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Will Ship Box of Lemons (4 dozen)** prepaid any place in U. S. \$1.00. Ernest Vince, Santa Barbara, California.

### WANTED

**Wanted**—A competent foreman for citrus orchard. Must be capable in the upkeep of pumping machinery. Married man preferred. References required. Address Box 97, Ducor, California.

### GEESSE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alhambra, Cal.

### ENGINES

**Several New and Slightly Used Engines**, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

**For Sale**—One 15-30 Gas Pull Rumley engine, cost \$2000.00, will take \$1500.00. Abram Marron, Jr., Box 10, Oceanside.

### SEEDS AND PLANTS

**Tested Bean Seed**—Hardy, upland grown seed beans will increase your yields. We carry a complete stock of Teparys, Mexican Red, Pinks, Lady Washington, Small Whites, Red Kidney, Blackeyes, Bluepods and Pintos. All seed tested by U. S. Department of Agriculture. Get our booklet Bean Varieties and their Local Adaptations. A dictionary on bean seed. Write for prices before planting season. Desk B, BOMBERGER SEED CO., Modesto, California.

**Bean Seed For Sale**—We have good seed beans on hand of following varieties: Limas, blackeyes, large white, small white, pinks, Teparys, Henderson bush, Mammoth bush. Now selling bean bags for fall delivery. C. C. Collins Company, Santa Ana, California. Sunset 71; Home 172.

**Tepary Bean Seed for sale**. Lots of 500 pounds or over 10 cents per pound f. o. b. Puente or Hartville. Twelve cents per pound, smaller lots.

Whittier Extension Co., Van Nuys Building, Phones: 10421, Los Angeles. Main 2606.

**Fancy Lot of Sudan Seed for sale**; doubly cleaned; plump and acclimated; grown in Napa County. Sure of germination. Price 8 cents f. o. b. Napa in hundred pound lots, 20 cents in smaller lots. T. H. Stice, M. D., Napa, California.

**Plant a Few Acres of Dwarf Milo Maize for seed**. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sudan Grass Seed**—We offer a limited quantity of fancy cleaned Sudan at an attractive price. Write today for samples and prices. Orders filled in the order they are received. Desk B, Bomberger Seed Co., Modesto, California.

**Seed For Sale**—Five tons Sudan, Egyptian Corn, Red and White Maize, yield 21 sacks per acre. Feterita, Peruvian Alfalfa, Amber Cane, wholesale prices. Car lots for feed. Box 501, Fowler, California.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**For Sale: Sudan Grass Seed**—Horticulturist inspected. 100 per cent pure, heavy seed that will grow. 20 cents or market price, per pound. Wm. Ritchie, Riverside, Arlington, California.

**Sweet Potato Plants**, Yellow, 500,000, \$2.00 per thousand, cash with order. Home Phone 833. A. T. Hooven, Anaheim.

**For Sale**—Pink beans. Choice seed. Hand cleaned. Ten cents per pound in lots of fifty pounds or over. A. Osburn, Redlands, Cal.

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**Sudan Seed**—Recleaned double sacked. 20 cents per pound, f. o. b. Lubbock, Texas. Acme Seed Co.

**For Sale**—Yellow sweet potato plants, \$2.00 per thousand. W. L. Lutz, R. 3 Box 7, Santa Ana.

### CATTLE

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., Cal.

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies**. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit. Tuberculin tested. Write or come and select. Horses, N. H. Locke Co., Lockeford, California.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, Cal.

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**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys**—1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

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**For Sale**—340 acre river ranch near Modesto on Tuolumne River, 160 acres upland, deep rich sandy loam, free from alkali. 100 acres of which is checked up, balance all ditched. 60 acres in alfalfa, particularly adapted to growth of alfalfa, beans, trees and vines. 180 acres of bottom land rich sediment loam all cleared with exception of about 30 acres. 100 acres being rented under term lease for \$1800, per year, some of the best prune, Bartlett pear, bean and garden land in this part of the state. 3 acres pear orchard growing on property at present. The land is well improved with good buildings to value of \$7500 and fences to value of \$2500 all in good condition and conveniently arranged for handling of dairy stock and hogs. Included with the property is 8 head horses and harness, full set of farm machinery and tools, five head sows, 1 Jersey cow, and chickens, all growing crops with exception of rented land, consisting of 90 acres of barley, 40 acres Egyptian corn just planted, 60 acres alfalfa hay and 3 acres of pears. This ranch is in first class condition and will bring income at once. Price \$225 per acre. Mortgage \$26,000 for 8½ years at 6 per cent. Parties desiring to view property, not agents, will be met by owner in Modesto at any time and shown over property. Address G. E. Brinkerhoff, Route D, Box 122 A, Modesto.

**New Openings**—State land well located, offered first time regardless present value—town lots, acreage, some improved. Your patriotic duty this year to buy state land, to be sold for taxes. Get the money in the treasury, the land on assessment roll, and crops growing on land. Get bargain at one-tenth value. Because of drink, death, leaving country, etc.; years ago this property went to the state. Because of war, work and worry, most persons will pass these bargains to you. Put in your order now for new 1918 lists and particulars, any three counties, \$5.00. Any man or woman can buy on payments without residence. New law makes all safe. You get mineral and oil rights. Get busy or get left. Joseph Clark, Sacramento.

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We still need a few more settlers to finish our 6000 acres, which is being sold in 40 acre farms at \$25.00 per acre. Ten yearly payments at 6 per cent interest. By selecting your future home in this splendid tract at Bryant, Snohomish County, you are not alone buying a fertile and productive piece of land, but you are buying the best investment in the state today. Railways, paved roads, schools, churches, canneries, creameries and mills.

The best proposition on the market for the man who wants a farm. For further information address the owners. BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

**No. 1063—14 Acres**—Price \$1700. Well fenced, good frame dwelling, 2½ stories with store, in excellent neighborhood, has stable for horses and cows, barn, garage, poultry house and other outbuildings; fruit, 5 miles from County seat, near railroad station. An excellent business proposition and a pleasant country home. Catalogue. Russell Realty Co., Baltimore, Maryland.

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**Toggenburg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, California.

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**Our Yearly Sale**—Breeders, Eggs. Usually July; but make room for growing stock, AT ONCE. Our surplus are offered at half what they cleared this year. Pens, trios, pairs, hens. Eggs, males, birds, low half. Surplus 12-week pullets, chicks reduced. Leghorns, Wyandottes, Rocks, White, Barred Rocks, Anconas, Minorcas, Orpingtons, Brahmas, Ducks, Geese, Turkeys. Some of best hens in California; trapezoid by governments, 200-283 eggs yearly. Investigate quick. James Beeson, Pasadena, California.

**Model Poultry Farm**. White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

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**COMPLETE PUMPING PLANT NEARLY new** 40 hp. West Coast engine and large double acting deep well plunger for 350-ft. well with 9-in. cylinder and 350 feet 11-in. casing cost \$4500, our price \$1950. DEMMITT CO., downtown office, upstairs, 120 N. Main St., Los Angeles.

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BERKSHIRES GUERNSEYS  
—GRAPE WILD FARMS—

At present the oldest boars we have to offer are of September and October farrow. They are by Royal Superbus and Fashion Longfellow 27th. We also have a limited number of gilts to offer, bred for May farrow.

A. B. HUMPHREY,  
Escalon, San Joaquin County, California.

Make Big Money — Pork prices jumping up. Breeding stock scarce. Next winter will see the greatest shortage of hogs and the highest prices ever known. Prepare now by getting some Whitten Ranch Poland-Chinas—the prolific, easy-feeding money-makers. Prices reasonable; satisfaction guaranteed; everything immune. Send for valuable free booklet, "Hogs for Profit." Ranch in Tulare County, but write R. H. Whitten, 519B Marsh-Strong Building, Los Angeles.

Poland-Chinas—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money-making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

"Billiken" Chester Whites — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

Registered Poland-Chinas of the medium type. Three sows to farrow their fourth litters in June and two boars, one two years old sired by Panama Chief. The other 3½ years old. Prices very reasonable. Wm. D. Bear, Chalfant, California.

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We Pay Cash for Hogs of All Sizes, weigh's and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

For Sale—8 Poland-China pigs, farrowed April 1st, sire of pigs "Long Smooth Jumbo," sire of dam "Superba," both 1000 pound hogs; dam 600 pounds. Bred right to make great hogs. \$15.00 each during May. M. A. Packer, Jefferson Street, Riverside, California

Copro (Made from coconuts)—Best hog-feed. Your dealer, or Lee Chamberlain & Co., Los Angeles, Cal.

Rancho Rubio Ducros—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for \$25.00. Elmer Lamb, Ceres, California.

For Sale—Four half-blood Ducro-Jersey sows, due to have pigs first of June; 1 registered Berkshire sow with 8 pigs; 1 registered Ducro-Jersey boar; 1 registered Berkshire boar. See E. R. Litten, Blythe, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Ducro-Jerseys—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

Large Type Poland-Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, Cal.

Ducro-Jerseys—We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

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A Matter of Management

Written for California Cultivator By Jean A. Koethen

THE California White Leghorn is the best in the country. Eastern hens don't come within sight of her. She does her best laying in her first and second years, but is frequently profitable through the third and fourth. So says Geo. J. Richardson of East San Gabriel, whose careful handling of 3500 hens has made him an authority on poultry subjects.

"Ask me the questions you want," answered Mr. Richardson, as I caught him in a mad rush from egg-room to incubator cellar, where a big hatch was waiting to be moved to the brooders. "Chickens are a big subject. I could talk all day and not get through." So I asked him first of all the question that is uppermost in the minds of poultry writers and editors, though it doesn't seem to worry successful poultrymen,—"Is the poultry industry going to the bow wows?" Not a bit of it," came the quick reply. "We are not discouraged in the least. We have to work a little harder, maybe, and plan a little closer, but for the man who is well established, owns his own plant and has capital to buy early and in wholesale lots, there can be no such thing as failure. True, some men have had to quit, but they were mostly fellows who hadn't much capital. In some cases they were buying their places on installments and to make the payments on their land and at the same time buy feed at present prices was more than they could carry. If we were buying our feed now it would cost us in the neighborhood of 36 cents to produce a dozen eggs but we bought before prices went so high so we are not worrying."

"But what about Rule 14, prohibiting the selling of laying hens? Has not that worked a hardship in many cases?" Mr. Richardson's eyes twinkled. "Oh, I guess that was all right, after all. They modified the rule a little so that a poultryman who had old hens he was morally certain would not lay could get rid of them. We cull pretty close, and hadn't more than 50 boarders on the place when the order came. We got rid of them readily enough. Any man who knows his hens knows whether they are laying or not. It was just as well to save the layers."

Mr. Richardson's Leghorns begin laying at from 4½ to five months,—many would begin earlier still if he allowed it. "I hold them back," he said, "feeding for size and development rather than for premature production. We aim to get every chick out of the shell before the middle of March. This makes it certain that they will reach laying maturity by October or earlier. As a matter of fact, many do begin to lay in July and August. Some of these early hatched pullets will lay through the summer and then molt in the fall, but our method of handling them is such that even though they do molt they will not drop much in egg production.

"In the first place, we keep the pullets from maturing too early by hopper feeding. Through the spring while they are developing we feed both grain and mash in hoppers, never throw the grain in litter as is so often recommended. The result is, that the pullet, since she has always food before her, and not only mash, but grain, will eat a good deal more grain and a good deal less mash than she would if the mash were before her always and the grain only occasionally. Mash, with its meat content, forces egg production. Grain develops the whole body. And so it happens that only the most vigorous pullets lay in July. The rest are held back till August or September.

"When pullets do molt in the fall, as some of them will, we are able to keep a large per cent laying right through the molt by special feeding. We give all they will eat at all times, then at night when their crops are full of grain, just before they are ready for the roosts, we add to the dry mash and hard grain which has been their ration during the day a half ounce per bird of wet mash. This stuffs their already full crops to the limit, and they simply can't stop laying. Many of our older hens, when

fed in this way, will lay through their molt."

Asked about the per cent of egg production he expected from his hens, Mr. Richardson took out his record book which showed that 903 hens in one house,—hens three, four and five years of age—had for two weeks in April maintained an average of 52½ per cent. During the same period the production of a flock of yearling hens had been 55 per cent; that of a flock of two-year-old hens 59 per cent; while a flock of hens hatched in February, 1917 had reached 64½ per cent. "You can see by these figures," said he, "that it is impossible to lay down any rule as to what ought to be expected. Much depends on the age of your hens and on the proportion of pullets and older hens. A flock of 1000 pullets and 2000 two-year-old hens could not maintain the same per cent of egg production as a flock of 200 pullets and 1000 two-year-old hens. This particular record shows the older hens ahead, but that is because the pullets have laid steadily all winter while the older hens were molting. Now they are lagging behind while the older ones go ahead. In general we don't expect our hens to lay much over 12½ dozen eggs in a year, say 157 to 160 eggs. That would be about 45 per cent for a yearly flock average, but then, as I said, everything depends."

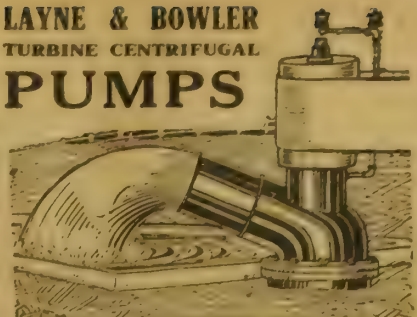
No trapneests are used on the Richardson ranch. Mr. Richardson finds his system of selecting breeders according to early maturity and late molting entirely satisfactory. At the age of about 3½ months the pullets are looked over and those which show the best development are banded. The following summer when as yearling hens they are going through their first regular molt, all early molters among these banded hens are culled out. The remaining banded hens include all that matured early and molted late, and these are kept as breeders. Some attention is paid in culling to length of keel and straightness of pelvic bones, but these tests are used mainly in selecting the breeding cockerels. Length of body is considered especially important. The color test recommended by Eastern experts for selecting the best layers is not considered reliable for California Leghorns because of the intermixture of Minorca blood which tends to lighten the color of the shanks.

The chicks on this interesting plant are brooded in hot water brooders, 110 chicks to each brooder. They are fed a good brand of buttermilk mash till they are 2½ months old. The mash is given every two hours the first week, and after that is kept before them from 9 a. m. to 3 p. m. This compels them to fill their crops with the grain mixture consisting of cracked milo, and hulled barley before they go to sleep. At 2½ months some of the P. C. A. laying mash, which is fed to the laying hens, is mixed with the buttermilk mash, and at 3½ months the pullets are on the laying mash entirely.

The layers, in addition to the laying mash which is kept before them in hoppers, receive a grain ration which is changed from time to time to suit conditions. At present it is a mixture consisting of two sacks whole barley, two sacks oats, six sacks milo. This is supplemented by a daily feeding of barley or oats which has been soaked till the white sprouts begin to show. This is given last thing at night and forms about 35 per cent of the grain ration.

The colony houses used for the young stock on this plant and others in the neighborhood are different from those generally used in other sections. They are built with one side open, except for wire, and a large door in one end, so that when the door is open the air is nearly as pure as that outside. These houses are built of light timber covered with tarred paper and are 8x11½ on the ground (a size which best utilizes the paper) four feet high to the eaves and six feet to the peak. They are designed to accommodate 125 half grown Leghorn chicks.

Washington spring wheat acreage shows ten per cent increase.



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## Household Department

## ONE LITTLE STAMP

One little Thrift Stamp—  
 Stuck on with glue—  
 Felt very lonesome—  
 But soon there were two:  
 Two little Thrift Stamps—  
 Were lonely no more—  
 For along came a couple—  
 And then there were four:  
 Four little Thrift Stamps—  
 Had not long to wait—  
 Till four more were added—  
 And then there were eight:  
 Eight little Thrift Stamps—  
 Were happier when—  
 Two more enlisted—  
 For then there were ten:  
 Ten little Thrift Stamps—  
 Didn't look so mean—  
 But looked a lot better—  
 When they numbered sixteen:  
 Sixteen little Thrift Stamps—  
 Happy as can be—  
 Singing—"We'll be worth five dollars  
 In nineteen twenty-three."

## "CHEER UP" LETTERS

**W**E DON'T believe Cultivator readers need any of the tonic administered in the following letter, but we all like to read the opinions of others who agree with us. This letter was written by D. A. Webster of the Beaver County News, Milford, Utah. Mr. Webster was formerly editor of the Santa Paula Chronicle, published in our California county of Ventura: "The other day I met the chairman of the Woman's Division of the Public Information Committee, Clara Sears Taylor, and she said, 'Do you know that one of the serious menaces to the morale of our boys here and in France is the tenor of their home letters?' "Probably I looked skeptical as well as shocked, for she went on to say that this assurance had come to her from very high military authority, and that it was her purpose to send out a bulletin urging women to keep up their courage, and she suggested that we do the same, so as Hasimuro Toga would put it, 'Here are bulletin of cheer-up.' "

"It is not enough to keep the home fire burning; if you find yourself growing weepy add another chorus of your own which might go in this fashion:

"Keep your letters cheerful,  
 Do not make them tearful;  
 Sad heart never helped a man to win a fight;  
 Tell them in full measure  
 What will give them pleasure,  
 Write with hope and pride and keep  
 your letters bright."

"It is really inconsistent for us to expect our soldiers to pack up their troubles in their new kit bags and smile, smile, smile, while we wipe our weeping eyes and stifle our groans against their new uniforms. What they have to face is bad enough, and what the women have to bear, who let them go, is not to be set down in words, and we would do anything that would help them, anything. But the first, most obvious thing to do is to keep up our own courage, and so theirs."

"Writing may not come easy and

humorous writing is a gift few possess, but if anything funny has happened, that would bring a smile, anything that Son can read to Brother and provoke a laugh, put it into the soldier's letter. There are certain items that belong in all these letters. If there is bad news don't work up to it. Tell him how the family is, what it is doing, and then be sure to tell him that the service flag is the proudest possession of the family, and the center around which everything circles. Tell him something about every member of the family, not omitting the dog, and anything interesting about the neighborhood. There are times when gossip is a duty. It need not be ill-natured.

"It is said that the perfect short story should move the reader to laughter, bring him close to tears, and have in it a touch of the inexplicable, the supernatural. The grief element is close enough all over the world just now. Anyone who has seen Bairnsfather's inimitable cartoons knows that laughter is still possible even when horror seems to have everything in the hollow of its hand.

"Moreover, it is possible to be religious without being mournful over it.

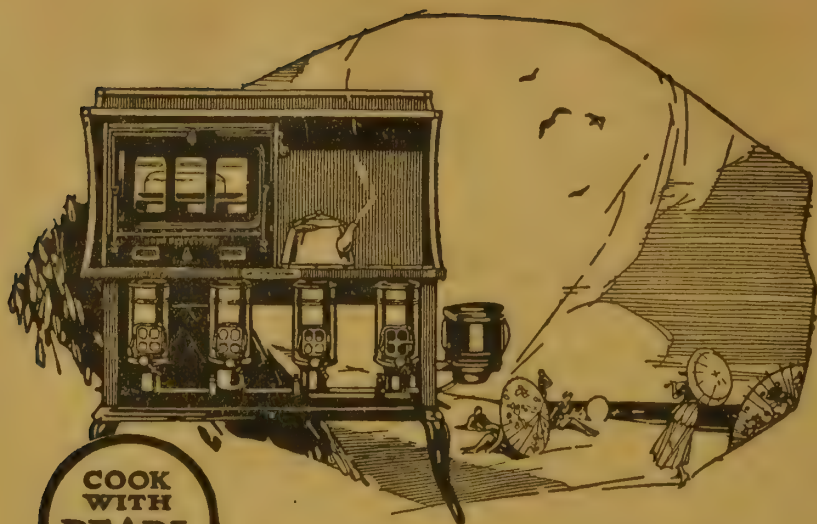
"There is no reason why we should let the kaiser have a monopoly when it comes to thanking God for victories, because in the end we are going to win, and autocracy and all that the kaiser stands for are going into limbo of the eternally lost. There is nothing in the world so absolutely certain as that, for

"Right is right, since God is God,  
 And right is sure to win.  
 To doubt would be disloyalty,  
 To falter would be a sin."

"That isn't such a bad verse to send your soldier lad. That is militant Christianity, and that has to precede the triumphant finish.

"Then there is one other element that I try to put into the letter going 'over there.' If the Hun ever gets one of those letters it would be full of cold discomfort for him. It ought to tell him that crops are good, the Liberty Loan oversubscribed, the new quota of recruits getting into training by the tens of thousands and the men already trained getting to the front about ten times as fast as we thought possible a year ago. 'They may bend, they may break the west line if the will, but nothing on earth can save Kaiser Bill. Every letter should be a nerve tonic for our boys and a heart depressant if it falls into the enemy's hands.

"If you are blue remember General Foch. He had had some cause to be just a bit worried at the Battle of the Marne, and when things were at their worst he sent this wire to General Joffre: 'My right is retreating; my center is breaking; my left is giving way; I shall attack.' So he attacked. All the world knows the result."



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A New Perfection Oil Cook Stove means kitchen comfort and convenience. Ask your friend who has one. Used in 3,000,000 homes. Inexpensive, easy to operate. See them at your dealer's today.

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(California)

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Chicago, Illinois  
Manufacturers



**KELLOGG'S ANT PASTE**

**MAKES ANTS DISAPPEAR**  
**A MAGIC PREPARATION**  
**25¢ AT ALL DRUGGISTS**



### CABBAGES AND OTHER THINGS

Cabbage is often improperly cooked. It does not require long cooking—25 to 35 minutes is sufficient time to allow for the fresh cabbage, although the winter cabbage usually requires longer. Cook it in boiling salted water, to which a small amount of baking soda—an eighth of a level teaspoon to a large head of cabbage—is added. Don't throw away the outside leaves; if shredded they can be cooked and used. Serve buttered or with cream sauce, or sometimes for a change serve with cheese (au gratin). Cabbage, cauliflower or celery are all good served this way.

#### Cauliflower with Cheese

Remove leaves, cut off stalk, and soak 30 minutes (head down) in cold

water to cover. Cook (head up) 20 minutes or until soft in boiling, salted water. Drain and place the whole cooked cauliflower, or separated flowerets, on a dish for serving. Sprinkle with grated cheese, cover with buttered victory bread crumbs, and place on oven grate to brown crumbs; remove from oven and pour one cup white sauce around the cauliflower.

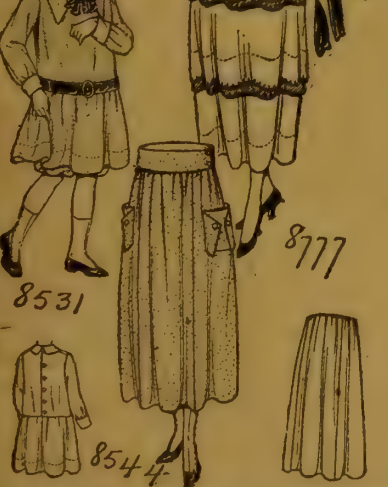
Steaming the vegetables instead of boiling them in water saves the valuable mineral matter that is often drained off with the water in which the vegetables are cooked. Some strong flavored vegetables, such as cabbage or onions, require cooking in a large amount of water to make the flavor milder, but carrots and such sweet juiced vegetables are better steamed or cooked in a little water as possible.

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OF EVERY DESCRIPTION  
**BOUGHT and SOLD**  
**BUTTRISS & McCLELLAN**  
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## The Cultivator Patterns



8779—Ladies' Dressing Sacque. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The blouse has a deep tuck at each side of the front coming from the shoulder seams.

8802—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The straight waist is in Empire effect, with the waist line cut higher in front.

8556—Ladies' One Piece Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The dress hangs in a straight line from shoulder to hem, and the plaits come from the shoulder seams.

8777—Ladies' Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The shoulder edges of the back of the waist extend over in yoke effect; the skirt is two gored.

8543—Ladies' Waist. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The back extends over the shoulders and the fronts are gathered to the edges to give the effect of a shawl yoke.

8531—Girls' Long Waisted Dress. Cut in sizes 6, 8, 10 and 12 years. The dress is in long waisted effect, having a perfectly plain waist which buttons at the back.

8544—Ladies' Four Gored Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The four gored skirt is gathered all around to the slightly raised waistline.

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PATTERN DEPARTMENT  
California Cultivator  
Los Angeles

Often onions are overlooked, except in the capacity of seasoning, yet they are a delicious vegetable.

### Scalloped Onion

Peel and slice large onions in one-fourth inch slices and boil until tender. Fill pan with layers of onion and victory bread crumbs, add salt, pepper and butter. Cover with one cup white sauce and sprinkle with buttered crumbs, place on grate in oven to brown crumbs.

Note: One cup of chopped, cooked ham or other meat may be added.

### COOKING THE PINTO BEANS

Many California bean growers are this year planting pinto beans. Consequently it's up to us women to know how to cook them. From Colorado, the home of the pinto, we have received these instructions for Cultivator readers. They are written by Evelyn Jones of the Colorado agricultural college at Fort Collins.

### Cooking the Pinto Bean

The results of comparative cooking tests applied to a year-old crop of Pinto, navy and lima beans are of interest. In these preliminary cooking tests it was found that if the Pinto beans were cooked in the water in which they had been soaked over night—the finished product was darker and of a stronger flavor. To some persons this proved to be a desirable characteristic. It should be added that the darker color resulting from the cooking is not in the least objectionable.

After soaking for 12 hours it was found that the time required for boiling until tender enough to mash easily when pressed between the finger tips was as follows: Pinto beans two hours; navy beans, three hours; lima beans, one and one-half hours.

### Pinto Bean Muffins

Two eggs, well beaten, one cup cold boiled bean pulp, one-half cup milk, one-third cup melted fat, one teaspoon salt, two cups flour (barley), two teaspoons baking powder.

Combine ingredients in order given. Bake muffins in greased muffin pans for 20 or 25 minutes.

Served with a brown gravy, these may be used as a main supper dish. If served as a bread the addition of a tablespoon of molasses is desirable.

### Pinto Bean Loaf

One pint cold beans, one egg, beaten, one cup bread crumbs, two tablespoons tomato catsup, two teaspoons salt, one or two tablespoons finely minced onion.

Combine ingredients, shape into a loaf and bake for 25 minutes. A little fat should be placed on the top of the loaf. Baste with fat and water. Serve with tomato sauce.

Other very satisfactory variations are as follows:

1. Combine with two cups of beans, two cups of grated cream cheese or cottage cheese, and one cup of bread crumbs.

2. Combine two parts of beans, one of cooked rice, cornmeal or oatmeal. Pimientos or finely shredded green peppers may be added to either of the three types of bean loaf, allowing from one to two tablespoons. The addition of beaten egg will help to better hold the bean loaf together. A tomato sauce is an especially acceptable addition to the bean loaf.

### HOUSEHOLD QUERIES

#### Rose Pillows

How do you cure rose petals with oil and spices for use in pillows?—Subscriber, Los Angeles.

The usual method of preparing rose petals for pillows is simply to dry them; the roses, especially the more fragrant varieties such as La France and practically all red roses, retain quite sufficient perfume after they are dried. It is not necessary to fix the perfume with oils or add attar of rose or spices as is done in making pot-pourri for rose jars. You will find it more satisfactory in drying the rose petals to spread them out in shade or partial shade than to leave them in the sun. Drying in the house is perfectly satisfactory. The petals dried in this way retain their fragrance for years.

Can any of our subscribers give formula for making pot-pourri of rose petals for rose jar? Surely some of us have our grandmother's recipe put away.

## Immediate Service on Piston Rings

When you want new piston rings, you want them at once. You can't afford to let your power machinery stand idle, or your automobile torn down, waiting for a set of rings to be made. That's when you need the prompt service given everywhere on

**McQUAY-NORRIS**

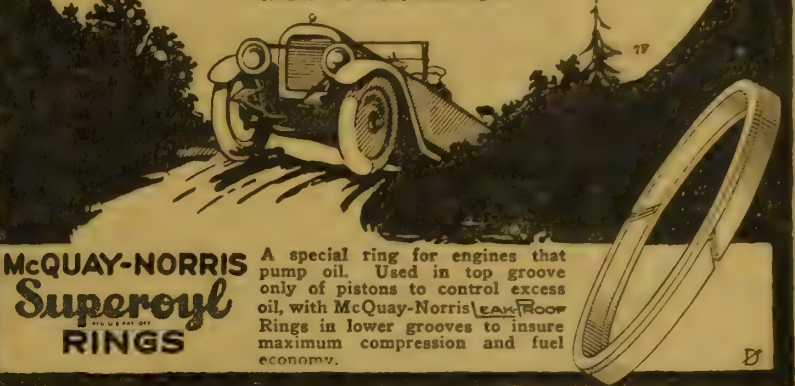
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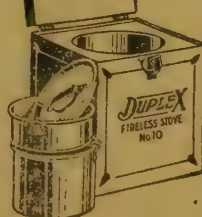
Easier pulling with Mica Axle Grease because it contains powdered mica, a mineral lubricant, blended with highest-quality petroleum grease by our special process. The mica keeps the spindles smooth and cool—no hot boxes—resists wear and pressure and makes the grease last twice as long. Get a can from your dealer today.

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It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

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ARE A NECESSITY THIS YEAR  
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AND PROFITS

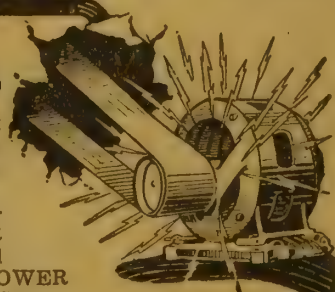
Have sufficient irrigating water independent of the rains. **CROCKER WHEELER ELECTRIC MOTORS** will help by furnishing **ECONOMICAL POWER** for pumping and other purposes. Insure your profits. Don't wait. Write or call now for information on these Motors. Submit your pumping problems to us.

## SMITH-BOOTH-USHER Co.

The Pump and Engine House of the  
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Exclusive  
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**LOS ANGELES**



### DEALERS

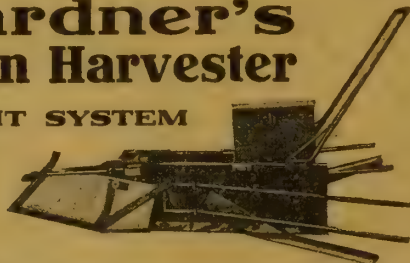
We have a very liberal proposition for unoccupied territory—write for further particulars.

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by using the latest and most efficient farm implement on the market.

## Gardner's Bean Harvester

UNIT SYSTEM



One horse cuts two rows, two horses cut four rows—greatest cutter on the market.

## Gardner Harvester Co.

Box 16

Santa Ana, Cal.

IF YOU WANT A BEAN CUTTER—  
WRITE FOR OUR TERMS.

## Los Angeles Market

Los Angeles, May 15, 1918.

### BUTTER

Produce Exch. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....39  
Dairy Exchange price past week on extras.  
May 8 9 10 11 13 14  
'18 ... 39 39 39 39 39 39  
Rcts. wk. ending May 14, 240,200 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. ....24  
Eastern Daisies .....27  
Domestic Swiss .....44

### EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.  
Fresh extras .....38  
Pullets .....36  
Case Count .....36  
Dairy Exchange prices past week on fresh extras.  
May 8 9 10 11 13 14  
'18 ... 39 39 39 39 39 39  
Rcts. wk. ending May 14, 3941 cases.

### POULTRY

We quote to producers:  
Broilers .....21@32  
Fryers .....32  
Hens, small, 23; heavy .....26  
Ducks, lb. ....20@26  
Roasters .....30  
Roosters, old .....14  
Turkeys .....30@32  
Geese, young, lb. ....25  
Rabbits, live, 17@18; dr. ....40

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, May 15, by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs. ....12.50@13.00  
Heifers, good .....8.00@9.50  
Cows, good .....9.50@10.00  
Canners .....7.00@7.50

Hogs—  
Av. 125 lbs. ....16.00  
Av. 150 lbs. ....16.50  
Av. 175-225 lbs. ....17.00

Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.  
Prime wethers .....12.00  
Ewes .....11.00  
Lambs .....15.00@15.50  
Yearlings .....11.00@11.50

### POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....1.65  
Idaho Russets .....1.60@1.65  
Locals .....1.40@1.50  
New, lb. ....5@5½  
Sweet, lug .....2.00

### ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. ....1.25  
Brown .....1.35  
White .....2.50  
Crystal Wax, cr. ....1.35  
Garlic .....8

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....60@80  
Jerusalem, lb. ....7½  
Asparagus .....9  
Beans—Wax, lb. ....8@9  
Ky. Wonder .....11@12  
Beets, sk. ....2.00  
Cabbage, lb. 1½, sk. ....1.50  
Red, lb. ....5  
Carrots, doz. ....80  
Celery, doz. ....1.25@1.50  
Cucumbers, bx. ....1.30  
Egg Plant, lb. ....16  
Horseradish, lb. ....15  
Lettuce, doz. ....40  
Leeks .....35  
Mint, doz. ....40  
Onions, green, doz. ....25@30  
Peas, Tel., lb. ....6½@7  
Peppers, Chili, lb. ....20  
Parsnips, doz. ....20  
Parsley, doz. ....20  
Radish, doz. ....20  
Rhubarb, C. W. bx. ....1.25@1.35  
Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Summer, cr. ....1.15  
Tomatoes, cr. ....3.00  
Turnips, doz. ....35  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—W. W. Pearmain .....1.50@2.25  
Spitzenberg .....2.50@3.00  
Y. Newton .....1.75@2.25  
Bananas, lb. ....6½  
Cherries, lb. ....15@18  
Loquats, lb. ....7@7½  
Strawberries, tray .....1.20@1.25

### CITRUS

Lemons, packed, 5.20@5.50; loose....4.25  
Juice .....3.50  
Oranges—Navel, bx. ....3.75@6.00  
Valencias .....6.25  
Grapefruit .....8.00  
Limes, basket .....75

### DRIED FRUITS

Regarding dried fruit sales see ruling given on page 587. The local wholesale situation as obtains from day to day is given in the following figures:  
Twenty-five-lb. bx. faced, 50s, ½c less.  
Apples, evaporated, 50s, 16; extra ch., 16½; apricots, ch., 16½; extra ch., 17½; fy., 18½; pears, 12; peaches, ch., 11; ex. ch., 12; fy., 12½; citron, 80 lb.; lemon peel, 25; orange peel, 25; prunes, 20-30s, 17; 30-40s, 15½; 40-50s, 14½; 50-60s, 13½; 60-70s, 12-8; 70-80s, 11½.  
Figs—Calmyrns, bx., 2.25; black, 25-lb. bx., 3.00; white, 3.00; 10-lb. Adriatic layer figs, 1.75.

### NUTS

Almonds—Not growers' prices but prices of wholesaler to retailer.  
I. X. L. ....25

N. P. U. ....23  
Nonp. ....24  
Peanuts, raw .....17  
Pecans, lb. ....20@21  
Walnuts—Cal. Walnut Growers' Association named prices Oct. 1:  
No. 1 Soft Shell, lb. ....20  
No. 2 Soft Shell, lb. ....18  
Budded, Diamond Brand .....24  
Budded, Standard Brand, (same size as No. 1 Soft Shell) .....21  
Prices delivered in East 1½c higher.

### RICE

See San Francisco rice market.

### BEANS

These are prices made by wholesaler to retailer.

Lady Washington .....14.00  
Limas .....14.00  
Pinks .....8.75  
Manchurian Reds .....9.25  
Baby Mex. ....9.50  
Garbanzo .....10.00@11.00  
Small Whites .....14.00  
Blackeyes .....10.00  
Tepary .....10.00@11.00  
Lentils .....25.00  
Mex. Red .....9.00

### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:

Tame Oats .....26.00@28.00  
Volunteer Oat .....14.00@16.00  
Wheat .....23.00@26.00  
Barley .....23.00@26.00  
Alfalfa .....18.00@20.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Number 1 alfalfa hay is \$23.00 per ton f. o. b.; common shipping points take a \$1.50 carload rate to destination. Prices from points where a higher or lower rate applies to destination will be correspondingly lower or higher.

### GRAIN AND FEEDSTUFFS

With new barley harvesting on in the Imperial it is probable prices on all grains may be established soon but as yet only chaos obtains and only individual barter can determine price of the feeds or grains.

## San Francisco Markets

San Francisco, May 14, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....40½  
Prices on butter are practically 18 cents above year ago this date.

Prices Extras past week and year ago:  
May 7 8 9 10 11 13  
'18 ... 40 41 40½ 40½ 40½ 40½  
'17 ... 35 35 35 35  
Rcts. wk. ending May 13, 650,500 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats, 20@22; Y. Am. ....25  
Jack cheese, full cream .....26@27  
Half skim .....14@17  
Ore. Y. Am. ....26½

### EGGS

Dairy Exchange Quotations:  
Extras .....39  
First .....38½  
Selected Pullets .....38  
Firsts .....37½  
Prices Extra past wk. and yr ago:  
May 7 8 9 10 11 13  
'18 ... 41 40 40 40 39½ 39  
'17 ... 35 33 33½ 33½  
Rcts. wk. ending May 13, 19,621 cases.

### POULTRY

We quote to producers, lb.:  
Leghorn hens, lb.; 30@32; colored do, 33@34; broilers and fryers ¾ to 1 lb., 38; 1½ to 2 lbs., 47@48; 2½ to 3 lbs., 50@53; old, do, 23@25; ducks, lb., 25@28; geese, 27@30.  
Squabs, doz. ....3.50@4.50  
Belgian Hares, live, lb. ....16@17

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings ¼ to ½c more.

Steers, lb., 11½@12; thin, 8@11; cows and heifers, 8@9; thin, 6@8½; calves, 9@10½.  
Sheep—Lb. gross weight: Fat, unshorn wethers, 14½@15; ewes, 12@12½; lambs, yearlings, 16@17; milk, 14½@15; shorn sheep, 1½@2 less.  
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 16; 140 to 300 lbs., 17½; 300 to 400 lbs., 17.

### POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks .....1.40@1.60  
River .....1.15@1.50  
New, lb. ....2@2½

### ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....75@1.00  
Bermudas, Imperial, cr. ....1.25  
Garlic, lb. ....3@3½

### VEGETABLES

Wholesale selling price.  
Artichokes, doz. ....12½@40  
Asparagus, lb., white, 3½@9; green, 3@5  
Beets, sk. ....75@1.00  
Beans, lb., String, 10@11; Wax .....8@10  
Carrots, sk. ....75@1.00  
Cauliflower, doz. ....30@50  
Celery, cr. ....2.75@3.25  
Cucumbers, bx. ....2.25@3.00  
Egg Plant, lb. ....5@12½  
Lettuce, cr. ....1.75@2.00  
Onions, green, bx. ....65@75  
Parsnips, sk. ....35@1.00  
Peas, lb. ....2@3½



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Increase your acreage and thereby increase your income.

Clear your stump land cheaply. No expense for teams or powder.

One man with a can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of the finest steel—guaranteed against breakage. Endorsed by U. S. Government experts.



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**Stump Puller**

Write today for special offer and free booklet on Land Clearing

Works equally well on hillsides and marshes where horses cannot operate

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The demand of THIS AGE is mechanical skill. PERFECT YOURSELF NOW for that BIG PAY which demand makes possible. Learn Tractor Engineering, Automobile Engineering, Repairing, Ignition, Self-Starters, Acetylene Welding, Vulcanizing, Machinist Trade in Western America's Oldest, Largest and Most Reliable Mechanical Trade School. Established 1905. Over 5,000 graduates. Write today for BIG 64-PAGE CATALOG, which may mean much to you. NATIONAL AUTOMOTIVE SCHOOL, Figueroa at 8th, Los Angeles.

## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

**BRENTWOOD IRRIGATED FARMS,** In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address

**BALFOUR, GUTHRIE & CO., LAND DEPT.,** 350 California St., San Francisco



Peppers, Bell, lb.,	.....7@15
Pumpkins, sk.	.....85@1.00
Rhubarb, Straw, bx.	.....85@1.35
San Jose	.....1.00@1.25
Squash, Cream, lug	.....75@1.00
Summer, cr.	.....1.25@1.50
Spinach, cr.	.....50@75
Tomatoes	.....1.50@1.75
Turnips, sk.	.....75

FRESH FRUITS	
Apples—Newton Pippins,	.....1.50@2.00
Bananas, Hawaiian, lb.	.....7½@8
Blackberries, cr.	.....1.40@1.50
Cherries, dr.	.....1.25@1.40
Loquats, lb.	.....10@15
Pineapples, doz.	.....5.00@6.00
Raspberries, cr.	.....1.50@2.00
Strawberries, ch.	.....7.00@8.50
Citrus Fruits—Lemons, bx., according to size, fy., 3.50@6.00; lemonettes, 3.50@4.75; grapefruit, fy., 2.50@3.25; ch., 2.00@2.50. Oranges—Bx., navel, 3.50@6.00; Valencia, from 100s to 228s, 5.50@5.75.	

DRIED FRUITS	
Not producers' prices but prices of wholesaler to retailer. See Los Angeles market.	
Peaches—Unpeeled, bulk basis, standard, 10; ch. 10½; extra ch. 11; fy. 11½.	
Apricots—Bulk basis: Standard, 13½; ch. 15; extra ch. 15½; fy. 16½; extra fy. 17½; fy. Moorpark, 17½; extra fy. 18½.	
Prunes—70s to 90s, 7; 60s, 7½; 50s, 8; 40s, 8½; 30s, 9½.	
Apples—In 50-lb. bxs., lb.: Fy., 10; extra ch., 15; ch., 15.	
Pears — Bulk basis, lb.: Fancy, 10½; ex. ch., 9; ch., 8½; standard, 7.	
Raisins—Cr.: Sun Maid, seeded, 10-oz. cartons, 4.20 for 48s and 6.15 for 36s; fy. 4.20 for 48s and 3.15 for 36s; do, 12-oz., 45 to cs., 5.25; ch., 10-oz. cartons, 2.00 for 36s; do, 12-oz. cartons, 45 to cs., 3.10. In bulk: Sundried, 1.75; fy., 1.90; ch., 1.75.	
Sulphur-bleached Thompsons, ex. fy., 5.37½; fy., 5.12½; ch., 4.87½; soda-bleached, 4.75.	
Loose: One-crown, 4.15; two-crown, 3.40; three-crown, nominal; four-crown, 3.20.	

NUTS	
Almonds—Cal. Almond Growers' Exch. Gross prices: Nonpareils, 21½; I. K. L., 19½; Ne Plus, 18½; Drakes, 16; hard shell, 11½.	
Chestnuts, Cal. lb.	.....10@20
Peanuts, Va.	.....17
Pecans, lb.	.....19@20
Pine Nuts	.....22@25

HONEY	
To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19.	

BEANS	
Jobbers' prices, cwt., recleaned:	
Limas	.....13.75@13.90
Bayous	.....9.00@9.25
Small Whites	.....Nominal
Large Whites	.....Nominal
Mexican Reds	.....9.00@9.25
Blackeyes	.....8.25@8.40
Pinks	.....8.00@8.15
Red Kidney	.....Nominal
Cranberry	.....Nominal
Teparies	.....10.50@11.00

RICE	
By agreement between the growers and millers of rice and the food administration, prices for California rice have been fixed as follows: Paddy rice, \$4.10 per 100 pounds to the growers; cleaned rice, \$7.10 per 100 pounds from the mills to the trade, and \$8.00 per 100 from jobbers and wholesalers to the retailers.	

HAY	
Under date of May 11, Scott, Magner & Miller says:	

Receipts past week, 774 tons. The dry weather has had its effect on crops. It now looks as though instead of a large crop of hay as predicted a few weeks ago the crop will be light, especially in some of the main hay sections. Whether or not this will be overcome by the cutting of hay in other sections that usually cut for grain remains to be determined. The entire situation, in our opinion, depends upon weather conditions during the next two weeks. Considerable new first cutting alfalfa is being offered but owing to the high range of prices very little, if any, is changing hands and none has been received on this market up to date. From the present outlook the quality of the new crop will grade considerably lower than the crop of last season.

We quote:	
Fancy Wheat Hay (light 5 wire bale)	.....27.00@28.00
No. 1 Wheat or Wheat and Oat Hay	.....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay	.....20.00@22.00
Choice Tame Oat Hay	.....24.00@26.00
Other Tame Oat Hay	.....21.00@23.00
Wild Oat Hay	.....18.00@20.00
Barley Hay	.....18.00@20.00
Alfalfa	.....17.00@19.00
Stock Hay	.....13.00@15.00
No. 1 Barley Straw	.....50@80

GRAIN	
As to grain and feed prices see note under Los Angeles grain prices.	

SEEDS	
Prices in round lots, lb.:	
Millet, recleaned	.....5@5½
Alfalfa, lb.	.....20@21
Flax	.....7@7½
Hemp	.....5@5½
Rape	.....2½@3½

Citrus Fruit Market	
Los Angeles, May 15, 1918.	
Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 8972, lemons 2522, total 11,494. To same date last season; oranges 23,333, lemons 4003, total 27,336. Central California this season; oranges 2467, lemons 115, total 2582. Last season to same date; oranges 4064, lemons 164, total 4228. Northern California; oranges 203, last year same date, 844.	

AT THE AUCTIONS	
May 10	
New York: 13 cars. Nav. 3.00-4.80, Val. 2.95-6.30.	
Pittsburg: 4 cars. Val. 3.10-5.75, Seeds. 3.50-4.55, lem. 3.90-6.10.	
Cleveland: Nav. 3.90-4.85, Val. 4.40-5.75, Grapefruit 5.25, lem. 4.05-6.35.	

May 13	
New York: 22 oranges, 1 lem. Nav. 4.65-5.55, Val. 3.50-7.75, Sweets 4.10-5.80, lem. 4.40-5.30.	
St. Louis: 4 cars. Val. 5.05-5.60, Seeds 4.20-4.65, lem. 4.70-6.00.	
Boston: 11 cars. Val. 4.10-6.15, Sweets 4.85-5.30, lem. 2.55-4.35.	

May 14	
New York: 17 cars, Nav. 2.75-4.20, Val. 4.45-7.10, Sweets 4.80-6.05, Seeds 3.40-5.50, Grapefruit 2.00, lem. 3.40.	
Philadelphia: 5 cars. Val. 2.45-7.45, Seeds 5.15-5.80, Mikes 4.50-5.30.	
Boston: 9 cars. Nav. 5.80, Val. 3.25-6.30, Mikes 4.75-5.15, lem. 3.50-5.05.	

TRUCK CROP MARKET, CONDITIONS	
Herewith extracts from the weekly summary of the Los Angeles branch of the Bureau of Markets as to general conditions and shipments of onions, potatoes, cabbage and strawberries. Issued at Los Angeles Tuesday p. m.	

Old potatoes continue weak. Most northern shipping sections show steady to firm tone, although many consuming markets quote lower ranges for old stock. Potatoes suitable for shipment seem likely to be cleaned up fairly well in Eastern and Northwestern producing sections and the region of the Great Lakes is reported as having considerable stock yet on hand. Large amounts have been used in the East for starch manufacture and in the Northwest for evaporating and manufacture of various potato products. Shipments of old potatoes have again declined to 1628 cars, compared with 2111 last week and 2889 the preceding week. The volume of new potatoes was 372 cars, against 968 last week and 501 the week before. Old stock sold to shipping trade in Northern and Eastern markets ten to 15 cents lower and was also weak in Central markets at \$1.15 to \$1.40. Colorado White stock in Southern and Southwestern markets declined ten cents, ranging \$1.40 to \$1.85. The week closed with tone of distributing centers for both old and new stock showing fairly steady decline. The government campaign for increasing the demand apparently is improving movement in some cities. Supplies of old and new stock have been coming in at the rate of 300 to 400 cars per day. Shipments of new potatoes have averaged nearly 150 cars per day, or fully one-half the volume of old stock and greater than the volume of old stock coming at the corresponding week last year. The combined volume of old and new stock shipments was 2500 cars. Sale of new potatoes to jobbers declined sharply in price and most markets closed weak at a general range of \$3.00 to \$3.75 per barrel for Florida and Spaulding Rose.

Onions

Range of prices for old stock held fairly steady, \$1.00 to \$1.50 per hundred for jobbing sales in Eastern and Northwestern markets. Prices of new onions continued weaker at Texas shipping points at 35 cents to \$1.15 per crate for No. 1 and No. 2 Yellow. No. 2 White declined to \$1.29. Movement of new onions recovered sharply to 507 cars, compared with last week when Texas shipped 421 and California 70. Movement

of old stuff seemed to decline, only 17 cars starting last week.

Cabbage

The volume of cabbage shipments continued heavy with total of 320 cars for the week, South Carolina still leading, with Alabama and Mississippi sections showing marked increase. Total shipment of old cabbage for the 1917-18 season to May 10 from nine states or shipping sections was 21,120 cars. Available figures indicate cars more heavily loaded than during previous seasons. Prices for new cabbage at shipping points in South Carolina declined 25 to 50 cents per barrel crate over last week. New York and several other markets were over-supplied, including much inferior stuff selling at very low prices.

Strawberries

Movement of strawberries continued active in consuming markets and prices are very well sustained considering the time of the year. The range varied greatly from day to day, generally 15 to 30 cents per quart basis for good North Carolina stock in Eastern markets. The South Carolina season is nearly over; growers are paid \$4.00 to \$7.50 per 32 quarts, the market declining to \$6.50 at close of the week. About one-half of these came from Tennessee. Strawberry movement so far this year has been not much over two-thirds of last season to corresponding date.

Shipments

From post card reports to the bureau of markets, United States department of agriculture, Miss Hoey makes report of the following shipment of cars of products from California for the week ending May 13: Apples, 12; artichokes, 9; asparagus, 7; bananas, 1; beans, 49; cabbage, 54; carrots, 3; cauliflower, 1; cherries, 2; cucumber, 1; dried apples, 3; dried apricots, 1; dried peaches, 12; dried prunes, 14; fresh peas, 2; lettuce, 46; Mexican tomatoes into state, 17; mixed fruit, 6; mixed vegetables, 73; mixed fruit and vegetables, 5; mixed dried fruit, 3; onions, 56; potatoes, 39; raisins, 26; rhubarb, 2; strawberries, 21; spinach, 273; tomatoes, 1; turnips, 2.

The spinach shipments which indicate large volume of business cover period during April and all of May and are largely from Sacramento sections to canners.

WEATHER CONDITIONS	
San Francisco, Cal., May 11, 1918.	
Rainfall—Temp.	
Stations	wk. Season. Norm. Max. Min.
Eureka	.....10 24.15 43.50 56 42
Red Bluff	.....02 11.89 23.90 88 46
Sacramento	.....01 10.61 19.52 76 44
San Francisco	.....T 11.48 21.87 64 48
San Jose	.....00 9.36 16.30 76 38
Fresno	.....50 10.19 9.28 80 46
San Luis Obispo	.....01 18.07 19.93 70 38
Los Angeles	.....20 13.85 15.37 72 50
San Diego	.....T 7.98 9.76 68 50

SPRING INVASION OF ANT PEST

The spring invasion of the aggravating ant pest has begun, and the housewife is complaining of the nuisance. In former years they seemed to accept the ant pest as an evil that could not be overcome, and as a result they threw away much foodstuff. Now, however, with the great cry for food conservation, they demand a means for ridding their houses of the insects.

All readers who are troubled with these bothersome insects should go to the nearest drug store and ask for a jar of Kellogg's Ant Paste. Take a match or stick and spread a little on the trail of the ants. Fortunately the ants do not die as soon as they eat the paste but

quickly disappear. As a rule every ant is gone within a few hours. If the ants reappear a second application will make them vanish.

### American Beauty Dust Sprayers



They have saved thousands for others, let them save for you.

#### KILL Mildew, Codling Moth, Red Spider, etc.

At your dealers, or send to us.

Standard size .....\$16.00  
Junior size .....\$13.50

One week free trial, money back if not satisfactory.

Send for our book on pest control.

**The California Sprayer Co.**  
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Los Angeles.  
Reedley, Calif.

### GET A WITTE KERO-OIL Engine



I can ship immediately—any size or style—WITTE Kerosene or Gasoline Engine—2 to 22 H.P., Stationary, Portable or Saw-rig—all ready to run on arrival. Why wait 8 to 12 weeks, or longer, when I can ship you a better engine Now! Today!!—so that you will be earning a part of its cost. Cash or Easy Payments. Immediate shipment proves superior factory service. My Free Book, "How to Judge Engines," tells how I save you \$15 to \$200, and sell you a better engine, direct from Factory. Yours for a post card.—ED. H. WITTE

**WITTE ENGINE WORKS,**  
3100 Oakland Av., Kansas City, Mo.  
3100 Empire Bldg., Pittsburgh, Pa.

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on Galvanized Surface Irrigation Pipe, Well Casing and other supplies. Write now for New Price List.

American Steel Pipe & Tank Co.  
354-56 Pacific Electric Bldg.,  
Los Angeles, Cal.



#### AMERICAN SURFACE PIPE

### Don't Waste Food

Get a Stephenson Patent Cooler and have everything cool and wholesome.

#### No Ice Used

Low Temperature Maintained by a patented water absorption process which cannot fail. It works according to an established LAW OF NATURE.

Write for interesting catalogue and prices.

**L. Anderson Co., Mfrs.**  
Martinez, Cal.

Do Cultivator readers want the daily reports of the Bureau of Markets of the United States Department of Agriculture? If so fill out and send to the California Cultivator, 115½ North Broadway, Los Angeles, the following blank:


APPLICATION FOR MARKET NEWS SERVICE

Please mail, free of charge, Market News Bulletins on the following crops .....

to Name .....

Address .....

Occupation .....



### One Man's Work.

With a 12-20 Yuba Ball Tread Tractor, and a good four-disc plow, one man can plow ten to fifteen acres a day—plow it deep—get down into the fertile subsoil and turn it up to enrich the surface and produce bumper crops. Have you a Yuba catalogue?

**YUBA**  
Manufacturing Company  
Department B  
433 California Street  
San Francisco

### Yuba Tractors

John Deere Plows and Wagons  
Contractors' Equipment  
**A. F. George Co.**  
200 N. Los Angeles Street, Los Angeles, Cal.



# Size-Strength-Safety Appearance-Economy

That's *what you want* in a tire and *that's what you get* in the Fisk Cord. All that, plus most unusual resiliency, speed, comfort and luxury—backed by Fisk quality and all the care and practical knowledge that can be built into a tire.

A fully equipped system of Fisk Service Branches throughout the country adds miles to your tires—and dollars to your pocket.



Time to Re-tire?  
(Buy Fisk)

Fisk Cords are  
made also with  
ribbed tread.



# FISK CORD



# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

An Illustrated Weekly Magazine

Devoted to the Rural Home and Ranch

LOS ANGELES

May 25, 1918

SAN FRANCISCO



## DEDICATION

**I**T is for us, the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us---that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion---that we here highly resolve that these dead shall not have died in vain---that this nation, under God, shall have a new birth of freedom---and that government of the people, by the people, for the people, shall not perish from the earth.

—Abraham Lincoln





## Wagons That Stand Up

**B**EAR this point in mind the next time you buy a wagon—Columbus and Weber wagons are guaranteed to stand up under capacity loads. You don't have to be a wagon expert to buy a Columbus or Weber wagon safely. All you really need to know is the weight of your heaviest loads. Buy a wagon marked to carry that load and we guarantee safety and satisfaction worth more to you than all the talking points of all the wagons in the market put together.

Ask any dealer who carries Columbus or Weber wagons to show you just what we mean by this statement, or write to us for full information. Our wagons have many good features—the International fifth wheel, the sandboard wear plate, link end rods, folding end gate, superior material—more features than you will find on any other wagon. All these help to give the good service, long life and economy that you get with Columbus or Weber wagons. See the wagon or write to us before you buy again.

**International Harvester Company of America**

(Incorporated)



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Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah  
San Francisco, Cal. Spokane, Wash.



## Stands the Gaff!

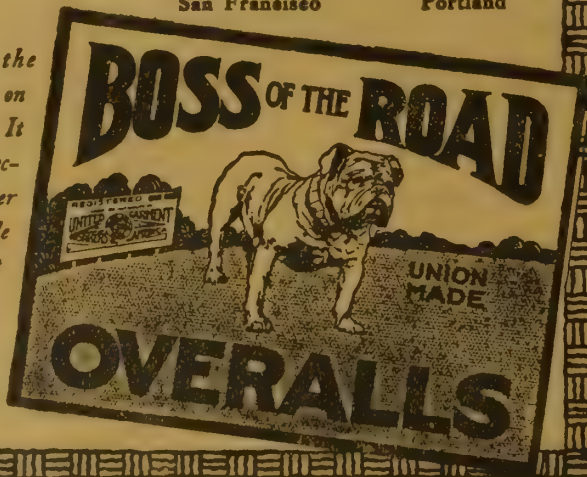
The roughest, toughest sort of jobs can't scare Boss of the Road Overalls. They stand the gaff longer because they're reinforced where strain and wear hit hardest.

A Neustadter product—built to give you unusual service. Loose-cut to meet every strain, twist or pull. Full-fashioned to give you that fine, easy, work-day freedom you appreciate. Stoutly stitched—guaranteed not to rip.

That's why it is *always* good economy to buy Boss of the Road Overalls.

**NEUSTADTER BROS.**  
San Francisco Portland

Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today.



## SURFACE IRRIGATION

Write for Illustrated Price List.

**PIPE**

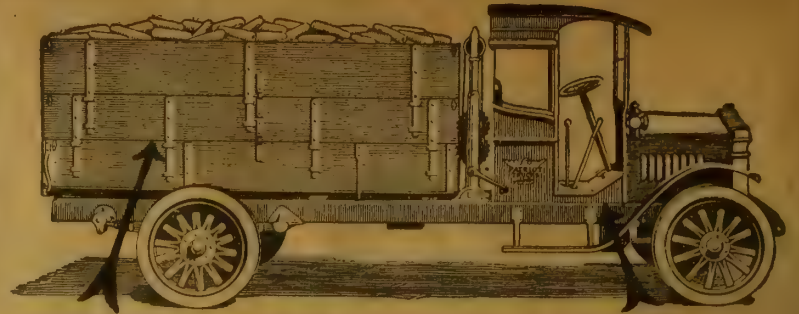
Can make immediate delivery

Body made from single sheet of galvanized open hearth steel, ten feet long, with extra heavy taper collar on one end and hand of heavy steel on the other—making each section 10 1/2 feet; made with lock seam (four thicknesses of steel), which gives unusual strength and durability, besides absolute proof against leakage. Manufactured by

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Body Built for Country Loads

Truck Built for Country Roads

## PATRIOT FARM TRUCK

**Built for Country Roads—Built for Country Loads**

There is real need for motor trucks on the farm—to speed up transportation—

Or—they have been mere cheap units to combine with worn-out, low-priced,

To bring better markets nearer—

To master bad roads—

To save high-priced horses—

But—the farmers have not bought them to any great extent. Why? The reason is, there has never before been a real Farm Motor Truck on the market.

Those that have been sold were built for the paved streets of the cities—not the soft roads and fields of the country.

**The Patriot Is the First Motor Truck Built for Farm Work**

low-powered cars—forming makeshift trucks that never were expected to deliver real farm service.

But now—the farmer has a real truck—built in the center of

Agricultural America—by experienced truck and body makers, in a new, complete and modern factory—and built for farm service.

Every farmer with 160 acres or more should find out what a Patriot Farm Truck will save. Write for information.

## HEBB MOTORS COMPANY

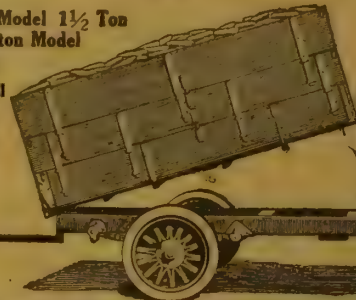
Manufacturers of Patriot Farm Trucks

1339 P Street

Lincoln, Nebraska

Lincoln Model 1 1/2 Ton  
Washington Model 2 1/2 Ton

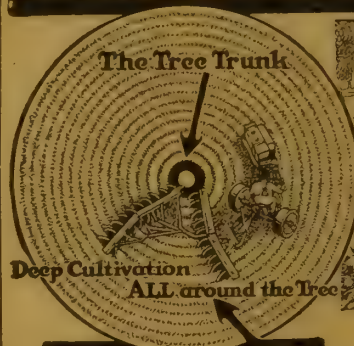
Continental Motor  
Internal Gear and Worm Drive



**The Powerful Patriot Hand Hoist**

by which the body, when loaded, may easily and quickly be elevated to dump its load.

(9)



**Look!**  
Before You Buy a Tractor

—See what **Bean TrackPULL**

**Tractor Does** Down Between the Rows and Around the Trees!

Note the practical turning feature of this remarkable tractor. Watch it pull the tools around turns just as easily as on the straight-away. See it go all around a tree, with the tools sunk down deep doing valuable work, plowing or cultivating right up to the trunk. Look at the circular diagram above. Do you know another tractor that will do that? Many tractors will turn themselves around all right but the tractor you need whether in orchard, vineyard or FIELD WORK must take the tools around too and keep them at work all the way around. This requires full power on the turns. A pivot-turn with half power isn't sufficient; and a pivot-turn with one wheel or track stationary and full power thrown on one side of the tractor is a straining overload.

That's where the great PATENTED SINGLE-TRACK FRONT-DRIVE principle of the Bean TrackPULL Tractor gets its immense value. It permits full power even when turning inside a 10-foot circle (5-foot radius). No pivoting, and no overload on any part. No other tractor can be built like the Bean, because basic patents protect it from imitation.

Don't buy a tractor that doesn't turn with full power. Your work calls for many turns and a tractor that will make them right will save you time and money.

Send right now for the Bean catalog with full details, learn the price of this remarkable tractor, and the name of the nearest agent who will give you a true demonstration of the TrackPULL doing the kind of work you have waiting for it on your place. Mail us this coupon now, before you forget it.

**Bean TrackPULL Tractor** (Patented Front-Drive)



Bean Spray Pump Co., Dept. D-4  
231 W. Julian St., San Jose, Cal.  
131 N. Los Angeles St., Los Angeles, Cal.

Please send Tractor Book with full information about the Bean TrackPULL Tractor.

Name .....  
Street .....  
City .....  
County ..... State .....  
No. of acres ..... Kind of crops grown .....



# California Cultivator

Vol. L, No. 21

LOS ANGELES: May 25, 1918

One Dollar Yearly

## The Fair as an Educator

California Will Hold State, District and County Fairs, Which Will Mean More and Better Products

**I**T REQUIRES many forces to educate us or enthrall us: or bring us into line to perform a duty which should be self evident and in fact is self evident to a majority. In olden times every political campaign called for torch light processions and other similar "educators." We find it necessary to conserve food. One statement showing the world's need should be sufficient, but hundreds of thousands of dollars are expended for printed matter; experts and speakers cover the country and make appeal to all to do their simple duty. Still there are slackers, or, at least, as one has expressed it, those who are so sluggish in their perception of the needs of the times that fines and even imprisonment are found necessary because of unpatriotic attitude. The government sees the need for three billions of dollars, and, again, a great campaign is necessary. Agricultural production must be increased; more printed matter, more urging on the part of gifted speakers, exhibits of products at fairs and expositions, all seem necessary to impress the one truth.

Some of us regret this waste of effort; the waste of printed matter, and waste of valuable time. To us the one simple statement might have been all that was necessary, and it should be, but in the aggregate it is not. To many, we regret to say, the war is merely an incident and it is not given enough serious thought. Again, to others, it dominates all and is looked at with such seriousness that every

their county agents, experts from the department and from many state and other organizations, state and district fairs, and, if we may be pardoned we believe we may safely add, to a very great extent farm papers of the land are uniting in working with the farmer. Some farmers have felt that they are being "worked instead of worked in cooperation with. Perhaps. There are a bunch of us that are more or

grew into street fairs which took on the nature of a trade mart where people brought their wares to trade or sell and after disposing of their goods joined in the general festivities, chatted with their neighbors from far and near and went home feeling that the day had been well spent.

"Street fairs grew into county fairs, then into state fairs, these last named dignified by state aid and controlled

industrial congress, farmer's congress and unions, have worked together to the advancement of agriculture."

California's state fair last fall was one of its greatest. Nearly every county and district fair in the state was held. One which was planned to be held last year, but was finally called off because of war activities, was that in Los Angeles which had been planned to be held on the old sixth district agricultural fair grounds, Los Angeles. These grounds, the property of the state, had been utilized as a permanent exposition, with magnificent building in which is maintained an exhibit showing the resources of the state.

At the time of the calling off of last year's date, it was resolved that should conditions warrant a fair would be held in 1918. The conditions warrant, and the management now hears the call of patriotic duty and has planned for one of the state's largest exhibits. The date chosen, October 12 to 26, will make this one of the latest fairs to be held this year.

On the other hand, one of the earliest to be held is the state fair, to be held at the state fair grounds at Sacramento, August 31 to September 8. Excepting the exposition year intermission this fair has been held every year since—almost—the birth of the state.

Investigations started by the department of agriculture in 1910 developed the fact that there were over 1200 county fair associations in the United States. The registered membership of these associations is approximately 250,000, the total gate receipts, \$6,500,000. Nearly all are encouraged by state and county ap-

Humboldt County Fair, Ferndale, August 21-24, secretary, W. S. Moore, Ferndale.  
California State Fair, Sacramento, August 31-September 8, secretary, C. W. Paine, Sacramento.  
Glenn County Livestock and Agricultural Fair, Orland, September 16-21, secretary, E. A. Kirk.  
Fresno District Fair, Fresno, October 1-5.  
Ventura County Fair, Ventura, October 1-5, secretary, Burton B. Crane.  
Southern California Fair, Riverside, October 8-12, secretary, B. L. Taber, Room 33 Garner Block.  
California Liberty Fair, Exposition Park, Los Angeles, October 12-26, secretary, F. B. Davison.  
Tulare Citrus Fair, Visalia, December, manager, J. Sub. Johnson, Visalia.

less restive under some of the flag waving "patriotic" side-stepping sometimes manifested. Still the great mass of us are fighting together. If it isn't our way, well and good, we are still fighting.

We believe one of the greatest of these educational movements is the agricultural fair. We mean the display of truly agricultural accomplishment. Touching upon its educational value, with a bit of history of the agricultural fair, a writer has said:

"Fairs are not new, but they hold entirely new features from old or ancient days. As known to the Egyptians, fairs were gala days for the

by state authorities. Cheap side shows and betting fakirs were gradually driven out, higher class attractions took their places, and educational exhibits from agricultural colleges, experiment stations and other sources formed a small part of the exhibitions.

"Agricultural education from various sources has grown in popularity until today educational features form the main item of fairs and are the axis of activity around which the old time entertainments revolve as remnants. Fair directors realize that the old adage, "All work and no play, makes Jack a dull boy," also Jill, a



Planning for a Liberty Fair

Secretary and Manager F. B. Davison (with overcoat) of the California Liberty Fair Association discussing with H. L. Musser regarding ground breaking for the Liberty Fair garden. Mr. Davison is a livestock fair and exposition man who has spent his life at that work. Mr. Musser is the committeeman in charge of the gardens which will be a feature at the fair, and in addition will distribute hundreds of thousands or possibly millions of plants to home and school gardeners. The building in the background is the permanent exposition building now on the grounds in Los Angeles.

movement which does not tend toward the serious and direct prosecution of the war appeals as an unpatriotic act. While the true patriotic view must be that every act of every true American must tend to a successful conclusion of this war, we may sometimes differ as to the steps required.

Farmers Clubs, farm bureaus with

upper classes, where racing, wrestling, and other feats of strength, held the center of the out-door stage. The amusement of the multitude seemed to be the whole purpose of these ancient festive gatherings, and to the extent they attained this object they were a success.

"In time these out door carnivals



Proud of Themselves

At the State Fair some two or three years ago. There are still some fine drafters in California.

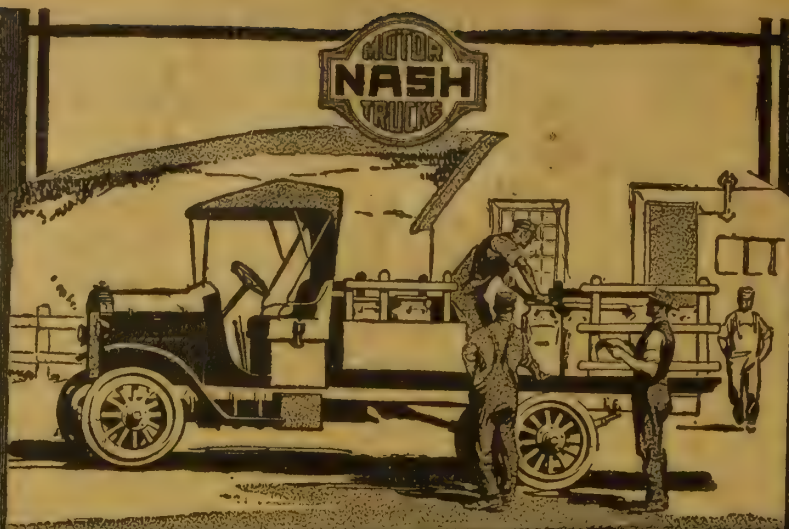
dull girl, is as true today as in the olden times. But the entertainment is of a class fitting an educational institution and the term fair is not so frequently used as a screen to hide gambling establishments and fakir resorts as has been done in comparatively recent times.

"All these agencies for agricultural development fairs, agricultural colleges and experiment stations, government farm demonstration work, boys and girls corn and canning clubs,

propriations. The annual premiums offered aggregate \$2,500,000. State fairs do not show so great an aggregate though their average is vastly greater in gate receipts and in funds paid for premiums.

The department of agriculture has issued statement in which the great fundamental need of increased production calls for the continuance of legitimate county, district and state fairs. Nearly every one of California's fairs will be held this year.





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(706)

## Pollination and Fertilization of the Olive Blossom

By I. Hawley, in Fig and Olive Journal



**P**OLLINATION should not be confounded with the fertilization of the flower; the former is purely a mechanical process developed by the tree to carry the pollen grain from the anther of the male organ to the stigma of the female organ. The olive depends essentially upon the wind to secure pollination. That this is so we are led to believe principally, by the fact that the tree produces an enormous quantity of pollen, which is a characteristic of all wind-pollinated trees. Secondly, the flower is not so constructed that insects working on it are forced to deposit the pollen grain on the stigma, except as may be noted later. Thirdly, the flower produces, practically speaking, no nectar or odor by which to attract pollen-carrying insects.

This does not necessarily mean that pollination may not be affected by insects. Bees, for instance, may be observed working on the flowers, but apparently their only reason for doing so is to collect the highly nutritious pollen grain for food, and in so doing they hover from flower to flower and do not deposit the pollen grains on the stigma, as they are forced to do in flowers of many other fruits, into which they must crawl to collect the nectar. If this observation be correct, the inference is that a large number of bees working in an olive grove might conceivably prevent pollination in some measure because of the collection of a large quantity of pollen. The foregoing statement is made more with the thought in view of pointing out probable results to those who may think it necessary to provide an apiary in the vicinity of their groves to promote pollination.

#### Effect of Thrips

It has occurred to the writer that the operation of thrips in an olive grove may, in a degree, assist pollination. These small and active insects may generally be found working inside the flowers and if they are examined under a magnifying glass their bodies will be seen to be literally covered with pollen, part of which, in their movements from flower to flower, is deposited on the stigma. These insects, however, are known to do considerable damage when working on flowers of other fruits, and a certain species of thrips is reported to have injured olive trees in Italy. This is one of the phases of olive growing about which we are in need of greater knowledge and that is the reason why it is here mentioned. If the thrips do more harm than good we want to know it so we may take steps to control their pernicious activity.

#### Climatic Influences

It may be stated in passing that while fruit produced on the tops of the trees is of a superior quality the quantity is less than that grown on the lower branches. While there are no doubt other causes which may contribute to this result, inadequate pollination may be a factor in bringing about this condition, since the pollen at the top of the tree falls, or, if there be winds, is probably carried away to the lower branches of adjoining trees, or is wasted.

Climatic conditions which adversely affect pollination are rains, frost, excessive heat and strong winds. Of these causes rain is by far the most detrimental, only occasional damage being done by the others. A heavy rain occurring while the trees are in full flower not only washes the pollen from the anthers but may also devitalize the pollen grains in the flowers that are open at this time. These devitalized grains are, of course, rendered useless for the fertilizing process. While losses from these causes are, naturally, beyond the control of the grower, nevertheless it would be advisable to make note of such occurrences and record the results so that we may determine more definitely in the future the percentage of loss from this cause, as well as losses occurring at later periods of the season from frosts.

#### Fertilization

Fertilization is the process by which

the pollen grain finds its way into the ovule of the female flower, where the nuclei unites with the female egg cell and forms the nucleus which eventually becomes the embryo of the seed.

The main interest which this subject holds for olive growers lies in the possibility of determining whether or not production can be increased by cross-fertilization. Generally speaking, our two principal pickling varieties of olives, the Mission and Manzanillo, may be said to be self-fertile, that is to say, that the pollen from an individual tree will fertilize the female flower on the same tree. At least, the preponderance of evidence and certain experiments seem to lead to this conclusion. In many locations isolated groves of either of these varieties do set crops in a fairly satisfactory manner and the same may be said of individual trees. Experiments in bagging individual or a number of twigs during the blooming period also demonstrate that these varieties are self-fertile. This does not imply, however, that cross-fertilization would not be beneficial.

We know this is so with some other fruits and there appears to be some evidence that it may be true of the olive. The writer, in talking with other growers, has, in a number of instances, found individuals who believe that certain trees of a particular variety that surrounded a tree of a different variety produced more fruit than did other trees not so situated. And the writer has also noticed this in a superficial way in his own work. However, detailed information on this point is not available at this time, or until further observations by a number of growers confirm the indications noted.

#### Suggested Experiments

A simple method and one easily practiced by the grower who wishes to ascertain the possible effects of cross-fertilization, is to carefully cut off a branch from different varieties of trees and shake the pollen on a particular branch of another variety, which he should mark for future comparison with other branches of the tree.

Another plan is to "bag" individual twigs just before the flowers open to demonstrate the sterility of the flowers to their own pollen and thereby prove the advantage of cross-pollination from either trees of the same variety or trees of a different variety.

#### New Varieties

We all realize the desirability of developing a new variety of olive that would possess the fine qualities of the Mission but at the same time give us a larger and earlier maturing fruit. This we can never hope to accomplish entirely for the reason that all experience goes to prove that very early ripening fruits are lacking in that quality of texture which makes for the best results in canning, as observe the early peach, apple, etc. Late ripening fruits are always found vastly more suitable for preserving purposes and the olive is essentially a canning proposition.

Progress in the propagation of new and desired species of olives is hardly to be expected, however, while the experimental work falls upon the individual grower, who cannot give the time and labor to an undertaking that promises no early or direct return in the way of profits. Rather this work should be assumed by the agricultural college and carried on for the benefit of the olive industry. This individual grower may help himself, though, by strongly recommending this activity to the university.

#### Setting of the Fruit

A most important point in connection with the setting of the olives is whether irrigation during the blooming period is beneficial or not. Of course, this will depend upon other factors such as the quantity of soil moisture present, the flow of sap as influenced by the prevailing climatic conditions, and the like.

As a recommendation it might be suggested that where convenient a portion of the grove be irrigated while



## The Life of Chilean Nitrate Deposits A. D. 1917

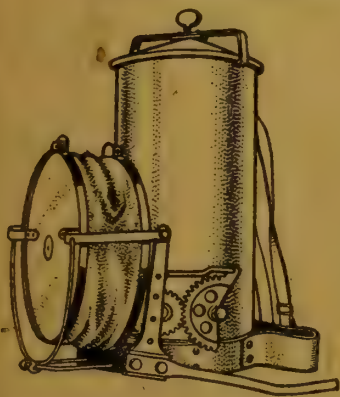
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the trees are in bloom, and the remainder allowed to stand over without irrigation until the fruit has set. In view of the fact that at present we have no agency to make such experiments as described it is up to the olive grower to do this for his own information and benefit.

It is a commonly accepted theory, and one supported by observation that an excessive flow of sap at this period tends to cause a profuse dropping of the setting fruit. The point suggests itself here that irrigation or non-irrigation at this time might be utilized in controlling the flow of sap to our benefit. For this reason it would appear to be worth the grower's while to conduct the experiment advised.

The writer feels that all this subject matter deals with points which may appear on the surface to be of little practical interest to the olive grower, but, recalling that all knowledge is the result of experiment, it is hoped that the investigations suggested may, in their turn, prove of some value.

### CLAREMONT POMOLOGICAL

One of the oldest and most successful farmers' clubs in California is the Claremont Pomological Club organized a score of years ago. It has grown until there is often a waiting list for membership. It holds nine sessions each year, sometimes as a picnic, more often as a genuine home dinner in the homes of its members. As each home entertains only about one in three years the one entertainment is made a great event. It meets not only in the homes within a short distance of Claremont, but at Riverside and other places at some distance. The meeting this May will be held in Los Angeles next Saturday at the home of V. V. Leroy, who has for years been secretary of the association.

On Saturday, May 25, forenoon session will begin at 10 o'clock, a noon dinner will be served, and at its finish the company will convene for the afternoon session.

For several meetings Dr. H. J. Webber of the citrus experiment station at Riverside has been delivering a series of addresses on plant breeding. Dr. Webber will be at the Saturday meeting and continue this series.

Dr. J. Eliot Coit, farm adviser for Los Angeles County, will deliver an address on June drop of oranges. Dr. Coit has made investigation of this trouble during several years.

Prof. C. B. Lipman of the University of California will speak on Modern Views on Soil as a Medium of Plant Growth.

J. D. Culbertson of Limoneira Lemon Orchards of Ventura County will discuss Lemon Culture.

C. S. Chapman will deliver address, presumably on Valencia.

Prof. Alfred Cookman of the botany department of Long Beach High School will give Economic Value of Birds to the Rancher of California.

To lighten up the program and jolly the bunch Rae Condit will whistle and turn loose some of his vaudeville stunts.

### FOR THE ORANGE APHIS

For some unknown reason the various parasites which usually keep down the orange aphis appear to be on a vacation. Meanwhile the aphis has increased until serious damage has been done in many groves. No one can foresee just when the parasites will appear and clean up the aphis. Those wishing to take the matter into their own hands should spray the trees with the following solution:

Black-leaf 40 ..... 1/2 ounce  
Soap ..... 4 ounces  
Water ..... 4 gallons

Dissolve the soap in hot or boiling water; add the "black-leaf 40" and boil for a few minutes, after which add enough water to make four gallons of prepared spray.—Los Angeles Farm Bureau Monthly.

### LEMÓN GROWERS' DIFFICULTIES

Italian lemon growers, faced by the transportation impasse, have been forced to turn their fruit over to the by-products factories for manufacture into citrate of lime and lemon essence. The supply of these articles is therefore larger than usual and market disposal still looms as a problem.

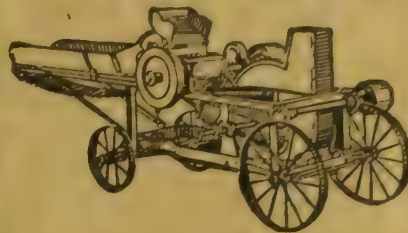
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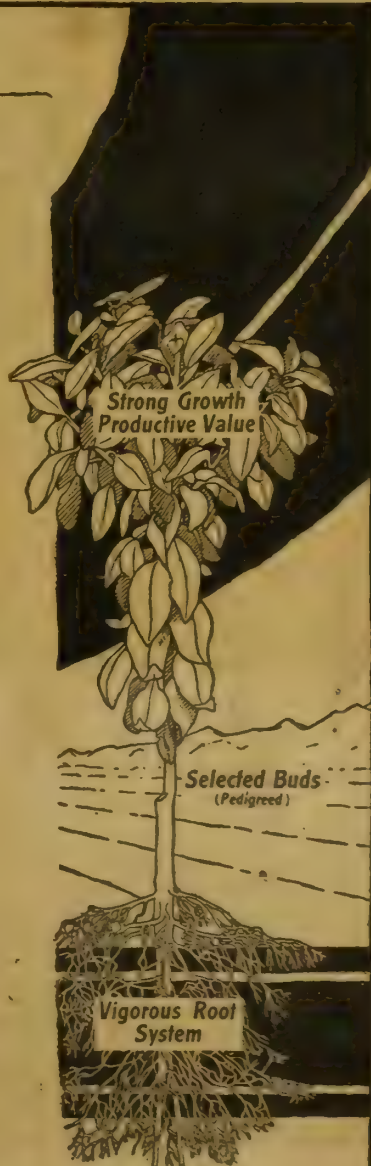
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## Standardization Conference



**S**TATE Commissioner Hecke recently called shippers, growers and horticultural officers together at Sacramento to discuss the standardization law and best rules to adopt to secure its enforcement. The commissioner presented the matter to the county commissioners present and urged necessity of uniform enforcement of the provisions of the law. The various fruits covered by the law were taken in turn and, so far as definite rulings were made, we give them from the minutes of Secretary Fessenden.

### Cherries

There was some discussion as to the term "well colored" in regard to cherries. It was the general opinion that Black Tartarians should be a mahogany color for shipment and from mahogany to black for local sale.

As to the term "practically uniform size" it was ruled that one-eighth inch variation in size be the extreme limit allowed.

In "practically uniform maturity" the color was taken as indication of maturity, and cherries that were uniformly "well colored" were to be considered of "practically uniform maturity."

### Peaches

The term "practically free from in-

sects and fungous diseases" was first considered and a high standard of cleanness was advocated. A limit of not over three per cent of any one defect and ten per cent total defects should be allowed.

The maturity of peaches is a difficult problem and the suggestion given by F. P. Roullard was to call together two or three representative fruit men and obtain their opinion on doubtful shipments. This he said had worked very satisfactorily in his county.

### Apricots

It was ordered that a limit of three per cent of any one defect and ten per cent total defects be allowed in the packing of apricots. There was some objection to this motion on the ground that apricots affected by shot hole fungus are edible and it was thought that an exception should be made of such fruit. It was pointed out, however, that the Eastern market for apricots is limited at best and that a lowering of standard would decrease rather than increase the demand. As all rejected apricots can be dried or canned, there would be no waste in packing only high grade fruit.

### Pears

A limit of three per cent of any one defect and ten per cent total defects

may be allowed in the packing of pears. There was a difference of opinion as to whether an exception should be made in the case of scabby pears by allowing scab patches of certain dimensions in a pack. In considering the general practice of packing "First Grade" and "Second Grade" pears, the chairman stated that it must be distinctly understood that, while the "First Grade" pack may be of as high a degree of excellence as desired, the "Second Grade" pack must conform to all requirements of the law. As to the variation of size of pears it was decided that a variation of not more than three-eighths inch in size be allowed. The question of the disposal of windfalls was brought up and the sentiment of the meeting was against shipping windfalls as such.

### Berries

The provisions regulating the shipment of berries were deemed sufficiently clear in the law. In the case of strawberries it was shown that the color cannot be uniform because the underside of the berry or the part hidden by a leaf will be a lighter shade even when the berry is ripe.

### Oranges

The term "substantially colored" as interpreted by the State Commission of Horticulture remains the same as last year.

### Plums and Prunes

Ruled that a limit of three per cent

of any one defect and ten per cent total defects be allowed in the packing of plums and prunes.

### Grapes

Suggested that on account of the shortage of cars a special grape conference be held, in order to prevent the difficulties which confronted the grape growers and shippers last season and the consequent waste of the fruit. Also that a uniform method of inspection of grapes be adopted by the county horticultural commissioners. Mr. Brosius described his method of testing in the vineyard and Mr. Roullard advocated the testing of samples brought in by the growers before picking.

## SUNBURN IN FRUIT TREES

By W. L. Howard, Division of Pomology



**F**RUIT growers should be warned at this time against the danger that may result from sunburn in young fruit trees. The beginner in the fruit business especially is liable to overlook the necessity for protecting his trees against sun injury the first year. While trees may sunburn when three or four years old, or even older, they are more likely to be injured the first year they are in the orchard.

One standard remedy against sunburn is to whitewash the trees. A whitewash formula used by many growers in the Sacramento Valley is made by using: Lime 30 pounds, tallow four pounds, salt 5 pounds. The tallow and salt are stirred in while the lime is slaking or while the mixture is still hot. Use just enough water to make a thin paste and then thin to the desired thickness for spreading with a brush or applying with a sprayer.

On young trees that are growing rapidly the whitewash will have to be applied each spring. On old trees where the whitewash is used largely for ornamentation—that is, to improve the appearance of the orchard, it may be desirable to have the wash stick on for two years. The best sticking wash we know of is known as the Oklahoma Formula and is made as follows:

Lime 80 pounds, water 12 gallons or less, salt two pounds, zinc sulphate one pound, boiling water two gallons, skim milk two gallons. Slake the lime in the water and cover the vessel until the steam ceases to rise. Stir occasionally to prevent burning. Dissolve the salt and zinc sulphate in the boiling water and add to the lime water; finally pour in the milk. Thin the solution to the desired thickness for using with a brush or sprayer.

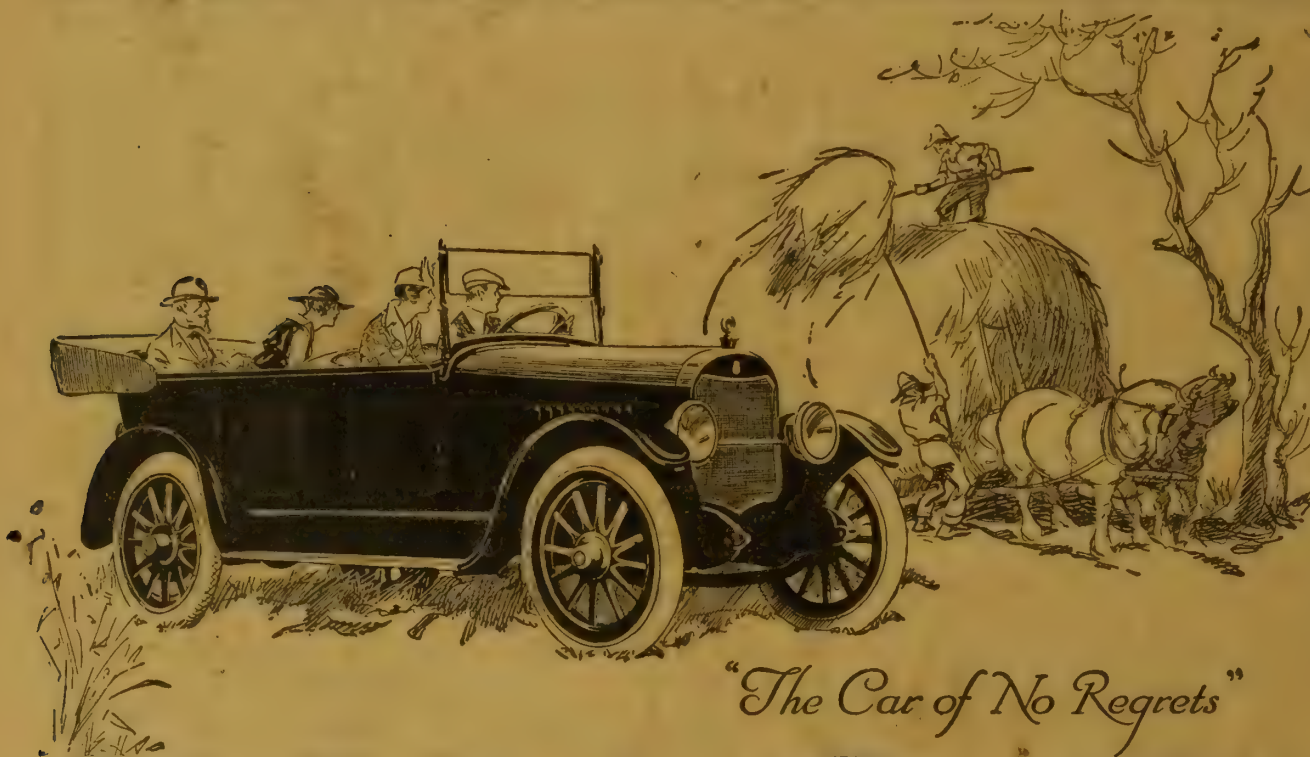
This whitewash is very durable on fences and buildings.

Other methods of protecting trees against sunburn are to use wooden tree wrappers or drive two stakes in the ground so as to shade the tree from the south and west. If trees are well protected from sunburn there may be little or no injury from the flat-headed borers which do so much damage throughout the state. Whitewash is not a secure protection against the borers as it soon cracks as the trees grow. The wooden wrappers are the best all-round protectors against sunburn, borers and rabbits. These should be thrust into the ground for an inch or two to prevent blowing about, and to prevent the entrance of the round-headed or crown borer. The flat-headed borers are not apt to attack trees that are in a good growing condition. Just as soon as the trees become weakened from any cause, or even one part of the tree is weakened from sunburn, the borers are pretty certain to begin their attacks.

A covering of Grade D asphaltum or S Flotline applied in March will keep out the borer, and also serves as a protection against rabbits, but of course will have no effect in preventing sunburn. However, asphaltum does not seem to increase sunburn injury as might be supposed. Asphalt has been used without injury on newly planted trees for the past two seasons at the University Farm at Davis.

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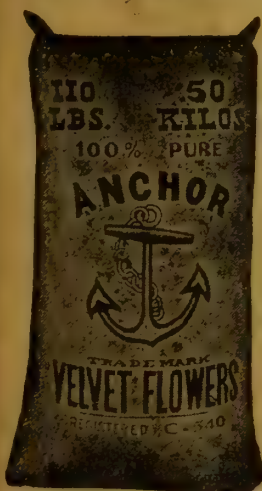
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### WOMEN'S LAND ARMY OFFERS HELP

The Women's Land Army, with headquarters in Los Angeles, has already sent two detachments of women workers to tomato fields in Elsinore, Riverside County. Organizing Chairman Eastman of the Los Angeles office writes to Cultivator readers:

"Let the women do the work," once the flippant refrain of a topical song, has become the popular chant of hundreds of fine girls and their older sisters throughout the country. Last week the offices of the Women's Land Army, on the fourth floor of the Chamber of Commerce Building, Los Angeles, were besieged by recruits eager to enlist in the army of food production. Over 700 registrations were taken and every day sees the growth of this finest of movements.

The Women's Land Army is here for service to the farmer who hasn't enough labor. We know that the shortage this year in California alone is estimated at 12,000. That means that unless the women of the country take the place of their men folk in the fields there will be ruined crops, want at home, and starvation abroad. Ranchers, fruit growers, dairymen, farmers of every kind are urged to write or telephone to the Land Army and see if they cannot send them the labor that means not only adequate food at home but the means of victory on the battlefield. The organizing chairman will be glad to arrange units of workers to suit the needs of the individual farmer or group of farmers. Two units are already at work and giving satisfaction. Two more are being made up to help the dairymen, and other units are ready to leave whenever the call comes.

Remember it costs you nothing to use this office, and if you find the help you are looking for, the Land Army feels that with your cooperation it has struck a blow for freedom.

We feel very much gratified that Manager D. W. Harvey of the Sedco Ranch, where our first unit is at work, has asked us for a second unit and has given us permission to refer to him for recommendation of the work they are doing.

### RURAL ETHICS

Here are a few pungent paragraphs from The Sperry Family. They are intended for salesmen rather than producers, but every one of them has a lesson for every one of us. Business courtesy which aids salesmanship may lead to commercial advantage; it always adds to the comradeship of every day life.

In selling goods, in print or person, good nature is a prime essential.

Never attack a competitor. Never appear ungracious.

Never complain at defeat.

Play business like a game of golf. Be always the cultured gentleman, always the good fellow.

Be efficient. Watch your chances. Make every stroke tell to the limit. But be fair with your opponent. Observe the rules. Sometimes stretch them, if you see a chance, in your rival's favor.

Applaud his master strokes. Show a sunny disposition. Be always a good sport.

An easy manner indicates reserve power. To the casual onlooker, the man who smiles always seems the winner.

Men buy more things because they like the salesman than logic ever sold them.

### "DINKUM APPLES"

We find this in an Australian fruit paper:

"In an American fruit advertising campaign, a name was adopted for a good brand that was being pushed. It was called the 'Skookum' brand. So when householders went to buy apples they asked for Skookums. It was a good stunt. Skookum is an Indian word meaning 'bully' or 'good.' Dinkum is an Australian word with a similar meaning. There's a fortune awaiting the fruit district which will standardize its pack, advertise, and call it 'Dinkum.'"

Some things may be the best of their kind in the world. But it is pretty hard for finite minds to know it. And harder still for cynical minds to believe it.

# Farm for Profit

## and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

## HAUSER PACKING COMPANY

9th and Mateo Sts. PHONE 10336—Bdwy. 5600 Los Angeles, Cal.

## Hercules Engines

## Fuel Oil Natural Gas

Land will only produce  
LARGE AND PROFIT-  
ABLE CROPS when suf-  
ficiently irrigated.

Insure your profits. Give your land plenty of water independent of the rains.—AND—Let Hercules furnish economical power for pumping. Don't Wait—Write or call.

Submit your pumping problems to us.

DEALERS: We have a very liberal proposition for unoccupied territory—write us.



SMITH-BOOTH-USHER CO.  
The Pump and Engine House of the Pacific Coast  
Los Angeles

## This Saw Cuts 25 Cords of Wood in One Day

It is absolutely guaranteed—hundreds in daily use.

Write for our booklet "How Dan Ross Cuts 40 Cords a Day".

Stocks  
Carried in  
Eastern  
Jobbing  
Points



This wonderful invention does TEN TIMES the work of TWO MEN in the woods.

With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a 40 inch log in five minutes. Write us today.

REWEADE & CO.  
SINCE 1865

339 Hawthorne Av., Portland, Ore.  
910 N. Howard St., Spokane, Wn.

## Look for this SIGN

It means full-powered,  
high-quality gasoline,—  
every drop! Be sure it's  
Red Crown before you fill.

STANDARD OIL COMPANY  
(California)



The Gasoline of Quality

When writing advertisers, mention The Cultivator.



Established 1877 Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, May 25, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

When Abraham Lincoln stood on the Gettysburg battlefield and uttered the few words which have been considered one of the world's greatest orations, he stated as the object of the gathering: "We have come to dedicate a portion of that field as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this." Then immediately he referred to the fact that the real dedication, consecration and hallowing of the ground had been by the brave who struggled there, adding; "It is for us to be dedicated" and other immortal words which we use this week. And today in face of an even greater war and as great a moment for our nation as that when Lincoln stood on Gettysburg, we may well memorize those words while we honor the brave boys who laid down their lives to preserve the Union. The day we formally observe is next Thursday, but Lincoln's words should inspire us to a daily observation of this memorial.

## PETTY THIEVERY

A subscriber refers to the good old times when the stealing of a \$4.50 nag was the only preliminary step necessary to a hanging bee and asks regarding the automobile parties from nearby towns which often swoop down on the defenseless farmer and pick "with their own hands" just a few fruits or roasting ears without thought of recompense. It isn't as common as it was at one time, but there is a strange perversity of human nature which justifies the youngster in stealing an occasional watermelon and older people in committing a petty theft. The farmer is justified in securing the arrest of these trespassers.

## HOME ON FURLOUGH

Thousands of former farm hands will spend a harvest time furlough at home. The war department has ruled to that effect and the director general of railroads has been asked to grant half fare to all agricultural workers who will spend their furlough in the harvest fields.

## PREPARE FOR PEACE

Preparation for peace is being made with far more forethought than was our before war preparation for war. A bill has recently been introduced providing for reeducation of crippled soldiers and sailors who will return from the battlefield. The war risk insurance act has been amended so as to provide for continuous process of functional and occupational rehabilitation. The federal board for vocational education is issuing a small monthly publication which will outline the work of this branch of the government. Canada has already taken up this line of work and this country has begun it none too early.

## COMMUNITY LOYALTY

The editor of the National Stockman and Farmer suggests that "The man who is not loyal to his own

ago America raised \$100,000,000 and placed it in the hands of the Red Cross, and she was faithful to her trust to the extent that for every one dollar which the people gave she spent one dollar and two cents in actual relief work. Hundreds of thousands of dollars of the fund raised in California remained at home to aid in caring for the families of some who went to the trenches but were unable to care for their dependents as they would like. The hundred million has been spent; now another hundred million is asked. Before these words are read the request will be granted, and we hope with an increase of at least a hundred per cent.

## GIVE BETTER MARKET

Southern California poultrymen in common with poultrymen the country over have had one big task to pay war prices for feeds and secure the cost back at war prices for poultry and poultry products, but they have organized; they have cooperated; they sent carloads of eggs to New York when they needed them, and have done their best and have had a measure of success.

As a step toward more profit, when hatching first began this season members of the association decided that

## MEMORIAL DAY

Honor it. Observe it. It is not a day for games and jollification. Men died (are dying today) that the Union be preserved, that Liberty shall not perish. We have dedicated one day of the 365 in memory of their service, their sacrifice. Let its observance be sacred.

community, his own neighborhood and his own home is not liable to be boiling over with patriotism for his country."

It's true as preaching. Are you a good citizen? Are you supporting farmers clubs, farm bureaus, the Grange, the Farmers Union, the cooperative marketing organization or other community effort which is endeavoring to make for community efficiency, national efficiency?

This is a pertinent question worthy of answer "by return mail." We don't expect the answer, however, for every farmer competent to give the answer is too busy.

## RED CROSS

The terrible sufferings of soldiers in the Crimean war in 1859 resulted in the first organized effort looking toward the alleviation of suffering by adequate hospital service. The Crimean situation appealed to that great English philanthropist, Florence Nightingale, and she gave her time, her abilities and even her life, for her health soon broke under the strain. But even after the Crimean war she came to America and assisted in alleviating suffering in this country. Later, a Swiss humanitarian heard the appeal for more effective work in reducing the awful sufferings of war. His agitation of the question resulted in an international conference at Geneva in 1864. His efforts were seconded, and in fact the organization of the Red Cross was made possible, by the showing made by American delegates to the conference of the effective work of the United States sanitary commission.

This "greatest mother in the world" has a wonderful record for alleviating suffering, not only on battlefields, but in time of great disasters. Membership in the organization numbers many millions. No civilized country is without its organization. A year

as soon as the red of the comb began to show or as soon as the little cockerels could be selected from the pullets, perhaps at the age of three or four weeks, they would be immediately killed. Feed prices could not be recovered at usual spring broiler prices. However, the matter was presented to the dealers in Los Angeles and an agreement was entered into whereby the poultrymen agreed to feed the cockerels until they reached the weight of a pound and a quarter, and the dealers in turn agreed to take them at 32 cents per pound. When the broilers were ready for market the agreement was "forgotten," and instead of 32 the price soon dropped to 28, later to 25, and by easy stages to 21. One of the producers tried an experiment. San Francisco prices were far higher; in fact if at three-quarters of a pound or better, the broilers were quoted at 40 cents; if above a pound and a half, 45. This was more than 100 per cent above Los Angeles prices. A few crates were shipped; the shrinkage was heavy; expressage, cartage and other items materially cut into the producer's returns, but sales account, after making these deductions, came back with check to the producer with a net of 29.61 cents per pound.

Food Administrator Cole was appealed to; he presented the matter to the dealers, and they have agreed to stand by the early season agreement and pay 32 cents to the producers. This sounds good, but unfortunately it has been found that the market is glutted and the buyers "have thousands of dozens already on hand."

## DRIED FRUIT INTERESTS

Dried fruit men of California have appointed a committee of six which is to look after dried fruit interests and in every way to serve the government if called upon to do so. The committee is made up of men representing the cooperative fruit interests and packers as well.

## This Week's War Notes

Congress is discussing a new war revenue and tax bill.

Early in the week it looks as if the Red Cross drive would result in liberal oversubscription.

The appearance of American troops at the review by King George won unbounded praise from English observers.

Many Irish agitators have been arrested, and it is understood that there was an understanding between Sinn Feiners and Germans.

It appears that Japan and China are increasing their forces in Manchuria, and it is thought that loyal Russian troops will fight with them.

The Prussian autocracy has strengthened its hold on the German people, and the effort looking toward democratization is postponed indefinitely.

The secret service has developed the fact that the I. W. W. and German propagandists have a definite plan of sabotage and destruction of property in oil districts and grain fields.

The emerging of the Hun navy is anticipated, and the Jackies of the Allied navies are hoping the Huns have their nerve and make the attempt. Many have thought this will occur at the same time land operations are renewed.

German U-boats are creating consternation among Norwegian fishermen. Notice has been served upon all Norwegian craft that they will be destroyed as fast as they can be located. The Norwegian people are greatly concerned as to the future of their nation.

London was raided by Hun airships and 37 men, women and children killed; many others injured. The Allies' flyers retaliated by attacking Cologne, and from information through Switzerland by the way of Amsterdam it was learned that serious damage was visited upon the city and many killed.

Russia has grown more restive, especially in the southeast toward Persia. Troops opposed to German interests have destroyed vast quantities of foodstuffs to prevent them from falling into German hands. The Germans have threatened the capture of Petrograd; but no definite advance has been made.

The president has approved the act of congress bringing under the army draft law all men who have attained 21 years of age since June 5, 1917. The new eligibles are to appear before their local boards on June 5, 1918. Male persons, whether citizens or not, are required to register. It is estimated that this will make 800,000 new men available for military service.

Italy is urging America to declare war against Turkey. There have been no great activities on the Italian front though slight advantage has been gained by Italian forces. Many have anticipated that Austria is planning to renew the drive at the same time the German drive is renewed on the western front, but the Austrian forces have internal problems of their own which makes a difficult situation.

The renewal of the great drive on the western front is still expected. The Allies have used the last three weeks in perfecting and making stronger their positions. To do this, advances have been made and German trenches have been captured. This has materially strengthened the Allies' positions. Artillery action has been incessant and air activities have resulted in the sinking of many planes, with the advantage on the side of the Allies. The press seldom refers to Hindenburg, and it is assumed that Ludendorf has the direction of enemy forces. General Foch is supreme in command of the forces of the Allies; the trust in him is complete; and it is said that the morale of the army was never better. This has been increased by the continual arrival of American troops.



# Agricultural News Notes of the Pacific Coast

## Northern California

Sonoma County dairymen are organizing cow testing associations.

Ukiah Valley, Mendocino County, reports exceptionally light crop of prunes.

Mendocino County stock men have reported death of several animals from mysterious poisoning.

Pear growers of Hayward are to be addressed by President Swett of the State Pear Growers' Association.

Edward Brown, poultry specialist from London, England, is to address poultrymen of Haywards, May 28.

Sutter County board of supervisors has enacted an ordinance which it is hoped will greatly reduce field fires.

It is now found that the north winds of the middle of April have materially lessened Sacramento Valley's grain output.

Woodland high school pupils are breaking in gradually by syndicating their labor on near-by ranches every Saturday.

Fifty cattle and sheep men whose stock is ranging in Plumas forest reserve have organized a cattlemen's association.

Secretary Ayers is endeavoring to organize Humboldt County dairymen into an auxiliary of the Associated Dairymen of California.

Sonoma County farm bureau directors are taking steps for a county agricultural fair, horse racing and amusements to be eliminated.

Sutter County farm bureau recently made trip to Placer County and inspected Geraldson's system of handling orchard with native cover crop.

State board of horticultural examiners will hold an examination of candidates for horticultural commissioner of Napa County, June 3, at Napa court house.

Land owners of Butte County are contemplating the construction of an irrigation system for lands lying between the foothills and the Feather River south of Oroville.

## Central California

Farmers near Tulare are planting belladonna plants.

Prunedale, Monterey County, is organizing a farm bureau center.

A charter has been issued for the Kern County Cotton Growers' Association.

The United States food administrator in Kern County is endeavoring to stop flour hoarding.

The Madera County farm bureau picnic recently called out an attendance of 150 farmers.

Nearly 100 cattlemen of Kern County have organized and will affiliate with the state association.

Kings City, Monterey County, anticipates the early construction of a bridge over the Salinas River.

Salinas, Monterey County, is still discussing as to whether it will hold its annual rodeo and round-up.

County Horticultural Commissioner Collins of Tulare County reports distribution of nearly 78 tons of poisoned barley.

Frank T. Cunningham, supervisor of Sequoia national forest, has moved his headquarters to California Hot Springs.

Wheat flour conserved by California housewives is now being shipped to the extent of 15,000,000 pounds direct to France.

Tulare County squirrel exterminating campaign is to be aided by Expert Neville from the state horticultural commission.

Madera union high school gets \$50 prize awarded by the county chamber of commerce for the greatest number of squirrel tails.

The San Joaquin County Fruit Growers' Association has appealed to the governor for closing of the saloons as a war measure.

Tulare County Cattlemen's Association has elected W. J. Fuljham, president and County Farm Adviser Conner as its secretary.

Hughson, Stanislaus County, reports its grain fields as injured by recent high winds which caused lodging of the heavy growth.

Oakdale, Stanislaus County, showed an increase of 25 per cent in output of its creameries. Its output of butter was over 100,000 pounds.

The Pacific Pea Packing Company's plant at Oakdale, Stanislaus County, is starting on the biggest run in its history. It has 400 acres of peas at Ripon where it has a huller.

Storekeepers of Exeter, Tulare County, will remain open through the summer only afternoons and evenings. The proprietors and helpers agree to go to the farms and orchards and put in the forenoons harvesting crops.

Horticultural Commissioner Hickman of Monterey County is warning farmers that lepidium draba, one of the pepper grass family, is a worse pest than morning glory and strong measures of control should be taken at once.

The United States marshal at Fresno has received full text of the anti-sabotage act and is now ready for every traitor who proposes to lower efficiency of any producer of war materials, and "war material" not only covers ammunition, but live stock, foodstuffs, fuel, and practically everything used by human beings.

## Southern California

Palo Verde ranchers are finding broom corn profitable.

Fred Rafferty has been made farm labor agent of Orange County.

Long staple cotton growers of the Imperial Valley are talking of organizing.

Mecca, Riverside County, is the earliest shipper of onions in California.

Mecca, Riverside County, is shipping tomatoes and other early fruits and vegetables.

Asparagus production of the Imperial Valley has been materially reduced this year.

Articles of incorporation have been filed by the California Alfalfa Growers' Association.

Citrus experiment station at Riverside is investigating as to the fertilizing value of peat.

Orange County proposes to plant 65,000 acres to beans and she hopes to harvest 750,000 bags.

Imperial Valley's output of barley will be 30 per cent greater this year than any preceding year.

San Jacinto, so sorely stricken by the earthquake, expects soon to show no mark of its unwelcome guest.

Forest supervisors and rangers of Southern California recently met at Escondido for a two-day conference.

The bureau of markets reports Southern California's output of early onions as lower than that of last year.

Ventura County farmer bean growers are lying low for bean thieves who sometimes have taken off as much as 20 sacks in a night.

Palo Verde Mutual Water Company has purchased 6000 gallons of oil to spread on stagnant pools for the benefit of the pest of mosquitoes.

Horticultural inspection of orchards at Victorville, San Bernardino County, shows almost entire freedom from insect and fungous pests.

The boys of the Sherman-Institute, the Indian school at Riverside, have volunteered and aided in the work of cleaning one of Riverside's parks.

Ventura County's farm bureau recently met at Fillmore and listened to an address on lemon culture by Manager Fleet of the Rancho Sespe.

The American Beet Sugar Company has purchased additional land near the factory at Oxnard. The land will be used for homes for its employees.

The management of the domestic water system of the city of Riverside estimates the loss of a million gallons of water daily and announces that the waste must be stopped.

Women of Thermal, Riverside County, recently held a strawberry festival to secure funds for the purchase of an electric sewing machine to be used for Red Cross work.

The Puente, Los Angeles County, Walnut Growers' Association reports within its membership 4500 acres of walnuts owned by 202 members. This is 99½ per cent of the tonnage of that section.

Coachella Valley is coming ahead, this in part at least because of help secured from the federal loan bank which has aided in the development of new tracts. Some of her lands are now producing three crops per year.

## The Coast and General

Oregon's agricultural service flag has 1056 stars.

One large Oregon lumber mill is now using 60 soldier loggers.

Idaho Farmers' Union has erected two new elevators within the past two months.

An Oregon sheep grower recently disposed of a bunch of sheep for \$140,000.

Douglas County, Oregon, boys are making money trapping moles for their fur.

Stockmen of the Northwest are finding feed conditions more favorable than a year ago.

Receipts of cattle and hogs at 44 cities in April showed increase over those of April a year ago.

The adjutant general of Idaho reports the I. W. W. situation as better in hand than for some months.

Dairymen of Lewis County, Washington, are organizing in order to secure better returns for butter fat.

Australia is to ship a million and a half bushels of wheat to California mills. Norwegian vessels will be used to carry it.

Navajo County, Arizona, markets annually about 15,000 head of cattle, 60,000 head of sheep and a million and a half pounds of wool.

Louisiana operated 150 sugar factories during 1916, which was reduced to 140 in 1917. However, the quantity of sugar and syrup was much greater in 1917.

The big 7500 ton concrete vessel, Faith, has made its trial trip, and the shipping board has contracted for a duplicate of it. There are also being built a large number of 400 ton barges. These will be used on the Erie canal.

The National Implement and Vehicle Association has been investigating as to the vast number of types and sizes of farm implements, and the members have reached an agreement whereby nearly 2000 of these different types will be withdrawn.

## Stacks Hay Fast WITH MINIMUM HELP



### Davenport's Triumph Stacker

Four men and one boy can stack from 65 to 85 tons of hay in a day with Davenport's Triumph Stacker. You can save enough on labor in putting up 400 tons to pay for the stacker which will last for years. Low priced. Economical, Efficient, Durable. Send for description and price list of our complete line of hay tools.

**L. M. DAVENPORT CO.**

110-112 North Los Angeles St.  
Los Angeles

## Great Power at Small Cost

## West Coast Gas Engines

Operate with Small Fuel Consumption



Fuel is becoming more and more an important item in engine and pump operation. WEST COAST GAS AND DISTILLATE BURNING ENGINES are constructed to run economically. LOW FUEL CONSUMPTION IS GUARANTEED. We specialize in complete pumping plants. Write us in regard to your engine and pump requirements.

**West Coast Gas Engine Co.**

420 East Third St., Los Angeles  
70 Fremont St., San Francisco

Factory—Union and Market Sts., San Diego



## King of the Black and Whites

was the first bull in the world whose seven nearest dams averaged over 30 pounds butter in seven days, and with his 30 A. R. O. daughters he has the largest list credited to any sire in service in California today. He has a large number of daughters yet to freshen in some of the best eastern herds, and he is being bred to a long list of highly bred, high record cows and heifers in our herd, assuring him a commanding place in the list of A. R. O. sires with corresponding value attached to his get.

## King Lillian Walker Segis

our youngest herd sire, is by King of the Black and Whites and out of Lillian Walker Pietertje 2nd, a 24.69 pound four year old daughter of King Segis and the 30 pound cow Lillian Walker Pietertje, who is out of the 30 pound cow Beauty Pietertje, who in turn is out of Prilly, one of the breed's foremost foundation cows. The rich breeding of this young sire, coupled with the exceptional promise of the first calves dropped to his service, assures a great future for him and his offspring.

## King Pontiac Segis Inka

our other herd sire, is justly entitled to be called the best bred son of King of the Pontiacs in the west. He is out of Segis Inka 3d, a 20.89 pound two year old daughter of De Kol 2nd's Butter Boy 3d and the 28.04 pound cow Segis Inka who is dam of the 29.62 pound cow A. & G. Inka McKinley who in turn is dam of the great King Segis. Segis Inka 3d also made 15,158.2 pounds milk and 684.56 pounds butter in one year as a two year old, and would unquestionably have made one of the great records of the breed had she lived to mature age.

These are the three great sires to which most of the

## 25 Registered Holstein Cows and Heifers

in our consignment to the Fourth Sacramento Sale, June 5-6, are bred, and it will be to your interest to study carefully the pedigrees of these great cows, together with the extended pedigrees of the three bulls noted above, then consider that in working with this blood in your herd you are working with one of the largest breeding establishments in the west, and you will surely decide that it is to your best interests to own some of them.

## 5 Choice Young Registered Holstein Bulls

are also included in our consignment, and we have selected some of our best individuals of high class breeding for this offering.

You are cordially invited to see our consignment at the ranch or at the sales grounds where they will be quartered three days before sale date.

**Henderson Company**  
Sacramento Bank Bldg., Sacramento, Cal.

# PRINCE RIVERSIDE WALKER

represents about the best combination of Walker-Mead breeding that we know of, and on top of the wonderful records made on both sides of his family, including several world's records, there is a big future ahead for the large number of his sisters and other near female relatives yet to be tested, and who are about to add further honors to already well proven families.



We have only a few bull calves by Prince Riverside Walker to offer. Dairymen who know take them away from us long before they reach service age. You might find one here that would just suit you. Give us a call or write your needs.

**Our Entire Herd is  
Tuberculin Tested**

## Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

## Don't Overlook a Necessity!



Hot weather, like it did last year, will find you without a necessity. Buy now and be prepared to cool your milk and cream.

## The Chilly King Cooler

is a cooler that is easily kept clean; the milk flows on the outside cooling surface which is absolutely seamless and free from dirt collecting cracks or corners; 100 per cent efficient.

Write for free descriptive circular on coolers.

also Manufacture  
**WEBER'S TUBULAR SANITARY  
MILK COOLER.**  
EVERYTHING IN CREAMERY MACHINERY  
AND DAIRY SUPPLIES

**O. J. Weber Co.**

759 So. Los Angeles St.

Los Angeles, Cal.

## Save Every Well-Favored Heifer Calf



THE patriotic effort to secure greater production of foods is being met by dairymen with hearty response, at least in many sections; although the editor of the American Agriculturist calls attention to the dairy census in New York showing a reduction by 4000 in dairy cows. He assumes the New York situation is true in other sections and adds:

### Surplus Only Temporary

While just now we have a temporary surplus of dairy products, that is not because we have too many cows or are producing too much butter, cheese, liquid milk or condensed products; the surplus existing today is due to other conditions—to lack of bottoms to carry butter fat, cheese and condensed products to other parts of the world where these products are much wanted.

If shipping facilities were available, every pound of milk or cheese or butter or condensed product would be at once in demand at high prices. Reading, therefore, in the paper about a surplus in milk means a temporary surplus only, and is due to shipping facilities rather than to any other reason. There is a factor, however, that has tended to produce for a moment a surplus—the lesser use of milk in homes because people have thought that they could do their bit by such saving as a step in food conservation. The campaign to lessen bread consumption and butter has also been effective in decreasing the consumption of milk. This was a mistake, of course. To ask people to use less of milk and its products was to expect cooperation which increased current stocks of all dairy products. The food administration has recognized this error, and is now doing commendable work in correcting it.

The situation that confronts the dairy industry is temporary, therefore, and soon will find its own correction. Without a doubt there have been thousands of cows of little value in the dairy. Many of these cows were producing milk at no profit and in numerous cases actually at a loss. Sending cows of this type to the butcher is commendable and shows the fine judgment of dairy owners. Undoubtedly also the higher prices for second-grade beef have been potent in moving the less productive cows from the dairy stables to the slaughtering pens. The really alarming feature of the dairy situation is observed in the fewer heifer calves that are being raised. This means that the normal increase of dairy cows to meet the normal increase of population is not keeping pace, and

that there will be an actual shortage of cows for supplying milk for the ordinary need of consumption.

While a milk famine will not actually result, a milk shortage is one of the possible conditions unless this tendency to slaughter dairy heifers is checked. So much for conditions in this country. The double reason for saving every well-favored heifer calf lies in the demand for dairy stock in Europe with the conclusion of the war. Dairy animals have been slaughtered right and left, not only in warring countries but in neutral countries. The shortage of food abroad for the past 12 to 24 months has depleted European countries of thousands upon thousands of dairy animals in each, many of the very best quality. There are over 30 million less dairy cows in Europe today than existed prior to the outbreak of the war. After the war this country will be called upon to supply not only vast quantities of dairy products of every kind and description, thus requiring the use of every dairy animal here, but the United States will have to supply vast numbers of dairy animals for these other countries. This, refers both to young stock and mature.

### Far-Sighted Will Profit

Heretofore America has not been an important dairy exporting country, but as soon as the war ends dairy heifers and cows, running into hundreds of thousands, will be exported. Hence the farmer who veals, or otherwise disposes of his well-favored dairy heifers, will be taking a small price for an animal that if held would be worth many times the money obtained for it at this time. By saving these heifers no risk will be run, no loss whatsoever has to be faced.

Whether these heifers enter into the exporting list or are kept here at home, it matters not. The world will need them as dairy matrons for milk and butter production and for breeding cows to restore the terrible losses of past years and to increase the dairy population to meet the needs of milk-hungry human population. The far-sighted man is the one who wins. To be the far-sighted dairyman of these times, be the man to save every well-favored dairy heifer in your herd. Do this to maintain your own milk output, your own herd, your neighbors' depleted herds, and to send abroad. The man who keeps and raises his dairy heifers will find his foresight will be repaid many times over. Save the heifers, the well-favored dairy heifers—in them will be a treasure that means both money profit and human service.

## The Big Sale at Sacramento



WHEN the auctioneer mounts the block at California State Fair Grounds, Sacramento, on the morning of Wednesday, June 5, it will mark the beginning of two busy days selecting and bidding and selling of the 139 head of fine registered Holsteins that are entered in the Fourth Sacramento Sale. The large number of dairymen who are buying registered Holsteins this spring are showing a keen interest in this sale, and quite a large number have already made their plans to be on hand to try and secure some of the good foundation animals. Established breeders are also looking toward this sale with an eye to the addition of a few high class animals to their herds, for some of the best bred and most desirable animals ever offered in a public sale in California will be sold during the two days.

A survey of the entries in the sale shows a total consignment of 124 females and 15 bulls from nine prominent California herds, several among them selling at Sacramento for the first time.

Buena Alta Herd, Oakland, makes practically a dispersal sale with 15 head entered. This herd won prominently in the show ring last year and the year before, and has in the offering a 29 pound cow, a 26 pound cow, and a fine four year old daughter of the latest century sire, Pietertje Hengerveld Segis. This heifer made over 22 pounds butter in seven days as a

junior two year old, and as she is a choice individual and a granddaughter of King Segis she will no doubt prove to be one of the attractions of the sale.

Pacific States Corporation, Tulare, although not wanting to sell any females, have contributed four choice heifers to help along the idea of offering only the better class of animals in public sales. Two of their heifers are daughters of Prince Juliana De Kol Walker, son of Prince Gelsche Walker and the former world's record cow Juliana De Kol, one of a daughter of King Korndyke Sadie Vale 2nd, and the fourth is that great heifer, Pascoe Segis Pontiac, daughter of James J. Jeffries' splendid sire, King Segis Pontiac Jannek, and out of a 27.96 pound three year old dam. And besides that she is bred to W. J. Higdon's \$6500 bull King Korndyke Pontiac 20th. There promises to be keen competition for ownership of this heifer.

Bonita Stock Farm, Lodi, sell ten choice young cows and heifers, nine of them bred to the 32 pound sire Supreme Glista Pietje. This is a highly bred consignment of good individuals, including a granddaughter of Prince Gelsche Walker, and a daughter of Admiral Walker Prilly out of a dam that made 847.55 pounds butter in one year as a four year old.

Henderson Company, Sacramento, have an unusually well bred offering of young cows, most of them bred to



Dutchland Sir

Pieterdje Creamelle

is a name that is becoming firmly entrenched in the story of high producing Holsteins in California.

By a grandson of the great transmitting cow Changeling, and out of a daughter of the former world's record cow Creamelle Vale, he is bred to great production and has already proven his worth with 13 A. R. O. daughters in our herd, records up to over 30 pounds butter in seven days.

We enjoy a steady sale of good bulls to dairymen, many of them coming back for their second and third bull. We believe we can fill your requirements in the bull line. Write us or visit our farm.

F. STENZEL

San Lorenzo California

HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

Whittier State School

WHITTIER, CALIFORNIA

SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make, conditions covering anything as variable and flexible as living animals.

Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Mgr.

Sacramento Cal.

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco

Carruthers Farms, Mayfield, Cal.

The Papec Pneumatic

Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.

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Pure Bred Stock Sales a Specialty

Sales conducted in all parts of California and adjoining States. Twenty-five Years' Experience.

BEN. A. RHOADES, Auctioneer

1501-3-5 So. Main St., Los Angeles, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.



Segis Pontiac Abbekerk

A son of Segis Pontiac De Kol out of a 35 pound dam that made 34 pounds last year. A. W. Morris & Sons.

their three herd bulls, King of the Black and Whites, King Lillian Walker Segis, and King Pontiac Segis Inka. There is plenty of King Segis blood in this consignment and there are plenty of buyers looking for this line of breeding.

Rosamaines Rancho, owned by Stalder Brothers, Riverside, are selling a few choice females and one bull. In their consignment is a 23.97 pound four year old granddaughter of King Segis Hengerveld and two granddaughters of Prince Gelsche




Rosamaines Segis Pontiac

Son of the 34 pound sire, King Pontiac Netherland Segis 3d and out of a 26.86 pound four year old dam. Rosamaines Rancho.

Walker, all bred to the 34 pound sire King Pontiac Netherland Segis 3d. A fine young son of this sire is also in this consignment, out of a 26.86 pound four year old dam.

Gotshall & Magruder, Ripon, are coming to this sale with an unusually good offering including two daughters of King Morco Alcartra, a daughter of Segis Pontiac De Kol Burke, a daughter of King Segis Pontiac Jannek, a splendid 21 pound cow, and a daughter of Beauty Pieterdje Beets that is now on test and will probably



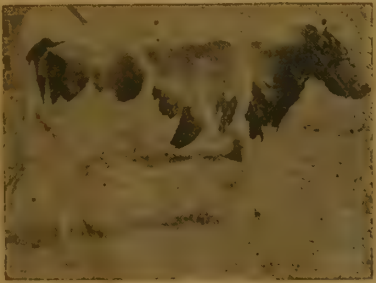
Bonita Gelsche Pontiac

Granddaughter of Prince Gelsche Walker. Bonita Stock Farm.

have up around 23 pounds butter in seven days.

The J. S. Gibson Company, Williams, went into some of the tops of their herd for this sale, and among others will offer the highest yearly record daughter of their 40 pound herd sire Prince Alcartra Korndyke. She made 729.6 pounds butter in one year last year as a junior two year old. In their offering will also be two good daughters of Prince Gelsche Walker, and several high record cows, most of them bred to Prince Alcartra Korndyke, son of Tilly Alcartra.

A. W. Morris & Sons Corporation, Woodland, will sell some choice young cows and heifers bred to King



Bessie Oak Segie

Four year old daughter of Segis Oak Homestead Fobes. Henderson Company.



PURE BRED

REGISTERED HOLSTEINS

Prince Gelsche Walker Korndyke

shown above, is a money maker right today for every man who is fortunate enough to secure one of his good young sons.

At the moderate prices at which we sell them, there is margin for a very substantial profit in the increased value that is sure to come just as soon as his daughters begin to go on official test, which will be within the next few months.

Remember that we are not selling any daughters of Prince Gelsche Walker Korndyke. We are developing what we think is a really high class herd, and we have not been able to find any females that we judge are superior to the daughters of this great sire as foundation females.

Why not take our tip and buy one of his young sons now, and join the ranks of the many dairymen who will benefit through our official test work? Remember that we extend liberal terms and sell at moderate prices.

King Korndyke Pontiac

is shown below, and he is being bred to practically all of the daughters of Prince Gelsche Walker Korndyke.

JANE GARDEN FARM


SACRAMENTO CALIF.

FRED W. KIESEL PROP'R.

C.W. YOUNG SUP'T.



Prince Alcartra Korndyke



is a 40 pound bull, but that doesn't begin to tell the story. His sire is Korndyke De Kol's Prince, whose offspring rank with the offspring of any bull that ever lived in combined production and individuality. His dam is the one and only Tilly Alcartra, the cow that made a 40 pound record as an incident, not as a real objective, for she did it after five straight years of yearly test during which she produced a volume of milk and butter unapproached by any other cow of any age or breed. And today at past nine years of age she is making the greatest record for milk and butter of her whole career. We have only a few sons of Prince Alcartra on hand. We know if you could see them and find how moderately we price them that you would want one to head your herd. Come and see us, or write your wants.

The J. S. Gibson Co.

Williams California

Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

<b>Pelandale Holsteins</b> Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale. J. A. Polands, Rt. B, Modesto, Cal.	<b>HOLMES STOCK FARM</b> Registered Holsteins of best breeding. Young bulls for sale. R. L. Holmes Modesto, Cal.
<b>Segis Pontiac De Kol Dutch</b> Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto	<b>White House Holsteins</b> A well bred proven herd sire for sale, also a few bull calves. A. M. Bibens, Rt. I, Box 367, Modesto, Cal.
<b>Registered Holsteins</b> Young sons of Prince Hiske Walker out of A. R. O. dams for sale. H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.	<b>Thompson's Registered Holsteins</b> Young bull calves for sale with yearly record backing. Luther Thompson, Rt. A, Box 351, Modesto Cal.



Our Senior Herd Sire is KING KORNDYKE HENGVERELD ORMSBY 7th Five of his sisters sold at public auction for \$23,800, an average of \$4760. This blood has made some of the world's greatest producers. Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne. Young bulls for sale. No females. REGISTERED BERKSHIRE BOARS, sons of the \$1500 boar Star Leader, for sale. Kounias Registered Stock Farms, Modesto, Cal.





**Changeling Tidy Abbekerk Gem**

Butter 7 days 35.07 30 days 139.63.

## A Beautiful Bull from this Great Cow

WILL HEAD OUR CONSIGNMENT TO THE  
**Sacramento Sale, June 5-6**

Did you ever start out to find a herd sire with just the right type, the right color, popular breeding, great records and at serviceable age? If you have ever undertaken that task you can appreciate the splendid value represented in this great young sire.

His dam is a 35 pound daughter of Changeling Butter Boy, sire of four daughters that average 36.04 and 139.87 in 30 days. His 100 A. R. O. daughters are young and much is in store for them.

His dam's dam is almost a 32 pound daughter of Tidy Abbekerk Prince, 85 A. R. O. daughters, nine of which are above 30 pounds.

His sire's dam is a 32 pound daughter of De Kol Burke, sire of eight above 30 pounds, and a half brother to Hengerveld De Kol.

His sire has a 34 pound three year old daughter, 138 pounds in 30 days and 932 pounds in a year as a two year old, all of which are California state records.

### A Splendid Son of King Mead of Riverside

is also consigned, out of a 100 per cent sister to the above cow. Her record is 26.76, and 107.98 in 30 days and her dam has 30.54 pounds. A wonderful combination of breeding, type and records and ready for service.

In addition to these we are including four beautiful cows and six well bred heifers, in calf to KING MEAD OF RIVERSIDE, PRINCE GELSCHÉ WALKER and KING MORCO ALCARTRA.

Consider well the opportunity offered in this consignment for a foundation herd, headed by one of the best young bulls ever offered in any sale.

**A. W. Morris & Sons Corp.**  
Woodland, Cal.

Mead of Riverside, Prince Gelsche Walker, and King Morco Alcartra. Probably the star of their consignment is the young bull Segis Pontiac Abbekerk, son of Segis Pontiac De Kol Burke and Changeling Tidy Abbekerk Gem. His dam made over 34 pounds butter in seven days last year



**Etta Changeling Sadie Vale**

Daughter of King Korndyke Sadie Vale 27th and a 22 pound three year old daughter of Changeling Butter Boy. She and six sisters by McAlister & Sons.

and came back this year with over 35 pounds in seven days and is still on test. She is a daughter of Changeling Butter Boy and a 31.70 pound daughter of Tidy Abbekerk Prince, and both sides of the pedigree indicate that this is one of the very best young bulls ever offered for sale in the West.

McAlister & Son can always be depended upon to offer a choice lot of cattle when they sell, and their offering in this sale is a notable one. Their star attraction this time may be the great 30 pound junior four year old Ontario Blond Pietje, although she should be closely pressed for top honors by Queen Rose Walker, daughter of Prince Gelsche Walker and a 27 pound daughter of a 32 pound cow. In this offering also are nine daughters of King Korndyke Sadie Vale 27th, two daughters of King Korndyke Sadie Vale 22nd, four daughters of King Segis Pontiac, and two daughters of King Segis De Kol Korndyke. These females are also out of wonderfully bred dams, many of them with high records ranging up to over 30



**Ontario Blonde Pietje**

A 30 pound junior four year old of a 35 pound sire. McAlister & Son.

pounds butter in seven days, and they are bred to It and King Winnie, both out of dams with records above 1200 pounds butter in one year. There are two splendidly bred young bulls also in the McAlister consignment, one of them by King Korndyke Sadie Vale 27th and out of a 29 pound daughter of King Segis 11th who is a 34 pound son of King Segis.

There are so many attractive ani-



**Copa Alcartra Karlray**

Daughter of King Morco Alcartra, son of Tilly Alcartra.

mals in the sale that the foregoing will serve only as a sample, for a study of the animals, catalog in hand, is the only way a full appreciation of the unusual quality of this sale can be gained.

The sale will be managed by California Breeders Sales and Pedigree Company, Sacramento, whose constructive sales policy is rapidly winning widespread confidence among buyers and sellers alike.

## Tales of a Traveler

Written for California Cultivator By C. A. Briggs

B. H. Crocheron, state leader of the farm adviser army says that the department of agriculture asked the farmers of the United States this year for a round billion bushels of wheat. To do this, California's quota called for an increase of 80,000 acres. The county farm bureau in charge of the work asked the farmers to devote one-tenth of the acreage usually put in barley to the growing of wheat as a patriotic war measure. To date 101,000 acres are enlisted for wheat production. Some good work for the farm bureaus.

Another stunt the farm bureaus have pulled off is the increase in pork production; again a patriotic duty. Breeding sows were being slaughtered because the large breeders were losing money under present day prices of feed and pork. The 450 farm bureau centers with 20,000 members took up the work of getting small farmers and fruit growers interested in keeping, where they had a few hogs, one or two more; where they

had no hogs, at least one good porker. Today partial reports from half of the 450 farm bureaus show 11,816 hogs getting fat to fight Germany that would without doubt have gone to the packer in an unfinished condition.

There are approximately 225 boy pig clubs in the state with over 2000 boy members, and they are doing things that open their "daddies' eyes. A number of the clubs have finished their competitive feeding tests and all have made a fine showing. Every boy without exception has made a success; every boy has made a profit over all costs of hog, feed and labor. This profit ranges from \$3.00 to \$12 per head.

A point of note is that the exact cost estimates kept show that a very large percentage of the pure bred hogs of all breeds have made gains over those made by the several hogs fed. The pure bred put on pork at a less cost per pound than the "just any old hog" kind.

## Increasing Efficiency by Alternating Teams

Hurdcroft Farm reports the following interesting illustration of the amount of work it is possible to do by using heavy teams and alternating teams during the rush season. This information was contained in recent letters to the Percheron Society of America:

"I may say that we have just finished seeding 170 acres of oats in three and one half days' time, with one drill and eight registered Percheron mares. One set of four mares started at daybreak and worked until noon, being replaced by the other four, which stuck to the job until dark.

"We have a 10½ foot drill which four good mares will handle nicely at

a good stiff walk. We found we were doing an average of approximately three acres an hour, or between 45 and 50 acres in a 16 hour day. Where the field was half a mile long we would make the round trip in 20 minutes, seeding about 1¼ acres each round.

"The first set of mares would go on at daylight, the second set relieving them at noon and going until dark. Will say three of the mares weighed better than a ton, the other five between 1800 pounds and a ton. They were all good walkers and seemed to handle the big drill with ease. Three of the mares have just dropped good, strong colts and the others are due shortly."

### Imp. King's Valet

and 35 of his daughters, 28 of them in milk.

### Borello's Golden Laddie

and all of his daughters, most of them in milk.

### 14 Daughters of Valet's King of L

son of Imp. King's Valet and Empress Lass, all of them in milk.

are some of the wonderful sires and groups that will feature the sale of the famous N. H. Locke Company herd of

## 130 Registered Jerseys 130

—AT PUBLIC AUCTION—

**Thursday, June 27, 1918**

**Lockeford, California**

Think of this splendid herd, containing five grand champion females, every one of which will be sold, 85 cows in milk and only one cow in the entire lot with a lost quarter, beautiful heifers bred in the purple and good enough individually to go out and win this fall in our best shows, and all of them to go to the highest bidder on sale day.

### BULLS

The four great herd bulls, Imp. King's Valet, Borello's Golden Laddie, Grace's Fox of Venadera, and Norma's Gertie's Son of L, will all be sold.

In addition there will be at least 25 choice bulls ready for service, ranging in age up to two years, out of the best cows in the herd and all sons of the great herd sires. Dairymen will have such an opportunity to secure high class registered Jersey bulls as had never before been offered in a public sale in the west, and will find the selection well worth a long trip from the remotest ends of the state.

Every animal guaranteed to be a breeder, tuberculin tested, and sold subject to tuberculin retest by the buyer. Every animal pledged to absolute sale without reserve or limit.

CATALOG FREE ON REQUEST  
MANAGEMENT

**California Breeders Sales and Pedigree Company**

J. M. Henderson, Jr., President

C. L. Hughes, Sales Manager  
Sacramento, California.

**Creamcup Holsteins** Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.



# The Very Best Cattle

we have ever consigned to public sale is our consignment to the

## Sacramento Sale, June 5-6

They comprise about 30 head of the cream of our herd and you know

# McALISTER & SONS

## HAVE "SOME HERD"

Nearly all of these elegantly bred, excellent individuals were born on our own farm and raised by us midst healthy surroundings and fed as calves on boiled milk and we

**Guarantee Every Head Free from Tuberculosis**

Every animal we sell is sold subject to the 60 day retest clause. We guarantee health.

If you have read anything about this sale, you must have been impressed with the unusually high quality of cattle offered. Read this list and you will say to yourself "they must be a wonderful lot." **THEY ARE.**

## How Would You Like to Own

**Ontario Blonde Pietje**, at four years 30.07 pounds butter in seven days. The youngest 30 pound cow ever sold at auction in the West. She is a "blonde peach" and is now milking about 85 pounds per day. Safe in calf to our great 37 pound herd sire, "IT."

**Queen Rose Walker**, a beautiful daughter of Prince Gelsche Walker from a 27.98 pound daughter of a 32 pound cow.

**May Korndyke Sadie Vale**, a daughter of the famous May Korndyke, for years the youngest 30 pound cow of the breed, sired by a 30 pound son of King Korndyke Sadie Vale.

Seven daughters of **King Korndyke Sadie Vale 27th**, one of whose daughters at six months old sold at public sale for \$1400, out of dams with records as high as 29 pounds.

Three daughters of **King Korndyke Sadie Vale 22nd**, whose two nearest dams average over 35 pounds.

Four daughters of **King Segis Pontiac**, one of the most famous sires of Holstein History.



Ontario Blonde Pietje



Queen Rose Walker

Two daughters of the great **King Segis De Kol Korndyke**, sire of the former world's champion 40 pound four year old; one out of a 28 pound four year old and the other from a 22.95 pound cow.

Two daughters of **King Segis 11th**, a 34 pound son of King Segis.

Two daughters of **Annie De Kol Model Segis**, a son of the greatest high record show cow of the breed.

Four daughters of **Juliana King Repeater**, a son of the former world's record three year old for yearly production, **Queen Juliana Dirkje**.

A daughter of **King Pontiac Mayflower**, a 31 pound son of King of the Pontiacs from a 27 pound granddaughter of King Segis.

A son of **King Korndyke Sadie Vale 27th** from a 29 pound four year old daughter of King Segis 11th and one from a 22.95 pound cow.

Many are bred to "IT," son of the first 37 pound cow, **Pontiac Clothilde De Kol 2nd**, the greatest transmitting cow of the breed. What will the harvest be?

The Quality is unsurpassed and Health is Guaranteed

# McALISTER & SONS

Chino, Calif.



## Field Notes from the Live Stock Men

W. M. Carruthers has purchased an under one year gilt, Brighton Farm Laurel of H. L. and E. H. Murphy. Mr. Carruthers plans to show it at State Fair in young herd.

Tietje Queen De Kol 2d 228996 has shown a production of 639.3 pounds milk containing 34,632 pounds fat in seven consecutive days. She freshened at the age of four years, ten months, 26 days. Her sire is Sir Pontiac Korndyke 6th 66229; her dam is Tietje Queen De Kol 95772. She was bred by W. L. Keyes, Deerfield, N. Y.; and she is now owned by A. C. Howe, New Hartford, N. Y. With this production she is the 32nd cow to obtain place in the list of Holstein-Friesian cows with productions exceeding 32 pounds fat in seven days. Computed on the 80 per cent basis the equivalent butter claimed for Tietje Queen De Kol 2d amounts to 43.29 pounds.—Malcolm H. Gardner, Supt. A. R.

Hog raisers who attended the annual meeting of the California Swine Breeders' Association at University Farm, Davis, May 16-17, had opportunity to learn results of a milo maize feeding experiment conducted by Prof. C. M. Vestal. The object of this experiment was to determine the value of milo maize fed in different forms. Lot one was fed whole milo heads; lot two received whole heads ground; lot three was fed milo grain, soaked; lot four was fed milo grain ground. In each lot the milo was hand-fed, but tankage was fed in a self-feeder.

J. E. Thorpe, Lockeford, says that he has an extra fine "futura" bunch of Durocs and plans to be at the state fair to fight for the honors.

W. S. Guilford and W. P. Dwyer of Butte City Ranch write as follows: "We were fortunate in saving all of our Shorthorn, Berkshire, Shropshire and pony records from the fire which destroyed our house, office, warehouse and men's quarters recently and no animals were burned. We have now placed a duplicate set of records in a safety deposit box—a

precaution every breeder should take."

K. P. Tola Joe, state champion two year old owned by Gottschall & Magruder of Ripon, has freshened with a heifer calf and is now on official test. There are now five other cows on the farm being tested.

Idleaze Pontiac Lass 238652 has shown a production of 715.5 pounds milk containing 33,987 pounds fat in seven consecutive days. She freshened at the age of four years, 14 days. Her sire is King of the Pontiacs 39,037; her dam is Pelham De Kol Urma 109314. She was bred by Stevens Brothers Company, Liverpool, New York; and she is now owned by J. W. Vaughan, St. Johnsville, New York. With this production she is the thirty-third cow to obtain place in the list of Holstein-Friesian cows with a production exceeding 32 pounds fat in seven days. Computed on the 80 per cent basis, the equivalent butter claimed for Idleaze Segis Lass amounts to 42.48 pounds.

Two Holstein-Friesian cows, Leafy Dawn De Kol 112845 and Sunrise Hengerveld Caroline 137314 have each produced about 32 pounds fat in seven days and are reported on the Holstein list by Malcolm H. Gardner, secretary of the Holstein-Friesian Association. Computed on the 80 per cent basis, this makes both these above 40 pounds of butter. They are both owned by Abbott & Clark.

A. O. Clement of Hawthorne owns a litter of pigs that when six weeks old weighed 36 pounds apiece, and at the age of nine weeks tipped the scales at 52 pounds; they are half Berkshire. It would be hard to find a finer lot.

Delaware College, recently sold a Guernsey, Anton's May King 27387, for \$7000 and his half sister Molly Rose O. D. 50617 for \$1750. Delaware College students in agriculture have used these animals for class room instruction and have been inspired with an enthusiasm for better dairy cattle

by working with these exceptional individuals.

Royal's Pearl 45209 completed her second record in class D, February 10, 1918, with 16,930.4 pounds of milk and 788.37 pounds of butter fat. She began Advanced Register work when only two years and one month old, making a record in class G of 485.88 pounds of butter fat, this record being over 100 pounds in excess of the average of her class at that time.

Leafy Dawn De Kol 112845 and Sunrise Hengerveld Caroline 137314 have each produced above 32 pounds fat in seven consecutive days. The former, whose sire is Sir Lilith Pauline De Kol 35727 and dam Annie Mooney Pietertje 69312, freshened at the age

of ten years three days, and is reported as producing 659.9 pounds milk containing 34,016 pounds fat. The latter, whose sire is Sir Hengerveld Barnum 49743 and dam Caroline Jucunda 73447, freshened at the age of eight years, eight months, one day, and is reported as producing 736.5 pounds milk containing 32,040 pounds fat. The former was bred by Byron Barstow, Earlville, New York, and the latter by Ralph Corbin, Bainbridge, New York; and they both are now owned by Abbott & Clark, Cortland, New York. With these productions mentioned, the former is the 34th cow to obtain place in the list of Holstein-Friesian cows with productions exceeding 32 pounds fat in seven days, while the latter is the 35th cow in the list.

## Save the Roughage



ACCORDING to the report recently made by United States department of agriculture the loss in grain straw and corn stover amounts to more than \$100,000,000 annually. Both of these products are disposed of most economically when fed to cattle in connection with some form of concentrated feed. Straw is especially valuable as a supplementary roughage for fattening cattle. Stover too, is an excellent feed for wintering cattle, especially mature breeding cows. Nevertheless, in many sections of the country where these products are abundant little attempt is made to take advantage of their value for these purposes.

Of an annual straw crop of approximately 120,000,000 tons it is estimated that only two-thirds is put to its best use—live stock production. Of the remainder a little more than one-half is sold or turned under, and the rest—15 per cent of the total crop—is burned. Burning is practically an absolute waste and although plowing under does contribute something to soil fertility, the benefit to the land is less than that which would be derived from the use of the straw to produce manure. "Of all systems of obtaining

permanent soil fertility," says the report, "none is so practical or easily available as that of feeding live stock."

The average value of all kinds of straw is placed at about \$5.00 a ton. In many sections, of course, no such price can be realized for it, and as a matter of fact only about eight per cent of the crop actually is sold. The figure mentioned, however, may be taken as representing the value to the farmer of straw if he will use it properly in his farming operations as feed or bedding.

By far the most economical method of handling corn is by ensiling, but as a matter of fact only 8.1 per cent of the acreage was put in the silo in 1914, the year in which these investigations were made. About 11 per cent was cut for green feed and 81 per cent allowed to mature for grain. It is in the last portion of the acreage that the greatest waste occurs. Stripping the leaves from the stalks which are subsequently burned, removing the stalk above the top ear only, leaving the stalk to stand in the field until the loss of leaves and leaching have removed much of their fertilizing value, are all unthrifty methods. Furthermore, almost four per cent of

# LOOK WHO'S HERE AT HOLLYWOOD!

**A Son of Judge Segis,**

*out of a 23 lb. dam, more white than black.*

**A Son of King Korndyke Sadie Vale,**

*out of a 16.7 lb. daughter of Sir Veeman Hengerveld.*

**A Son of Hollywood Lilith Palmyra,**

*out of a 30 lb. dam, who has a 32.7 lb. dam.*

Let us tell you more about these very highly bred male calves. They will not be here long. They will be worth your while looking up. Their value will increase very fast.

## HOLLYWOOD FARM

**F. S. Stimson, Owner**

**Hollywood, Washington**



the stover is burned, as though, instead of being a potential source of revenue it was merely a nuisance to be gotten rid of as a preliminary to plowing. In some states the percentage of stover that is thus thrown away is as high as seven or eight per cent and the total loss to the country from the practice is estimated at nearly \$15,000,000 a year.

To obtain satisfactory results from the feeding of farm roughages such as straw and stover, they must be combined with some form of concentrated feed. At the present time large quantities of such feed in the form of cottonseed meal and cake, corn, molasses, peanuts and beans are exported for the use of European feeders. If the straw and stover that are now wasted were employed to feed more cattle, these concentrates could be consumed at home. The result would be a tremendous saving not only in the cost of producing beef but in the cost of enriching the soil as well. In 1914, for example, about 1,000,000 tons of cottonseed meal, half the total production, were applied directly to the soil as fertilizer. If this had been fed to cattle instead, three-quarters of the fertilizing value would have been returned to the soil as manure. The loss of the other fourth would have been far more than counterbalanced by the profit on the meat produced economically by the meal and the necessary roughages. Much the same thing is true of the other oil meals.

#### JERSEY CHAMPIONS IN CALIFORNIA

The American Jersey Cattle Club sends list of Jersey class champions in California. They are:

Under Two Years: Jewel of Venadera 275316, owned by Guy H. Miller, one year 11 months, 8017.8 pounds milk, 442.40 pounds fat.

Two Junior: Manie Owl 261075, D. F. Conant, two years, three months, 7830.3 pounds milk, 435.14 pounds fat.

Two Senior: Interested Jap's Santa 296928, University of California, two years, 11 months, 9052.5 pounds milk, 588.16 pounds fat.

Three Junior: Goldie of Venadera 243321, Guy H. Miller, three years, three months, 8910.1 pounds milk, 469.50 pounds fat.

Three Senior: Jewel of Venadera 275316, Guy H. Miller, three years, six months, 10,262.6 pounds milk, 609.54 pounds fat.

Four Junior: Sultan's Golden Blue Belle 213751, L. J. Belknap, four years, two months, 8979.1 pounds milk, 525.51 pounds fat.

Four Senior: Mermaid's Fern 269301, University of California, four years, seven months, 9657.6 pounds milk, 536.80 pounds fat.

Over Five Years: Pearl of Venadera 208644, Guy H. Miller, eight years, two months, 11,723.9 pounds milk, 702.70 pounds fat.

One hundred twenty cows on test in February, 1918.

#### MARKETING OF BRED SOWS

Reports from the large live stock markets to the United States department of agriculture indicate that the rumor of a general tendency to sell bred sows for slaughter is without foundation. At most of the stockyards the percentage of sows docked for advanced pregnancy has decreased since the first of the year and is smaller for the first three months of 1918 than for the corresponding months of 1917. At a few markets a larger percentage of sows than normal showed advanced pregnancy, but this appears to have been due to delays in getting cars for shipment. Such a showing, in normal times or in the absence of special propaganda for increasing the national meat supply, probably would not have been noticed.

#### OFF TO ASIA

R. S. Valle, for many years connected with the citrus experiment station at Riverside, is now on his way to Northern Persia. He is going as an agriculturist under the American committee for Armenian and Syrian relief. He will remain one year or longer. His work is not definitely lined out but it is to be one of service in increasing foodstuffs. We have promise from Prof. Valle that if mail service and other conditions permit, he will write for Cultivator readers of his experiences.

## We Can Look You in the Eye

when we come face to face at the opening of this great sale, after you have had an opportunity to examine the cattle and study the catalog, and again state to you without fear of contradiction that this is the finest offering of registered Holsteins ever made in a two day sale in California.

Nine leading California breeders, A. W. Morris & Sons, Woodland; McAlister & Son, Chino; Gotshall & Magruder, Ripon; Pacific States Corporation, Tulare; The J. S. Gibson Company, Williams; Henderson Company, Sacramento; Buena Alta Herd, Oakland; Bonita Stock Farm, Lodi; and Rosamaines Rancho, Riverside, have consigned a total of

### 124 Registered Holstein Cows and Heifers 15 Registered Holstein Bulls

including over 30 fresh cows, a large number of cows and heifers heavy with calf to the greatest sires in the state, daughters of 30, 32, 33, 34, 35, 37, and 40 pound bulls, sons and daughters of cows with records up to over 35 pounds butter in seven days, representing the most famous producing families of the breed, to be sold without reserve or limit in the

## Fourth Sacramento Sale STATE FAIR GROUNDS, SACRAMENTO Wednesday and Thursday, June 5-6, 1918

Space will not permit mention of all of the attractive individuals in this sale, but the following is a sample:

#### FEMALES

ONTARIO BLOND PIETJE, a 30 pound junior four year old daughter of a 35 pound sire.  
A DAUGHTER OF KING SEGIS PONTIAC JANNEK, out of a great 27.96 pound three year old, and bred to the \$6500 bull, King Korndyke Pontiac 20th.  
A DAUGHTER OF PRINCE GELSCHIE WALKER, out of a 27 pound daughter of a 32 pound cow.  
A DAUGHTER OF PRINCE ALCARTRA KORNDYKE, son of Tilly Alcartra, and she made 729.6 pounds butter in one year as a junior two year old.  
A 29 POUND DAUGHTER OF SIR PONTIAC RAG APPLE KORNDYKE, and her young son by the 31 pound sire, Lakeside King Segis Alban De Kol.  
NINE DAUGHTERS OF KING KORNDYKE SADIE VALE 27th, one of a 29 pound dam, one out of a 27.24 pound junior three year old daughter of Changeling Butter Boy, one out of a 22 pound three year old daughter of Changeling Butter Boy and a 30 pound daughter of Tidy Abbecker Prince, one out of a dam that made 608 pounds butter in one year as a junior four year old, one out of a 17 pound two year old daughter of Count Segis, and the balance out of good dams.  
THREE DAUGHTERS OF KING KORNDYKE SADIE VALE 22nd, one out of May Korndyke, for several years the youngest 30 pound cow, and bred to IT, one out of a 20 pound dam, and one out of a daughter of King Segis Pontiac Zella.  
FIVE DAUGHTERS OF KING SEGIS PONTIAC, out of choicely bred dams.  
THREE DAUGHTERS OF KING SEGIS DE KOL KORNDYKE, one out of a 28 pound daughter of King Walker Segis, one out of a 22.95 pound four year old granddaughter of Pontiac Hengerveld Parthena.  
A 20 POUND THREE YEAR OLD DAUGHTER OF PRINCE GELSCHIE WALKER, bred to the 40 pound sire, Prince Alcartra Korndyke.  
A DAUGHTER OF PRINCE GELSCHIE WALKER, out of a 19.25 pound three year old that made 549.53 pounds butter in one year as a junior two year old.  
A 26.41 POUND COW and her daughter by Sir Korndyke Veeman Hengerveld, 30 pound son of Sir Korndyke Pontiac Artis.  
A 23.97 POUND FOUR YEAR OLD granddaughter of King Segis Hengerveld.  
TWO DAUGHTERS OF PRINCE ARAIA WALKER, son of Prince Gelschie Walker and Aalia De Kol 3d, both bred to a 34 pound bull.  
A DAUGHTER OF A 33 POUND SIRE and her daughter by a son of Prince Gelschie Walker.  
A GRANDDAUGHTER OF HENGERVELD DE KOL, bred to a 32 pound bull.  
A DAUGHTER OF ADMIRAL WALKER PRILLY, out of a dam that made 847.55 pounds butter in one year as a four year old, bred to a 32 pound bull.  
TWO GRANDDAUGHTERS OF KING COLANTHA CLOTHILDA, bred to the great King of the Black and Whites.  
TWO DAUGHTERS OF MODEL LYONS SEGIS, one bred to King of the Black and Whites, the other to his son, King Lillian Walker Segis.

SEGIS PONTIAC ABBEKERK, son of Segis Pontiac De Kol Burke and out of a 35.07 pound daughter of Changeling Butter Boy and a 31.70 pound daughter of Tidy Abbecker Prince. A beautiful individual, mostly white in color, and one of the very greatest young sires ever sold in the west. The 35 pound record of this dam was made this spring, exceeding her last year's record of over 34 pounds butter in seven days.  
A SON OF KING KORNDYKE SADIE VALE 27TH, out of a 29 pound four year old daughter of the 34 pound son of King Segis, King Segis 11th. A splendid young bull of wonderful breeding.  
A SON OF KING MEAD OF RIVERSIDE, out of a 26.76 pound daughter of Changeling Butter Boy and a 30 pound daughter of Tidy Abbecker Prince.  
A SON OF THE 34 POUND SIRE KING PONTIAC

A 23.98 POUND DAUGHTER of King Pontiac Ruby Burke.  
TWO DAUGHTERS OF KING MORCO ALCARTRA, son of Tilly Alcartra.  
TWO DAUGHTERS OF PRINCE JULIANA DE KOL WALKER, out of good dams.  
A 20 POUND FOUR YEAR OLD DAUGHTER of Colantha Sir Pontiac Aagie.  
A 22.87 POUND COW well along with calf to King Mead of Riverside.  
A DAUGHTER OF KING KORNDYKE PONTIAC, out of a daughter of King Mead of Riverside that made over 21 pounds butter in seven days and 751.1 pounds butter in one year as a two year old.  
A DAUGHTER OF SEGIS PONTIAC DE KOL BURKE, out of a 22 pound four year old granddaughter of Pontiac Korndyke.  
A 19 POUND DAUGHTER of Beauty, Pietertje Beets, bred to a 31 pound sire.  
A 19.54 POUND GRANDDAUGHTER of Colantha Johanna Lad.  
A DAUGHTER OF KING SEGIS PONTIAC EMPEROR, out of a 25 pound cow that made 770 pounds butter in one year.  
A GRANDDAUGHTER OF KING OF THE PONTIACS, out of a 28 pound dam and bred to it.  
A DAUGHTER OF KING PONTIAC MAYFLOWER, out of a 27 pound granddaughter of King Segis.  
TWO DAUGHTERS OF KING SEGIS 11TH, who is a 34 pound son of King Segis.  
A FOUR YEAR OLD DAUGHTER OF PIETERTJE HENGERVELD SEGIS, and she made 22.12 pounds butter in seven days as a junior two year old.  
RIVERVIEW BRACELET BRETT, first prize two year old at 1917 California State Fair, Fresno Fair, and San Francisco Land Show.  
A DAUGHTER OF LAKESIDE KING SEGIS ALBAN DE KOL, out of a 25 pound four year old granddaughter of King of the Pontiacs.  
A DAUGHTER OF A 29.61 POUND COW bred to King of the Black and Whites.  
A 19.18 POUND TWO YEAR OLD, bred to King of the Black and Whites.  
A DAUGHTER OF ARTIS PRILLY OF RUSSEL FARM, out of a 26 pound daughter of Artis De Kol Walker.  
A DAUGHTER OF MODEL LYONS SEGIS, out of a 24.78 pound granddaughter of Johanna Rue 3d's Lad.  
A DAUGHTER OF SEGIS CREAMCUP PONTIAC, son of Segis Pontiac De Kol Burke and a daughter of Ignaro De Kol that made 877.3 pounds butter in one year as a four year old, bred to the 40 pound sire of Prince Alcartra Korndyke.  
A DAUGHTER OF KING KORNDYKE PONTIAC, out of a granddaughter of Ignaro De Kol, bred to Prince Alcartra Korndyke.  
A 26.43 POUND COW bred to the 40 pound sire, Prince Alcartra Korndyke.  
AN 18.41 POUND THREE YEAR OLD that made 620.47 pounds butter in one year as a junior two year old.  
A DAUGHTER OF COUNT SEGIS, bred to King Morco Alcartra, son of Tilly Alcartra.

#### BULLS

NETHERLAND SEGIS 3D, out of a beautiful 26.86 pound four year old dam.  
A SON OF KORNDYKE SADIE VALE 27TH, out of a 22.95 pound dam that is three-quarter sister to the 41 pound cow, Valdesa, Scott 2nd.  
MODEL DOMINO GLISTA, son of the 30 pound sire, Model King Segis Konigin, and out of a 21.72 pound three year old daughter of the 30 pound cow, Glista Cora.  
A SON OF KING PONTIAC SEGIS INKA, out of a 25.70 pound four year old daughter of King Pontiac Calypso.  
A SON OF KING PONTIAC SEGIS INKA, out of a 25.71 pound three year old granddaughter of King Walker.  
A NUMBER OF OTHER HIGHLY BRED YOUNG BULLS that round out one of the finest consignments of bulls ever offered in a California sale.

Every animal in this sale is positively guaranteed to be a breeder, is tuberculin tested AND SOLD SUBJECT TO TUBERCULIN RETEST BY THE BUYER.

The cattle will be on exhibition at California State Fair Grounds, Sacramento, the place of sale, two days prior to sale. Intending purchasers are invited to come and look them over before sale, and we will extend every facility for gaining complete information on each animal to be sold.

Write for Catalog now. It is free.

#### MANAGEMENT

## California Breeders Sales and Pedigree Company

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Auctioneers—Col. Ben. A. Rhoades; Harold B. Rhoades



## Northern California Notes

Written for California Cultivator By W. S. Guilford

A daughter of a 33 pound bull out of a 22.85 pound 4 year old granddaughter of King of the Pontiacs.  
—her beautiful young daughter by Prince Gelsche Walker.  
—A granddaughter of Hengerveld De Kol out of a daughter of King Segis Pontiac.  
—A daughter of Admiral Walker Prilly out of a 4 year old that made 847.55 pounds of butter in one year.  
—and four other choicely bred young cows and heifers.  
—with two splendid young bulls.

make up our  
Consignment of

## Registered Holsteins to the Fourth Sacramento Sale Sacramento, June 5-6

We feel certain that our first consignment will reflect credit upon our herd, and that whoever is fortunate enough to buy these splendid young animals will do so with profit and satisfaction to themselves. All of the females except one are bred to our herd sire

### SUPREME GLISTA PIETJE

whose sire is by the best son of the great transmitting cow Pietje 22nd and is out of a daughter of Duchess Ormsby Butter King that made 18,623.7 pounds milk and 827.31 pounds butter in one year.  
His dam is Glista Eglantine, 32.39 pounds butter in seven days, who in turn is out of Glista Omricon, 31.60 pounds butter in seven days, and she is sired by Prince Ybma Spofford 6th, six of whose 11 daughters have records from 30 to over 35 pounds butter in seven days, one of them over 1000 pounds butter in one year.  
Supreme Glista Pietje has a splendid lot of young daughters growing up in hands where they will be given the fullest opportunity, and his offspring will be sought after at substantial prices. Don't overlook this opportunity to buy choice young cows bred to him.  
See our consignment on the farm before sale if you wish.

**Bonita Stock Farm**  
Lodi, California



## Santa Anita Rancho Anoakia Breeding Farm Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

### Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce that amount of butter in one year.  
We have a few of his sons, out of good record dams, for sale.  
Inquiries or orders by mail will receive careful and prompt attention.

**SANTA ANITA RANCHO**

**Santa Anita, Cal.**

Anita M. Baldwin, Owner

W. H. Taylor Supt.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

## Tagus Ranch consigns to



## Pascoe Segis Pontiac

HER SIRE: King Segis Pontiac Jannek, who is by King Segis Pontiac and out of a 29.71 pound four year old daughter of Korndyke Queen De Kol's Prince, and she is dam of the sire of the 40.13 pound cow Albina Josie.

HER DAM: Forest View Wayne Korndyke, a 27.96 pound three year old granddaughter of King Segis Pontiac and De Kol 2nd's Butter Boy 3d.

SHE IS BRED TO: King Korndyke Pontiac 20th, the \$6500 son of Miss Valley Mead De Kol Walker.

We ought not to sell this heifer, but we yielded to the request to offer some of the very best heifers in our herd, the others being

TWO VERY CHOICE DAUGHTERS OF PRINCE JULIANA DE KOL WALKER, both of them bred to King Sadie Vale Rose, whose three nearest dams average 33.82 pounds butter in seven days, and he is a son of King Korndyke Sadie Vale. Both of these heifers are out of well bred A. R. O. dams.

A DAUGHTER OF KING KORNDYKE SADIE VALE 22ND, who is a 30 pound son of King Korndyke Sadie Vale, and a double grandson of King Segis De Kol Korndyke. This heifer is just now of breeding age and will be sold open.

We like the idea of offering only high class cattle in public sales, which solely is responsible for our decision to part with these good heifers.

## Pacific States Corporation

Tagus Ranch

Tulare, Cal.

### ANOTHER DRY YEAR

THE normal rainfall at Red Bluff in the Sacramento Valley to May 15 is a little over 24 inches, at Sacramento about 20 inches. At Red Bluff the rainfall for the season totals about 12 inches, at Sacramento 10.61. Last year the rainfall at these points was about seven inches less than normal.

Dry years cause crop shortages, but they also make better farmers. Deep plowing, thorough cultivation and all kinds of soil moisture conservation methods are essential if crops are to be raised. And every available means for irrigation is made use of because it pays to do this.

There are good crops of grain on summer fallow land that was well worked last season and planted early. This had some "hold over" moisture from last year and the benefit of all of this year's rainfall.

There are short crops on some of the best river front and ridge winter sowing lands. Some grain has been irrigated. Some farmers are planning to run rough contour checks in their grain fields this fall and give the land a thorough soaking with irrigation water every fall as an insurance proposition. They believe that dry years

are of sufficiently common recurrence to warrant this.

The value of fall plowing land to be used for corn, beans and such crops is strongly emphasized this season. We have a field at Butte City Ranch that shows a good moisture content now in spite of the fact that we had no overflow from the river this year. Last year this field was plowed in the spring and produced very little because of lack of moisture. This season it was plowed early last fall, harrowed and disked later, replowed and redisked this spring, and is being disked some more now before planting to corn. There is a far better prospect for a crop now than at this time last year.

That more water for irrigation must be stored on the headwaters of the Sacramento River and its tributaries is no longer a question that is argued. Just how it can best be provided is the problem.

### BIG RICE ACREAGE PLANTED

The largest acreage ever in rice in the Sacramento Valley has been planted; most of it has been watered once, May 18; some of it is up and making good growth. Conditions for providing irrigation works and preparing the land for the crop have been ideal, not only during the spring season but through all of last winter. A dry year suits the rice men, at least in so far as the planting of the crop is concerned. A plentiful supply of irrigation water and an open fall for harvesting will insure a bumper crop.

Rice has been planted on better land this year than in previous years, that is, a larger percentage of the acreage is made up of lands that have been cropped in grain in former years. Of course the bulk of the acreage on the west side of the Sacramento is on the heavy clay lands that have been used largely for pasture and that are very risky grain farming propositions taken one year with another. But in addition to these many areas of pretty fair summer fallow grain lands have been put in rice this season.

The rice growers of the Sacramento Valley will make a big contribution to the food supply of the world this season.

### HIGH HAY PRICES IN PROSPECT

There seems to be a certainty of high prices for hay for another year. Large fields of grain that promised good yields were dried up by the north wind in April, and the poor grain that would have made hay will now make nothing but a little pasture. Fields that were not hit quite so hard will make a little grain, but the straw is so short that it would not pay to bother with it for hay. And with all other feeds high in price alfalfa must continue to be so.

### BUY PURE BRED STOCK NOW

With all kinds of feed for live stock high in price now is the time to get started in the pure bred live stock business. Good registered stock will give better returns for feed consumed than grades or scrubs, and when feed prices are lower—as they are sure to be some time—there will be particularly keen demand for live stock of all kinds. By getting a few young animals now a valuable stock will be grown at comparatively small expense. Many farmers are selling big herds of grades and replacing them with smaller herds of pure bred.

### RED CROSS

The Red Cross is the mightiest of all charities, the love and pity of all men made supremely efficient. It not only seeks to alleviate the cruelties of war; it is the expression of those human sentiments that some day will put an end to war.—Dr. Frank Crane.

If the soldiers are willing to serve in the trenches, to dig ditches, build railroads and risk their lives, many civilians can well afford to spare a part of their time to serve in the furrows and in the harvest fields.—Secretary of Agriculture.

If you believe in peace you will fight to get it.



### Hanford, Kings County, Cal.



# HEREFORDS

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Esposito - California  
Breeding Stock for Sale

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Anxiety and Beau Brummel Breeding  
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Office: 216 Hobard Bldg.  
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## Herefords

Over 100 choicely bred females in herd. Have been selling to cattlemen for years.

**W. J. Bemmerly**, Woodland, Cal.

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## Registered Herefords

Herd and range bulls reasonable. Largest Hereford herd in California.  
**W. D. DUKE**, Likely, Modoc Co., Cal.

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**Geo. Watterson, Owner**  
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Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

## Kansas Germ Free Fluid Vaccine For BLACKLEG

This seal is our word of honor and your protection. If it is not on the label of every bottle don't use it. Only the original carries this signature.



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AMARILLO, TEXAS

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Made by **Dr. O. M. Franklin, Originator**  
Holds the record of immunizing more than a Half Million Calves against Blackleg with

— only one handling of each calf — has stood the test of time—easy and safe to use—cannot give the disease to calves or spread it in pastures.

Leading cattlemen use it exclusively and recommend it to their friends—ask any of them or write to the nearest office for references and free Booklet on Blackleg.

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## AYRSHIRES

The Economical Breeds  
when Feed is High

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A Few Would Give You  
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Makes Special Offering of

### Registered Shorthorn Bulls

Vigorous Animals Grown  
Without Pampering **\$250** and up

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Sired by Onward 4th by Epochal;  
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**\$35 each, 3 for \$100**

Shetland Ponies and Outfits from \$60 up

**Butte City Ranch** Box C, Butte City, Glenn Co. Cal.  
W. P. Dwyer and W. S. Guilford, Owners

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A large herd of selected stock to choose from. Everything sold is guaranteed as represented. Why send East for breeding stock when we can supply your needs. Save time and money by writing us for particulars.

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Members Pacific Coast Hereford Breeders Association



## ECONOMY STOCK POWDER FOR HOGS, HORSES, CATTLE AND SHEEP

Eliminate Bloating, Abortion and any derangement of the system by feeding Economy Powder regularly. Will also check and eliminate calf scours.

WRITE FOR FREE SAMPLE AND STOCK BOOK.

**ECONOMY HOG AND CATTLE POWDER CO.**  
Hearst Bldg., San Francisco, Cal.

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT

**Hauser Packing Co.**

**Los Angeles**

# Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Cyclamen for Seed

Will you please give culture and care of cyclamen from seed, soil, location, in fact anything pertaining to their care?—Subscriber, Ceres.

The growing of cyclamen is not so simple as most other plants. It is usually left to the professional. In any case, glass house, or conditions giving plenty of light and warmth at all times are necessary. From Bailey's Cyclopaedia of Horticulture we take the following instructions:

"It is preferable at all times to begin the culture of Persian cyclamen with seeds, sown in the early winter months. Grow on without any check for the following year. They should bloom freely about 15 months from planting. Old tubers, such as are offered in fall with other florists' bulbs, rarely give satisfaction as compared with a packet of seeds. It is not the nature of the plant to have all its roots dried off as if it were a hyacinth or tulip. It will be found that cyclamen seeds require a long time in which to germinate, — often two months. This is due to the fact that the seed produces a bulb or corm before leaf-growth is visible. As soon as two leaves are well developed, place the plants around the edge of four- or five-inch pots until every one is large enough for a three-inch pot. The roots are produced sparingly in the initial stages, and too much pot-room would be fatal at the start. By the middle of summer another shift may be given, and in September all will be ready for the pots in which they are to flower,—five- or six-inch pots, according to the vigor of the plants. It will always be found, however, that there will be a certain percentage that will not grow, no matter how much persuasion is used. These may be thrown away to save time and labor early in the season. In the house they should have the lightest bench. It is impossible to grow them in warm, shady house. About 50 degrees at night is the ideal temperature when in flower. The best soil is a fresh, tufty loam, with a fourth or fifth of well rotted horse manure, to which add some clean sand if the soil is heavy. At all times, the pots should be well drained."

### Mulefoot Hogs

Where did the mulefoot hog originate? Why is not more heard of them? Have they any market advantage on account of their feet?—Subscriber, Anaheim.

Ewing's Pork Production says, "This is a rather recent American breed of uncertain origin. The foundation stock used was probably Berkshire, Poland-China and native blood. The first members of the breed were mutations in which the cloven foot gave way to the one-toed condition, such as prevails in the horse and mule, hence the name." It was originated in Ohio. It resembles the Berkshire in body but has pendent ears, smaller than most breeds, running 450 to 500 pounds. They are not in any sense cholera immune, and as yet are not generally received by the hog breeders.

### Fly Repellent

Is there something that can be spread around the barnyard, manure, cow corrals and hog pens to prevent the flies from hatching? They are very troublesome in the house. I have tried fly catchers but they are not satisfactory.—Subscriber, Anaheim.

At the best, the control of flies where there are open manure pits and corrals, is difficult. Prof. Herms of the state university has given intensive study to this subject and it has been treated in former Cultivators, but perhaps the best information may be had by writing University of California Agricultural Experiment Station, Berkeley, and asking for Bulletin 215, "The House Fly in Its Relation to Public Health." In this bulletin Prof. Herms gives formula for a com-

pound which will destroy the larvae of flies if sprayed on manure piles. Great care should be exercised in its preparation and use as it is corrosive and poisonous.

Formula: Dissolve one-half pound caustic potash in one half pint water, let stand several hours until dissolved and cold; add this to one quart of raw linseed oil contained in an earthenware vessel, stirring the while, and repeat the stirring process at intervals of about one hour for from four to five hours, then let stand over night. This process will result in a soap to which must now be added slowly, while stirring, one and a quarter quarts of commercial cresol which will gradually dissolve the soap. Three or four days may be necessary to effect complete solution. For use, this compound must be diluted at the rate of one part to 30 of water. The quantity given above will produce from 12 to 15 gallons. Apply to the manure pile or garbage. Poultry must not be permitted to feed upon the larvae thus treated.

### Ayrshires for Range

Will you give your opinion of Ayrshire cattle on a hilly range, for beef purposes? Also, I have two acres within the reservation, bought by me from the parties who had a deed from the government before reservation was set aside. How many cattle can I run on the reservation, how much does it cost per head, and how do I go about it to get permission to run them there?—Subscriber, Orange.

The query as to suitability of Ayrshires for range beef purposes was referred to J. W. Clise who answers: "It is unnecessary to say that we do not recommend the Ayrshire as a beef animal, but of the four dairy breeds she comes the nearest to filling your requirements. Produced in the western part of Scotland, in the hilly country where the vegetation is rather scarce, she will thrive where the other breeds will make a failure. In the eastern part of this state where the rainfall is light and conditions similar to yours, the Ayrshire is the only dairy animal that will thrive on the range. She will not take on fat while milking, but fattens easily after being dried up. The beef is red and the bone small. She ranks with the Short-horn in quality of beef."

As to running cattle on forest reservation, this is a matter which must be referred to the forest supervisor of your district. The number of range animals allowed on each reservation each season is definitely established by the department of the interior, but all arrangements as to price, permission to range, etc., are made with the local supervisor. If you write U. S. Forestry Service, Federal Bldg., Los Angeles, giving name of forest reserve, you can secure office address of your district supervisor.

### Egg Eating Hens

I noted in the Cultivator some time ago Mrs. Koethen gave information regarding correcting the habit of egg eating hens. Have found this problem is easily solved by feeding them plenty of lime. My method is to break lime up with a hammer.—W. Helfrick, Palmdale.

### Feijoa not Bearing

I have a tree, feijoa I think. In any case it has light green silver leaves and beautiful red flowers. The tree is seven years old, blooms every year, but it never fruits.—Subscriber.

The feijoa is a freaky tree. Practically all we have planted are seedlings. From reports received from most of these plantings it appears that more than half of the trees are non-bearers. We believe budded or grafted trees will succeed these and their fruit prove one of the smaller commercial factors in orcharding. We believe there is no way to force this tree to bear.

### Moving Rose and Wistaria

I have two rose bushes and a wistaria to move. What is the best time to do it, and how? Do they have to be cut back? — Subscriber, Owensmouth.



It is possible that by cutting back a good bit they can successfully be moved, providing great care is taken to take up large balls of earth. If, however, the ball should be broken it is probable the plants might die. The best time to replant is in dormant season, December to February. If it is a mild winter roses may fail to become dormant, but with care they should live if reset at that time. After cutting back and resetting heavy irrigation should be given to firm the dirt around the roots in the new location.

#### Nearer Home

Will some one send me the remainder of the verses in which are the following lines:

"One sweetly solemn thought  
Comes to me o'er and o'er?"  
—Subscriber, Nipomo.

These lines are from "Nearer Home," written in 1852, the most famous poem by Phoebe Cary (1824-1871).

One sweetly solemn thought  
Comes to me o'er and o'er—  
I'm nearer home today  
Than I've ever been before.

Nearer my Father's house,  
Where the many mansions be;  
Nearer the great white throne;  
Nearer the crystal sea.

Nearer the bound of life,  
Where we lay our burdens down;  
Nearer leaving the cross;  
Nearer gaining the crown.

But lying darkly between,  
Winding down through the night,  
Is the deep and unknown stream,  
That leads at last to the light.

Father, perfect my trust!  
Strengthen the might of my faith.  
Let me feel as I would when I stand  
On the rock of the shore of death:

Feel as I would when my feet  
Are slipping over the brink;  
For it may be, I'm nearer home—  
Nearer now than I think!

#### Pure Bred

I have pure bred Jersey which will have calf from pure bred bull. Will wish to sell this heifer. How much may one reasonably ask for such calf? —Subscriber, Los Angeles County.

The value of such calf depends more upon the performance of its ancestors than upon the fact that it is pure bred. Pure bred calves have been sold above \$50,000 and again "pure bred" have been vealed. Dairymen must learn that the fact that a calf is registered is not conclusive proof of its power to produce. It is a case of works and not of faith. This is where official tests and cow testing associations are doing a wonderful work for the dairymen who have pure bred or even grade stock. If the cow is known to be a great producer and comes from a well known producing strain it should be worth \$25, \$50, \$100, or even more, for some of our sales of pure bred stock have shown calves running from these prices to around \$250. We may also add that there are pure bred which are not capable of registration, for some reason registry has been lost. This of course materially reduces the sale value of such calves.

#### Moving Persimmon

Is it possible to move a persimmon four years old? It is now very small because it has never had very good care. —Subscriber, Los Angeles County.

Unless this tree is one of a particularly valuable strain of persimmon we would prefer to get a thrifty young tree from the nursery rather than endeavor to move it. It is very probable that in dormant season it could be moved and kept alive, but a stunted tree is never very good property.

#### Fig Sprouting

Fig tree sprouts continually, sprouts growing even higher than the tree if they are not pulled off. Should these trees be pruned?—Subscriber.

Sure, prune off those suckers, that is unless the tree is injured and is stunted so that you need a new tree entirely, then begin to reduce the top and allow one of these suckers to make the future tree, ultimately sawing off the old trunk and all other suckers, waxing the ends and allowing the wound to heal over. Then any suckers which may come later should be kept reduced.

#### Curl Leaf

What is the cause of curl leaf in peach trees?—Subscriber.

Curl leaf is caused by a fungus which grows in the tissues of the leaves. It is easily controlled by spraying with Bordeaux in the winter when trees are dormant, or at least before leaving out. There is no cure for the leaves which are now showing the trouble.

#### Severe Pruning

Are fruit trees spoiled for always if they are pruned too much, nothing being left but the large branches?—Subscriber.

"Too much" is too indefinite a term to give definite answer. Some deciduous fruit trees require severe pruning for the first three years of their growth in orchard. These three years are required to build a foundation which will hold up the crops of the future. Other deciduous trees, like walnuts and figs, require but little pruning and may have been severely injured.

#### Grape Mildew

How can I prevent mildew on grapes?—Subscriber.

Apply sulphur early in the season when leaves are just starting and occasionally thereafter. Method of application is with power plant in large vineyards, with small bellows in lesser areas, or the sulphur may be placed in porous sacks which are shaken over the vines. This should be done in the morning when leaves are moist.

#### Rattlesnake Poison

What is the remedy for rattlesnake bites?—Subscriber.

The first remedy should be lancing and free bleeding at point of wound. Sucking the wound so as to remove all poison as quickly as possible is also recommended. This should be followed by the application of permanganate of potash. The victim should be kept in motion as much as possible, and in no case should he be allowed to go to sleep. While these preliminaries are being attended to, competent physician should be summoned. Don't administer large doses of whiskey or other alcoholic without advice of physician, especially to child, for

death from alcoholic poisoning is even more sure than from snake poison.

#### Thompson Seedless and Figs

I am thinking of setting out six acres of Thompson Seedless grapes and would like some information regarding them. Also I would like to know about figs, the kind that would be the most profitable and the age when I could expect a crop from them. —Subscriber, Turlock.

Perhaps the best method of planting Thompson Seedless vines is to plant them six feet apart in the rows and the rows 12 feet apart. This arrangement requires less wire than when planted eight feet by eight or ten by ten, and the cultivation is less expensive. The vines should be staked the second year and the vine which is then trimmed to one stem, tied to the stake. After the second year the vines should be trellised.

The Calimyrna is the best fig to raise and should be planted 30 feet apart. Plant one capri fig to every 30 or 40 Calimyrna trees. These can be planted in any out of the way place and may be planted close together, say 20 feet. Figs will begin to bear a little the third year but not a paying crop till seven or eight years old. —J. W. M.


#### THE BUSINESS TEN

1. Honor the chief. There must be a head to everything.
2. Have confidence in yourself, and make yourself fit.
3. Harmonize your work. Let sunshine radiate and penetrate.
4. Handle the hardest job first each day. Easy ones are pleasures.
5. Do not be afraid of criticism—criticise yourself often.
6. Be glad and rejoice in the other fellow's success—study his methods.
7. Do not be misled by dislikes. Acid ruins the finest fabric.
8. Be enthusiastic—it is contagious.
9. Do not have the notion success means simply money-making.
10. Be fair and do at least one decent act every day in the year.

—Marconi Service News.

Over-statement, in reaction, creates commensurate resistance.

Blatancy does not command respect.



**DR. HESS DIP and DISINFECTANT**

A Dip that is standardized, of uniform strength and **GUARANTEED**. One gallon makes 70 gallons of dipping solution.

**For Scab, Ticks and Skin Troubles**

Dr. Hess Dip and Disinfectant cleans and makes the skin healthy. It is more than a Dip—it is also a Disinfectant. Use it freely about stables, hog pens and poultry houses to destroy disease germs and maintain good health conditions. Also for home use, in garbage cans, sinks, cesspools. Sold by 28,000 dealers on a money-back guarantee.

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has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

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All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.

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**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

### AVOCADOS

The Spinks is easily the best variety that has fruited in California. It combines the good points of all the others with none of their defects. A rugged, prolific tree and a superb fruit. Field grown trees of this and other well known varieties, including the Rey, Linda, Sharpless, Fuerte, L. X. L., Caribou and others, \$3.00 to \$5.00 each. Liberal discount in quantities. W. A. Spinks, Duarte, California.

**For Sale**—Extra fine Valencia trees, ¾ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**Avocado Trees**, budded, Fuerte variety; a hardy, vigorous grower, bears a rich, delicious fruit. Eighty per cent of all avocado trees planted this year were of the Fuerte variety. Our trees are field grown, straight, symmetrical, with large balls. Send for illustrated, descriptive circular, showing prices. WEST INDIA GARDENS, Altadena, California.

**For Sale: Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencia and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., P. 3110, Los Angeles.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Valencia Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**For Sale**—About 25,000 uncultured lemons, Navel and Valencia of the very highest character of pedigreed stock must be removed at an early day from present location. Will sell in the field at 10 cents apiece. Apply John Hinkle, Lordsburg, California.

**Citrus Stock**—Very best Valencia and Eureka lemon trees. Two years old. Pedigree stock. Big strong root system. Grown at San Dimas. Price right. Smith Citrus Nurseries, 1121 Investment Building, Los Angeles. M. 3604; F. 2729.

**Closing Out**—15,000 choice Orange and Lemon trees for sale. Marsh seedless grapefruit, Eureka Lemons, Washington Navel and Valencia. Two year old buds 30c each, or in hundred lots 25c. F. A. Anderson, Elsinore, California.

**For Sale**—All kinds Citrus Nursery stock, 1 and 2 buds, fine roots. Y. Yamaguchi, Box 574, Phone Sunset 470R, Upland, 10th St. and Cucamonga Ave., Upland.

### SPECIAL

**SHARPLESS AVOCADO TREES**  
Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsurgi, 23rd St., Upland, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

**For Sale**—Citrus trees and Seed stock at your own price. Write or come. B. C. Dodson, Glendora, California.

**For Sale**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, California.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### RABBITS

**Go into Business for Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**Meat is Wanted**—Not show stock. Need not buy books either. Free instructions at Public Library. I sell selected New Zealand at \$2.00 each. Satisfaction or your money back. H. Wooding, Van Nuys, California. P. S.—No circulars for sale, just rabbits.

**Money in Rabbits**—Raise rabbits for us. Will pay \$6.00 per pair. Send stamp for reply. H. E. Gibson Co., Arcadia, California.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

### FERTILIZERS

Slacked lime corrects sour, heavy soils, prevents gum disease and by correcting your soil wrongs, you get better results from your fertilizers. Alfalfa, beans and peas are lime plants and need lime. Slacked lime acts quickly. Price low for immediate shipment. Gypsum supplied. H. B. Matthews, 495 Douglas St., Pasadena.

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**Tested Bean Seed**—Hardy, upland grown seed beans will increase your yields. We carry a complete stock of Teparys, Mexican Red, Pinks, Lady Washington, Small Whites, Red Kidney, Blackeyes, Bluepods and Pintos. All seed tested by U. S. Department of Agriculture. Get our booklet Bean Varieties and their Local Adaptations. A dictionary on bean seed. Write for prices before planting season. Desk B, BOMBERGER SEED CO., Modesto, California.

**Bean Seed For Sale**—We have good seed beans on hand of following varieties: Limas, blackeyes, large white, small white, pinks, Teparys, Henderson bush, Mammoth bush. Now selling bean bags for fall delivery. C. C. Collins Company, Santa Ana, California. Sunset 71; Home 172.

**Tepary Bean Seed for sale**. Lots of 500 pounds or over 10 cents per pound f. o. b. Puente or Hartville. Twelve cents per pound, smaller lots.

Whittier Extension Co., Van Nuys Building, Phones: 10421, Los Angeles, Main 2606.

**Sudan Seed for sale**, 17½c, Amber cane 7½c; Feterita, Egyptian Wheat, Red and White Milo Maize, Dwarf White Milo Maize, yield 21 sacks per acre, S. Peruvian alfalfa. Large orders, wholesale prices. Hay in car loads. Write for circular. Box 501, Fowler, California.

**Plant a Few Acres of Dwarf Milo Maize for seed**. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Sudan Grass Seed**—We offer a limited quantity of fancy re-cleaned Sudan at an attractive price. Write today for samples and prices. Orders filled in the order they are received. Desk B, Bomberger Seed Co., Modesto, California.

**Re-cleaned Sudan Grass seed for sale**. Prices 30c pound for all orders under 100 pounds; 25c pound for all orders over 100 pounds. A. W. Greathead, Box 270 R. C., San Jose, California.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**For Sale: Sudan Grass Seed**—Horticulturist inspected, 100 per cent pure, heavy seed that will grow. 20 cents or market price, per pound. Wm. Ritchie, Riverside, Arlington, California.

**Sweet Potato Plants**, Yellow, 500,000, \$2.00 per thousand, cash with order. Home Phone 833. A. T. Hooven, Anaheim.

**For Sale**—Chili Pepper, Egg Plant, Pimento, Tomato, Celery and Sweet Potato Plants. Robertson Nurseries, Fullerton, California.

**For Sale**—Amber Cane Sorghum seed in lots of 100 pounds and over. For prices write P. O. Box 507, Atwater, California.

**Red Jersey Sweet Potato Plants** 50c per hundred. \$3.00 per thousand. Post Paid. R. M. Plympton, Arroyo Grande, California.

**For Sale**—Tepary and Blackeye bean seed. Apply L. H. Thompson, P. O. Box 182, Owensmouth, California.

**For Sale**—Yellow sweet potato plants, \$2.00 per thousand. W. L. Lutz, R. 3 Box 7, Santa Ana.

### LIVE STOCK

**D. E. Kellher**—Importer and Breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of yearling Hampshire rams sired by Walnut Hall and Butterfield Rams, purchased at Salt Lake, August, 1916, also a few yearling ewes of same breeding. Inspection and correspondence invited.

**Sheep for Sale**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

### MISCELLANEOUS

**For Sale**—2000 ft. irrigating pipe following sizes: 1000 ft. 4-in. 16c; 500 ft. 8-in. 38c; 365 ft. 10-in. new, 45c. DEMMITT, 120 N. Main, up-stairs.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Will Ship Box of Lemons** (4 dozen) prepaid any place in U. S. \$1.00. Ernest Vince, Santa Barbara, California.

### WANTED

**Wanted**—A competent foreman for citrus orchard. Must be capable in the upkeep of pumping machinery. Married man preferred. References required. Address Box 97, Ducor, California.

### GEESE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alhambra, Cal.

### ENGINES

**Several New and Slightly Used Engines**, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

**For Sale**—One 15-30 Gas Pull Rumley engine, cost \$2000.00, will take \$1500.00. Abram Marron, Jr., Box 10, Oceanside.

### FARM LANDS FOR SALE

**New Openings**—State land well located, offered first time regardless present value—town lots, acreage, some improved. Your patriotic duty this year to buy state land, to be sold for taxes. Get the money in the treasury, the land on assessment roll, and crops growing on land. Get bargain at one-tenth value. Because of drink, death, leaving country, etc.; years ago this property went to the state. Because of war, work and worry, most persons will pass these bargains to you. Put in your order now for new 1918 lists and particulars, any three counties, \$5.00. Any man or woman can buy on payments without residence. New law makes all safe. You get mineral and oil rights. Get busy or get left. Joseph Clark, Sacramento.

### HELP

We still need a few more settlers to finish our 6000 acres, which is being sold in 40 acre farms at \$25.00 per acre. Ten yearly payments at 6 per cent interest. By selecting your future home in this splendid tract at Bryant, Snohomish County, you are not alone buying a fertile and productive piece of land, but you are buying the best investment in the state today. Railways, paved roads, schools, churches, canneries, creameries and mills.

The best proposition on the market for the man who wants a farm. For further information address the owners, BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

**For Sale or Exchange**—60 acres rich, alluvial silt soil. Level, irrigated, ready for crop. Real alfalfa land. Domestic water on place. Plenty of irrigation water. 1¼ miles from town, churches, grammar and accredited high school. Half cash, half trade, anywhere. Make your proposition now. Chas. McNeely, Alhambra, California.

**For Sale**—160 acre relinquishment in Kern County. Level valley land all tillable. Near live railroad town. Some improvements, clearing, plowing, fencing, well. Valley grows deciduous fruits, cotton, beans, alfalfa. Plenty of pumping water. Good prospects of gravity system. Electric power. Price \$10 per acre. Address J. Care Cultivator.

**For Sale**—40 acres sediment creek land. One and half miles from Willows, the busiest town in California. Abundant water at 12 feet. Five acres fine young orchards. This land paid \$55 per acre last season. Price \$6000, one half cash. Good for beans, sweet potatoes, watermelons, etc. A. W. Sehorn, Willows, California.

**For Sale or Exchange**—40 acres alfalfa land near Visalia; sandy loam soil, some alfalfa, all fenced, under irrigation. Will take improved or unimproved acreage to amount of \$3500 within 5 or 10 miles of coast Los Angeles or Orange Counties. Give location when replying. Wm. D. Green, Visalia, California.

**Fine level farm land**, California, 160 acres, best of soil. Plenty of water. Near oil belt. Close to McKittrick. We had an offer from oil company six years ago of \$150 per acre. Price now for quick sale \$100 per acre. J. H. Rule, 415 Canal Ave., Wilmington.

**To Reduce my holdings**, I will sell 20 or 40 acres bearing vineyard and orchard. Low price and good terms. J. P. Bolton, 632 Fortcamp Ave., Fresno.

**For Sale**—160 acres at Chandler, Arizona. All cleared; good cotton land; will sell all or part. P. O. Box 126, Cucamonga, California.

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**IRRIGATING PIPE**—1000 ft. 4-in. at 16c; 500 ft. 8-in. at 38c; 400 ft. 10-in. 45c; 365 ft. 10-in. O. D. screw casing 95c; 4-in. riveted 16c.

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**HOW'S THIS?** 50,000 gal. redwood tank, lug hoops and 40ft. tank stand; \$375; 1500 gal. \$22; galv. drums, \$4; 30 gal. hot water boilers, \$3.50; 8000 gal. heavy corrugated galv. tank, \$135; 10,000 corrugated galv. tank, \$175; 900 gal. heavy riveted steel wagon tank, \$68; wagon tanks, \$28 to \$48; new, used redwood, galv. tanks, all sizes.

**ODDS, ENDS—CHEESE CUTTERS**, \$5; automatic chicken feeders, \$2.50; large rendering kettle, \$10; alfalfa cutters, bone grinders, blower, cable; heavy log chain and drag hooks, \$10; big hay fork, \$6.75; low down tank pump, \$7.50; wheelbarrows.

**USED PLOWS, MOWERS, RAKES**, cultivators, single disc riding plow, \$47.50; 14-in. Gilpin Deere riding plow, \$32.50; 4-gang Stockton, fine shape, \$27.50; spike harrows, \$16; mowers, \$39.50; rakes, \$25; corn planter, \$22; corn cultivator, \$45; spring tooth harrow.

**BEST DEAL**—Ready to ship, \$39. Sundries, cheapest, in town; material guaranteed. Office DEMMITT COMPANY, 120 N. Main, upstairs. Yards 816 Yale St. Phones 15191, Bdwy. 1984.

**12 INCH CENTRIFUGAL PUMPS**  
**For Sale**—Three 12 inch, automatic balanced, vertical, Byron Jackson pumps, in 32 foot frames of 12 inch steel channels; in perfect condition; complete with elbows and check valves, all like new. Ready for detail inspection and immediate shipment at plant of SACRAMENTO VALLEY SUGAR CO., Hamilton City, California.

**REMANUFACTURED PIPE**  
All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

**WEISSBAUM PIPE WORKS**, 169 Eleventh St., San Francisco.

**Gasoline Engines**, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale**—Holt 1911 Sidehill combined harvester, 16 ft. header, 16 inch cylinder, \$500; cash or terms. B. Buckley, Berendo.

### POULTRY

**Our Annual Sale**—Breeders, eggs, chicks. Make room for youngsters. Surplus offered at half what they cleared 1918. Pens, trios, pairs, hens, eggs, males below half. Chicks reduced. Leghorns, Wyandottes, Reds, White, Barred Rocks, Anconas, Minorcas, Ducks, Turkeys. Some greatest hens in California; trap-nested by government, 200-283 eggs yearly. Limited number. James Beeson, Pasadena, California.

**Model Poultry Farm**, White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

**World's record layers** at the National Laying Contest, 1916, are the mother of my BRED-TO-LAY BARRED PLYMOUTH ROCKS. Eggs now reduced to half price. Get the world's best for \$2.50 per setting. Stanley S. Foote, 3923 San Rafael Ave., Los Angeles.

**Baby Chicks**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**Baby Chicks**, Ancona, Rhode Island Reds, \$16.00 per 100. Barred Rocks, \$17.50. MacFarlane Quality White Leghorn, \$12. Many other breeds hatching every week. D. E. Duke, 743 So. Los Angeles St., Los Angeles.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders** for White, Brown or Buff Leghorns, Anconas, Barred, or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery, Watsonville, Cal.

**White Leghorn Baby Chix** from heavy-laying (Hoganized) stock; \$10 per 100. We guarantee safe arrival. The PIONEER HATCHERY, 409 Sixth St., Petaluma, California.

**White Rocks**, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns. Folder and price list. B. W. Archibald, Soquel, Santa Cruz County, California.

**Chix**—Buff, Brown, and White Leghorns (Barron strain), Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Black Orpingtons Lay**, Welch and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**"Eastman's Bred-to-Lay"** Hoganized, trap-nested Barred Plymouth Rocks; chicks and eggs. Fairmead Poultry Farm, Fairmead, California.

**For Sale**—Barred Rock, R. I. Red and White Leghorn chicks. Reduced prices. Fine stock. Madera Hatchery, Madera, Cal.

**For Sale**—1200 laying hens to party who will continue business. I will give free rent of fully equipped poultry ranch. Chas. P. Graham, Palms, California.

### CATTLE

If you want clean high producing dairy cattle in numbers, or if you want just one first class family cow, come to this sale. 75 grade Holsteins, 20 grade Jerseys, at public auction. Herd in Cow Testing Association for three years; records announced at sale; tuberculin tested regularly for past 7 years, last test by Deputy State Veterinarian, February 1, 1918, no reactors. Sold subject to tuberculin test by the buyer. Holsteins mostly first, second and third calf granddaughters of King Segis Pontiac, Emperor and Lorena Korndyke, both grand champion bulls at California State Fair. Jerseys bought as calves from noted Mitchell herd that has been tested for butter fat regularly for ten years. All heifers in sale out of dams that made over 300 pounds butter fat in one year. Only two cows with blemished udders in herd. Cattle loaded on cars free of charge. Terms: \$100 and under cash; over \$100, six months' time with 7 per cent bankable note; 3 per cent discount for cash on sums over \$100. Owner donates heifer that will be sold for benefit of Red Cross and Red Cross lunch will be served. Sale will be held on Wm. Watt Ranch, 2¼ miles northeast of Napa, California, 10 a. m. Saturday, June 15, 1918. Owner, Wm. Watt, Napa; Auctioneer, Col. Cy. N. Clark, Modesto; Sales Manager, C. L. Hughes, Sacramento.

**For Sale**—Guernsey bull, Cora Reputation of the Rancho, 32102. Sires, Glendette of Pinehurst; dam, Cora May. Born December 18, 1914. Bred by Knickerbocker Ice Co., Crystal Lake, Illinois. We are going out of the dairy business. This bull for sale at a sacrifice, price \$300. Floribel Farming and Cattle Co., Box 71, Hanford, California.

**SHORTHORN CATTLE**. SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit. Tuberculin tested. Write or come and select. Horses, N. H. Locke Co., Lockeford, California.

**Shorthorns**—Several fine straight range bred bulls of high quality, ready for service, also some splendid yearling heifers. Fair Oaks Ranch, Willits, California.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, Cal.



## CATTLE

**For Sale**—One of Tehama County's best dairy herds. All fine grade Jersey cows, also young stock. Will sell in part or all. John Risse, Los Molinos, California.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires** (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

**Sunshine Farm Jerseys** — Bulls from officially tested dams for sale. E. E. Greenough, Merced.

**For Sale**—One registered Guernsey bull four years old. Abram Marron, Jr., Box 10, Oceanside.

**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys** — 1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

## HOGS

**BERKSHIRES** **GUERNSEYS**  
**GRAPE WILD FARMS**

A few fall boars left by Royal Superbus — also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.

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Escalon, San Joaquin County, California.

**Make Big Money** — Pork prices jumping up. Breeding stock scarce. Next winter will see the greatest shortage of hogs and the highest prices ever known. Prepare now by getting some Whitten Ranch Poland-Chinas — the prolific, easy-feeding money-makers. Prices reasonable; satisfaction guaranteed; everything immune. Send for valuable free booklet, "Hogs for Profit." Ranch in Tulare County, but write R. H. Whitten, 519B Marsh-Strong Building, Los Angeles.

**Poland-Chinas** — Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

**"Billiken" Chester Whites** — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

**We Pay Cash for Hogs of All Sizes**, weight and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Copro (Made from cocoanuts)** — Best hog-feed. Your dealer, or Lee Chamberlain & Co., Los Angeles, Cal.

**Rancho Rubio Duroc** — Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for \$25.00. Elmer Lamb, Ceres, California.

**Mule Foot Hogs**, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California. "The Blue Gums."

**Duroc-Jerseys** — Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

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**Large Type Poland Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

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## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

## Holographic Will

If a man and wife each make wills, all in their respective handwritings, leaving all of the possessions of each to the other, would it be legal and binding if one or both of the wife's parents signed their names to both wills as witnesses? Is it necessary for a will to have witnesses? — Subscriber, Los Angeles.

A will which is entirely written, signed, and dated in the handwriting of the testator is valid in this state without witnesses. Such will is known as a holographic will. There are some states in which it is not recognized. Witnesses to such a will are unnecessary, but the fact that it has been signed by witnesses does not affect the legality of the will of that character. The other form of will in common use requires the signature of two witnesses in this state and is not valid unless it is signed by at least two witnesses in whose presence the testator must have signed the will, declared it to be his last will and requested each of the two witnesses then present to sign as witnesses.

## Ditch Right

A owns 20 acres and B the adjoining 40. A joint ditch is made to irrigate five acres of A's land. A and B sell their land to different parties. A's vendee grades the five acres so that he no longer has use for the joint ditch. B's vendee can irrigate his land in two other ways. B's land has been irrigated twice since the ditch was made, four years ago. Can A's vendee close the ditch or have B's vendee buy their share in the ditch? If so, how should they proceed? — Subscriber.

If the ditch was made for the benefit only of A's land, then he would be entitled to close the ditch whenever he chooses. If it was made for the benefit of the land of both A and B, then it can be closed only upon joint agreement of the owners of said lands or, by abandonment by either, the other can close. If there is a recorded grant of this right of way then, in order to clear the property of the encumbrance of the right of way a release from each party should be recorded. If nothing has been recorded, then a simple contract or agreement acted upon by each of the parties is sufficient.

## DUCKS

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## GOATS

**For Sale or Exchange** — Two pure bred Toggenburg male kids. 25,000 gallon Redwood goats' tank. J. Lenert, Chino, California.

**Toggenburg Milch Goats** — Rae P. Williams, Federal Realty Building, Oakland, California.

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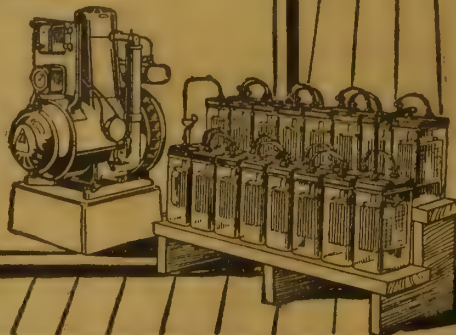
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## Household Department

### THE LITTLE LAD

To me it's always the little lad  
Afraid to speak his name,  
But he was one of the first to go,  
When his heart received the flame.

He used to steal from the shadowy room,  
And over the lighted stair,  
If dismal tales were being told,  
But he won the Croix de Guerre.

He clutched my hand when the thunder  
broke,  
He paled at the lightning's glance  
But he met the Teutons face to face,  
And he fell with the sons of France.

—By Agnes Lee of The Vigilantes.

### THE BLOCKING OF OSTEND HARBOR

**O**NE of the most spectacular feats of the war has been the blocking of the harbor of Ostend by the British fleet. The first attempt, partially successful, was made late in April; the second, May 10. The story of the operations gives us some of the dash and thrill of war. We have heard so much of the gray days and nights in the trenches and the unceasing "chores" of the war, that it is good to read occasionally of the individual feats of courage, of nerve and efficiency. This attack in all its features was scheduled to the minute, planned with all the painstaking care that years of study and experience made possible, yet relying at the last on the bravery, the steady heads and hands of trained fighters. We give the story as issued by the British admiralty:

"Dunkirk, May 11: The Sirius lies in the surf some 2000 yards east of the entrance to Ostend Harbor, which she failed so gallantly to block, and when in the early hours of yesterday morning the Vindictive groped her way through the smoke screen and headed for the entrance it was as though the old fighting ship awoke and looked on. A coastalmotor boat had visited her and hung a flare in her stack and rusty riggings, and that eye of unsteady fire, paling in the blaze of star shells, or reddening through the drift of smoke, watched the great enterprise from the moment when it hung in doubt to its ultimate triumphant success.

"The planning and execution of that success had been entrusted by Vice-Admiral Sir Robert Keyes to Commodore Hubert Lynes, who directed the previous attack to block the harbor with the Sirius and Brilliant. Upon that occasion a combination of unforeseen and unforeseeable conditions had fought against him.

"Upon this, the main problem was to secure the effect of a surprise attack upon an enemy who was clearly expecting him. The Sirius and Brilliant had been baffled by the displacement of the Stroom Bank buoy, which marks the channel to the harbor entrance. But since then aerial reconnaissance had established that the Germans had removed the buoy altogether, and that there now were no guiding marks of any kind. They had also cut gaps in the piers as a precaution against the landing, and, further, it was known that nine German destroyers were at large upon the coast.

"It was a night that promised well for the enterprise—nearly windless—and what little breeze stirred came to a point or so west of north. The sky was lead blue, faintly star-dotted, with no moon, and a still sea for small craft, motor launches and coastal motorboats, whose work was done close inshore.

"From the destroyer which served the commodore for a flagship, the remainder of the forces were visible only as silhouettes of blackness.

"From Dunkirk a sudden brief flurry of gunfire announced that German airplanes were on the way to visit Calais, and over the invisible coast of Flanders the summer lightning of restless artillery rose and fell monotonously.

"There's the Vindictive!" The muffled seamen and marines standing by the torpedo tubes and guns turned to gaze at the great black ship, seen mistily through the screening smoke from the destroyer's funnels, plodding silently to her goal and end. She receded into the night astern, as a destroyer raced on to lay a light buoy that was to be her guide, and those on board saw her no more. She

passed thence into the hands of the small craft whose mission was to guide her, guard her and hide her in a smoke screen.

"There was no preliminary bombardment of the harbor and batteries, as before the previous attempt. That was to be the first element in the surprise. A time table had been laid down for every stage of the operation, and the staff work beforehand even included precise orders for laying the smoke barrage with plans calculated for every direction of the wind.

"Monitors anchored in firing position far seaward awaited the signal. The great sea batteries of the Royal Marine artillery in Flanders, among the largest guns that were ever placed on land mountings, stood by likewise to neutralize the bigger artillery along the coast and the airmen who were to collaborate with an aerial bombardment of the town, waited somewhere in the darkness overhead. Destroyers patrolled to seaward of the small craft.

"The Vindictive, always at a solemn gait, found the flagship's light buoy and bore up for where a coastal motorboat commanded by Lieut. William P. Slayter was waiting by a calcium flare upon the old position of the Stroom Bank buoy.

"Four minutes before she arrived there, and 15 minutes only before she was due at the harbor mouth, the signal for the guns to open was given. Two motorboats under command of Lieut. Albert L. Poland dashed in toward the ends of the high wooden piers and torpedoed them. There was a machine gun on the end of the western pier and that vanished in a roar and leap of flames.

"Over the town a flame suddenly appeared high in the air and sank slowly eastward—the signal that the airplanes had seen and understood. Almost coincidentally with their first bombs came the first shells, whopping up from the monitors at sea. The surprise part of the attack was sprung. The surprise, despite the Germans' watchfulness, seems to have been complete. Up until the moment when the torpedoes of the motor boats exploded there had not been a shot from the land—only occasional routine star shells.

"The motor launches were doing their work magnificently. These perfect warships, manned by officers and men of the royal naval volunteer reserve, are specialists at smoke production. They built to either hand of the Vindictive's course the likeness of a dense sea mist, driving landward with the wind. Star shells paled and were lost as they sank in its beams of searchlights, and seemed to break off short upon its front. It blinded the observers in the great batteries, which suddenly, upon the warning of the explosions of guns, roared into action.

"There was tremendous uproar. The coast about Ostend is ponderously equipped with batteries, each with a name known and identified as Von Tirpitz, Von Hindenburg, Deutschland, Cecilia and the rest. They register from 6-inch to monsters of 15-inch naval pieces in land turrets, and the royal marine artillery fights a war-long duel fire with them. These now opened fire into the smoke, and over it, at the monitors and marines. And the monitors replied.

"Meanwhile the airplanes were bombing methodically and anti-aircraft guns were searching the skies for them. Star shells spouted up and floated down, lighting the smoke banks with spreading green fires, and those strings of luminous green balls, which the airmen call 'flaming onions,' soared up, to lose themselves in the clouds.

"Through all this stridency and blaze of conflict the old Vindictive, still unhurrying, was walking the lighted waters toward the entrance. It was then that those on the destroyers became aware that what seemed merely smoke was wet and cold; that the rigging was beginning to drip, and that there were no longer any stars. A sea fog had come on.

"The destroyers had to turn on their lights and use their sirens to keep in touch with each other.

"There were motorboats on either side of the Vindictive escorting her to





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the entrance. These were supplied with what are called Dover flares, enormous lights capable of illuminating square miles of sea. At once every pistol was fired as a signal to light these, but the fog and smoke together were too dense for even the flares.

"The Vindictive then put her helm over and started to cruise to find the entrance.

"Twice she must have washed across and at the third turn, upon reaching the position at which she first lost her way, there came a rift in the mist and she saw the entrance and the piers on either side, and an opening dead ahead.

"The motorboat Up No. 22, commanded by Acting Lieutenant Guy L. Cocklyn, raced on into the opening under heavy and momentarily growing fire, and planted a flare on the water between the piers. The Vindictive steamed over it and on. She was in.

"The guns found her at once. She was hit every few seconds after she entered, her scarred hull broken afresh in a score of places, her decks and upper works swept by machine guns. The machine gun at the end of the western pier had been put out of action by a motorboat's torpedo, but from other machine guns at the in-shore end of the pier from a position on the front and from machine guns apparently firing over the eastern pier, there converged upon her a hail of lead.

"After her control was demolished by a shell which killed all the occupants, including Sub-Lieut. Angus H. MacLachan, who was in command of it, the upper and lower bridges and the chart room, swept by bullets. Commander Godsall ordered the officers to go with him to the conning tower. They observed through the observation slit in the steel wall of the conning tower that the eastern pier was breached some 200 yards from the seaward end, as though at some time a ship had been in collision with it.

"They found the front of the town silhouetted again and again in the light of the guns that blazed at them. The night was a patchwork of fire and darkness.

"Immediately after passing the the breach in the pier, Commander Godsall left the conning tower and went on deck, the better to watch the ship's movements. He chose a position and called in through the slit of the conning tower his order to starboard the helm. The Vindictive responded and laid her battered nose to the eastern pier and prepared to swing her 320 feet of length across the channel.

"It was at that moment that a shell from the shore batteries struck the conning tower. Lieut. Sir John Alleyne and Lieut. V. A. C. Crutchley were still within. Commander Godsall was close to the tower outside. Lieut. Crutchley shouted through the slit to the commander and receiving no answer, rang for the port engine full speed astern to help the swinging ship. By this time she was lying at an angle of about 40 degrees to the pier and seemed to be hard fast; so it was impossible to bring her further around.

"After working the engines some minutes to no effect, Lieut. Crutchley gave the order to clear the engine room and abandon ship, according to the program previously laid down. Engineer Lieutenant-Commander William A. Bury, who was the last to leave the engine room, blew the main charges by a switch installed aft.

"Lieut. Crutchley blew the auxiliary charges in the forward six-inch magazine from the conning tower.

"Those on board felt the old ship shrug as the explosives tore the bottom plates and bulkheads from her. She sank about six feet and lay upon the bottom of the channel. Her work was done.

"It is to be presumed that Commander Godsall was killed by the shell which struck the conning tower. Lieut. Crutchley, searching the ship before he left her, failed to find his body or that of Sub-Lieut. MacLachan in that wilderness of splintered wood and shattered steel. In the previous attempt to block the port Commander Godsall commanded the Brilliant and together with the officers of that ship and of the Sirius had volunteered at once for the further operation.

Continued on Page 657



COOK WITH PEARL OIL

## Cooking Convenience

All the convenience of gas—that is the meaning of a New Perfection Oil Cook Stove installed in your kitchen. Easy to operate. A touch of a match and in a jiffy your stove is ready for cooking. No smoke or smell; no dust or dirt. More convenient than coal or wood. Better and more economical cooking all the year round. A cool kitchen in summer. And you have all the convenience of gas.

In 1, 2, 3 and 4 burner sizes, with or without ovens or cabinets. Ask your dealer today.

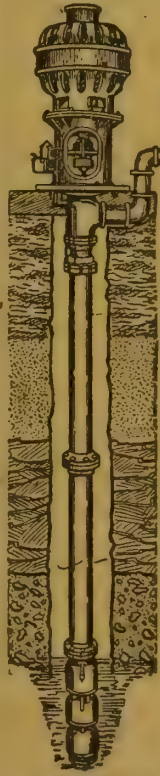
STANDARD OIL COMPANY (California)

## NEW PERFECTION OIL COOK STOVE

## DEEP WELL TURBINES

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.



Prices as low as are consistent with good quality and workmanship.



"Write for Catalog No. 48"

**BYRON JACKSON IRON WORKS, Inc.**

SAN FRANCISCO  
LOS ANGELES  
VISALIA

## Perforated Tree Protectors

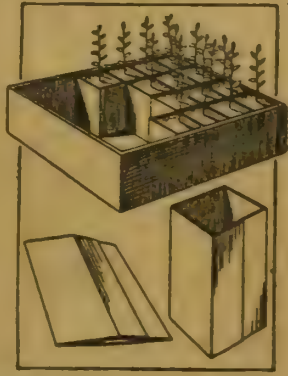
Why use anything but a PERFORATED PROTECTOR, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small LATH HOUSE ABOUT EACH TREE. Protects from Squirrels—Rabbits—Gophers—Hot Sun—Sand Storms—Barking in Cultivation, etc.

We make a number of kinds. TELL US YOUR PEST, and we will tell you what kind to buy. Get our prices. We can save you money.

**COLLAPSIBLE PLANTING POTS**  
Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start

Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

Write for samples and prices of both Pots and Protectors. State which you are interested in.  
THE EXPAN CO., 935E, Central Ave., Redlands, Cal.



## HORSE-SHOE-TIRES

Guaranteed for 5000 MILES  
Pacific Rubber Co. Los Angeles



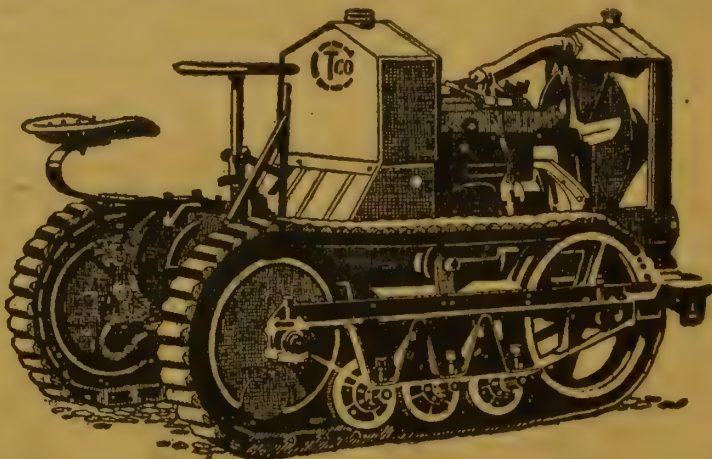
# Cleveland Tractors

Buy Now Save \$105

The price of the Cleveland Tractor now is \$1495, F. O. B., Berkeley—July 1st it will be \$1600. We have purchased 100 Cleveland Tractors, which we can deliver at \$1495, F. O. B., Berkeley. It is a case of first come first served.

We have sold over 200 tractors in Northern California since last fall. A number of large users have given us their second and third orders.

The consumption of fuel is 8½ gallons of distillate and 1½ pints of good grade lubricating oil in nine working hours.



## SPECIFICATIONS IN BRIEF:

Motor: Four-cylinder, 3¼-in. bore by 5½-in. stroke. Protected overhead valves. Horsepower: 12 at drawbar, 20 at belt-pulley. Length: 96 inches. Width: 50 inches. Weight: Less than 3200 pounds. Turning Circle: 12 feet. Track: Length (each side) 50 inches, width 6½ inches. Traction surface: More than 600 square inches. Center to center of tracks: 38 inches. Clearance: 12 inches. Belt Pulley: Diameter 8 inches, face 6 inches. Suspension: Three-point. Heavy duty roller bearings throughout. 1800 pound drawbar pull.

The Cleveland Tractor not only saves time and labor—it does work cheaper and better. It makes possible larger and better crops. It enables you to do your part for the government and make money for yourself.

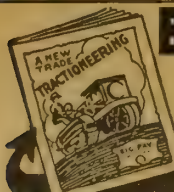
Does not pack the soil: Works on all kinds of farm land. Pulls a six horse load and moves 50 per cent faster. Operates successfully on 20 to 25 per cent grades.

Present Price \$1495 F.O.B. Berkeley July 1st Price \$1600

## DEALERS;

W. E. Barker, Fortuna. May Brothers, 2074 Center Street, Berkeley.  
W. I. Elliott Co., Sacramento. McKay-Davis Co., Fresno.  
F. W. De Witt, Marysville. B. D. Van Nader, 29 S. Aurora St., Stockton.  
Jesse I. Jewell, Santa Rosa. Latham, Davis & Co., San Jose.

F. H. Stow, Distributor, Berkeley, California.



## BIG DEMAND FOR TRACTIONEERS

The great importance of the tractor today has caused tremendous demand for tractor operators and repair men. Ranchers everywhere want competent tractioneers. BIG PAY. GREAT OPPORTUNITY NOW OFFERED YOUNG MEN in this new trade. Western America's Oldest, Largest and Most Reliable Trade School has inaugurated a special course in Tractor engineering and can PERFECT YOU as an expert. Write for 64-page catalog. NATIONAL AUTOMOTIVE SCHOOL, Figueroa at Eighth Street, Los Angeles, Cal.

HOLT AND INTERNATIONAL HARVESTER TRACTORS USED FOR DEMONSTRATION

For Every Purpose  
New Threads  
and Couplings  
Hot  
Asphaltum  
Dipped

2nd  
Hand  
and  
New

Screw  
Casing  
Fittings and  
Valves  
Guaranteed  
for Pressure

TESTED AND GUARANTEED

Pacific Pipe Co. Main and Howard Sts. San Francisco

## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

BRENTWOOD IRRIGATED FARMS, In Contra Costa Co., 63 Miles from San Francisco For Price and Descriptive Matter Address  
BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco

## Los Angeles Market

Los Angeles, May 22, 1918.

### BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....41  
Dairy Exchange price past week on ex-  
tras.  
May 15 16 17 18 20 21  
'18 ... 39 39 39 39 39 41  
Rets. wk. ending May 21, 285,700 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. ....24  
Eastern Daisies .....27  
Domestic Swiss .....36

### EGGS

Exchange quotations. Prices to re-  
tallers 2 to 3 cents higher.  
Fresh extras .....39  
Pullets .....35  
Case Count .....37  
Dairy Exchange prices past week on  
fresh extras.  
May 15 16 17 18 20 21  
'18 ... 37 37 37½ 37½ 37½ 39  
Rets. wk. ending May 21, 2247 cases.

### POULTRY

We quote to producers:  
Broilers .....23@32  
Fryers .....32  
Hens, small, 24; heavy .....27  
Ducks, lb. ....20@26  
Roasters .....32  
Roosters, old .....14  
Turkeys .....28@30  
Geese, young, lb. ....25  
Rabbits, live, 17@18; dr. ....40

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, May 22,  
by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs.—11.50@12.00  
Helfers, good .....8.50@9.00  
Cows, good .....8.00@8.50  
Canners .....5.00@5.50

Hogs—  
Av. 125 lbs. ....15.50  
Av. 150 lbs. ....16.00  
Av. 175-225 lbs. ....16.50

Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent.  
Prime wethers .....11.00@11.50  
Ewes .....10.50@11.50  
Lambs .....14.50@15.00  
Yearlings .....11.00@11.50

### POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....1.90  
Idaho Russets .....1.85@1.90  
New, lug .....90  
Sweet, lug .....1.85

### ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. ....1.25  
Brown .....1.50  
White .....2.50  
Crystal Wax, cr. ....1.50  
Garlic .....1.10

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....60@80  
Jerusalem, lb. ....7½  
Asparagus .....9@10  
Beans—Wax, lb. ....6@6½  
Ky. Wonder .....7½@8  
Beets, sk. ....2.00  
Cabbage, lb. 1½; sk. ....1.25  
Red, lb. ....5  
Carrots, doz. ....30  
Celery, doz. ....1.25@1.50  
Cucumbers, bx. ....1.15  
Egg Plant, lb. ....12  
Horseradish, lb. ....15  
Lettuce, doz. ....40  
Leeks .....35  
Mint, doz. ....40  
Onions, green, doz. ....25@30  
Peas, Tel., lb. ....5½@6  
Peppers, Chili, lb. 18; Bell .....25  
Parsnips, doz. ....40  
Parsley, doz. ....20  
Radish, doz. ....20  
Rhubarb, C. W. bx. ....1.25@1.35  
Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Summer, cr. ....90  
Tomatoes, cr. ....2.50  
Turnips, doz. ....40  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—W. W. Pearmain .....1.85@2.50  
Spitzenberg .....2.50@3.00  
Y. Newton .....2.00@2.50  
Bananas, lb. ....6½@7  
Cherries, lb. ....17½@18  
Loquats, lb. ....7@7½  
Gooseberries .....7@10  
Strawberries, tray .....1.35@1.50

### CITRUS

Lemons, packed, 6.25; loose .....5.00  
Juice .....3.75  
Oranges—Valencias .....6.25  
Grapefruit .....3.25  
Limes, basket .....75

### DRIED FRUITS

In accordance with government ruling  
no contracts for 1918 dried fruit can be  
made until after June 1.

### BEANS

These are prices made by wholesaler to  
retailer.

Lady Washington .....14.00  
Limas .....14.00  
Pinks .....8.75  
Manchurian Reds .....9.25  
Baby Mex. ....9.50  
Garbanzos .....10.00@11.00  
Small Whites .....14.00  
Blackeyes .....10.00  
Tepary .....10.00@11.00  
Lentils .....25.00  
Mex. Red .....9.00

## HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oats .....26.00@28.00  
Volunteer Oat .....14.00@16.00  
Wheat .....23.00@26.00  
Barley .....23.00@26.00  
Alfalfa .....18.00@20.00

Quotations furnished by California  
Alfalfa Growers' Association, Riverside,  
California.

Number 1 alfalfa hay is \$23.00 per ton  
f. o. b.; common shipping points take a  
\$1.50 carload rate to destination. Prices  
from points where a higher or lower rate  
applies to destination will be correspond-  
ingly lower or higher.

## GRAIN AND FEEDSTUFFS

With new barley harvesting on in the  
Imperial it is probable prices on all  
grains may be established soon but as  
yet only chaos obtains and only individ-  
ual barter can determine price of the  
feeds or grains.

## San Francisco Markets

San Francisco, May 21, 1918.

### BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:

Two-pound squares, parchment wrap-  
per, ¼c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....41

Prices on butter are practically 15  
cents above year ago this date.

Prices Extras past week and year ago:  
May 14 15 16 17 18 20  
'18 ... 40½ 41½ 41½ 42 42 41  
'17 ... 35 36½ 37 37 37  
Rets. wk. ending May 20, 725,500 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats .....21¼@23  
Jack Cheese, full cream .....26@27  
Half skim .....14@17  
Ore. Y. Am. ....25

### EGGS

Dairy Exchange Quotations:  
Extras .....41

Prices Extras past week and yr. ago:

May 14 15 16 17 18 20  
'18 ... 38½ 38 38½ 39½ 40 41  
'17 ... 34 35 35½ 35 35  
Rets. wk. ending May 20, 16,502 cases.

### POULTRY

We quote to producers, lb.:  
Per lb.: Large hens, 28@30; small do,  
25@26; broilers and fryers, ¼ to 1 lb.,  
35; 1 to 1½ lbs., 35@38; 1½ to 2 lbs., 40;  
1½ to 2 lbs., 41@42; 2½ to 3 lbs., 42@45;  
old roosters, 19@20; ducks, 23@25.  
Squabs, doz. ....2.00@4.50  
Belgian Hares, live, lb. ....16@17

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ¼ to ½c  
more.

Steers, lb., 11½@12; thin, 8@11; cows  
and heifers, 8@9; thin, 6@8½; calves, 9@  
10½.

Sheep—Lb. gross weight: Fat, unshorn  
wethers, 14½@15; ewes, 12@12½; lambs,  
yearlings, 16@17; milk, 14½@15; shorn  
sheep, 1½@2 less.

Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 16; 140 to 300 lbs., 17½; 300 to  
400 lbs., 17.

### POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks .....1.40@1.60  
River .....1.15@1.40  
New Red, lug .....85@1.00

### ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....75@1.00  
Bermudas, Imperial, cr. ....1.25  
Garlic, lb. ....1.01½

### VEGETABLES

Wholesale selling price.

Artichokes, doz. ....12½@40  
Asparagus, lb., white; 4@9; green. ....4@5  
Beets, sk. ....75@1.00  
Beans, lb., String, 4@5; Wax .....8@10  
Carrots, sk. ....75@1.00  
Cauliflower, doz. ....30@50  
Celery, cr. ....2.75@3.25  
Cucumbers, bx. ....1.50@1.75  
Corn, green Imperial, doz. ....25@50  
Egg Plant, lb. ....5@12½  
Lettuce, cr. ....1.00@1.25  
Onions, green, bx. ....65@75  
Parsnips, sk. ....35@1.00  
Peas, lb. ....2½@4  
Peppers, Bell, lb., 7@30; Chili .....10@20  
Peppers, Bell, lb. ....7@15  
Pumpkins, sk. ....85@1.00  
Rhubarb, Straw, bx. ....1.00@1.25  
San Jose .....1.00@1.25  
Squash, Summer, cr. ....85@1.00  
Spinach, cr. ....50@75  
Tomatoes, cr. ....2.50@2.75  
Turnips, sk. ....75

### FRESH FRUITS

Apples—Newton Pippins .....1.50@2.25  
Apricots, cr. ....2.00@2.25  
Berries—Chest: Strawberries, 7.00@  
9.00; Longworth, 10.00@11.00; blackber-  
ries, cr., 1.75@2.00; raspberries, 1.75@2.25.  
Cantaloupes, Imp. flats, 5.00; spec. ....3.50  
Cherries, dr., early, 1.40@1.50; Black  
Tartarians, 1.60@1.75; Sonoma, 1.60@  
1.65; do, loose, 10@15 lb.  
Bananas, Hawaiian, lb. ....7½@8  
Gooseberries, lb. ....9@10  
Cherries, dr. ....1.25@1.40  
Loquats, lb. ....10@15  
Pineapples, doz. ....5.00@5.00  
Raspberries, cr. ....1.50@2.00  
Strawberries, ch. ....7.00@8.50  
Citrus Fruits—Lemons, bx., according



to size, fy., 4.00@6.25; lemonettes, 3.50@4.75; grapefruit, fy., 2.50@3.25; ch., 2.00@2.50. Oranges—Bx., Valencias, from 100s to 228s, 6.00@6.50.

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19.

BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....13.50@13.75  
Bayous .....9.00@9.25  
Small Whites .....Nominal  
Large Whites .....Nominal  
Mexican Reds .....9.00@9.25  
Blackeyes .....8.25@8.40  
Pinks .....7.75@7.90  
Red Kidney .....12.50@13.00  
Cranberry .....Nominal  
Teparies .....10.25@10.50

HAY

Under date of May 18, Scott, Magner & Miller says:

Receipts past week, 826 tons. The high price of feed for the past year with the prospect of high prices for the coming year has caused a great many feeders of hay to change their equipment into motor vehicles with the result that they are now buying gasoline instead of hay and feed. Although at first this did not seem to affect the sale of hay to any great extent it is now becoming quite noticeable. Reports of the coming hay crop in most sections are very discouraging although the cool weather of the last few weeks has been most beneficial and has increased the yield both of hay and grain considerably. Owing to government regulations of the hay business we believe that there will not be as much buying done by dealers in the country early this season as has been done heretofore. Farmers will probably carry more or less of their hay through the winter.

We quote today wholesale prices in carload lots as appear from dealer's transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay  
(light 5 wire bale) .....27.00@28.00  
No. 1 Wheat or Wheat and  
Oat Hay .....23.00@25.00  
No. 2 Wheat or Wheat and  
Oat Hay .....20.00@22.00  
Choice Tame Oat Hay .....24.00@26.00  
Other Tame Oat Hay .....21.00@23.00  
Wild Oat Hay .....18.00@20.00  
Barley Hay .....18.00@20.00  
Alfalfa .....17.00@19.00  
Stock Hay .....13.00@15.00  
No. 1 Barley Straw .....50@80

GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

SEEDS

Prices in round lots, lb.:  
Millet, recleaned .....5@5½  
Alfalfa, lb. ....20@21  
Flax .....7@7½  
Hemp .....5@5½  
Rape .....2½@3

Citrus Fruit Market

Los Angeles, May 22, 1918.

Prices which are almost sensational are prevailing in nearly all markets. Owing to shipping conditions and limited supply, number of shipments are not up to normal. As may be noted by totals of shipments given below, this season's output is materially less than half that of last year.

Lemon output is also greatly reduced but this lack is made up in large part by foreigners.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 9374, lemons 2708, total 12,082. To same date last season; oranges 24,583, lemons 4214, total 28,797. Central California this season; oranges 2482, lemons 115, total 2597. Last season to same date; oranges 4069, lemons 164, total 4233. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

May 16  
New York: 14 cars. Val. 4.40-7.20, Sweets 5.40-5.95, Seeds 4.20-5.40.  
Boston: 8 cars. Higher. Val. 3.60-7.25, Nav. 4.25-5.95, lem. 4.10-4.80.

May 17  
New York: 11 cars. Val. 5.10-8.30, Sweets 4.10-6.70, Nav. 3.45-4.65, Grapefruit 2.35.  
Pittsburg: 2 cars. Val. 5.50-6.15, lem. 4.30-4.50.

St. Louis: 2 Oranges, 2 lem. Val. 4.00-6.00, lem. 5.60-6.95.  
Boston: 3 Oranges. Val. 6.00-7.15, Seeds 5.50, Grapefruit 2.50.

Cleveland: 3 Oranges, 1 lem. Val. 5.15-6.50, Seeds 5.30, Grapefruit 1.75, lem. 6.50.

May 20  
New York: 21 Oranges, 1 lem. Val. 4.95-7.45, Seeds 4.65-6.25, Sweets 4.35-6.50, Nav. 3.40-5.05, Mikes 6.15-7.85, Grapefruit 1.00-1.50, Bloods 5.95, lem. 6.25-8.80.

St. Louis: 6 cars. Val. 5.05-6.05, lem. 5.50-6.40.  
Pittsburg: 9 cars. Val. 3.75-6.40, Mikes 5.85-6.45, Sweets 5.80-6.05, lem. 4.35-4.60.

Boston: 5 Oranges, 2 lem. Val. 5.95-6.90, Sweets 5.95-6.90, Nav. 4.40, Grapefruit 2.00, lem. 5.15-7.80.

May 21

New York: 13 cars. Val. 3.00-7.65, Sweets 5.85-6.60, Grapefruit, halves, 60-95. Boston: 4 Oranges, 1 lem. Val. 5.75-7.45, Grapefruit, halves 1.55-1.85.

BLOCKING OSTEND

Continued from Page 655

"Engineer Lieutenant Commander Bury also was severely wounded.

"Most of the casualties were incurred while the ship was being abandoned. The men behaved with just that cheery discipline and courage which distinguished them in the Zeebrugge raid. Petty Officer Reed found Lieut. Alleyne in the conning tower still unconscious and carried him aft under a storm of fire from machine guns. Lieut. Alleyne was badly hit before he could be got over the side and fell into the water. Here he managed to catch hold of a boat and a motor launch under Lieut. Bourke succeeded in rescuing him and two other wounded men.

"The remainder of the crew was taken off by a motor launch under Lieut. Geoffrey H. Drummond, under a fierce fire. When finally he reached the Warwick the launch was practically in a sinking condition; her bows were shot to pieces. Lieut. Drummond himself was seriously wounded. His second in command, Lieut. Gordon Ross, and one hand were killed.

"All was according to program. Recall rockets for the small craft were fired from the flagship at 2:30 a. m. Great red rockets whizzed up, to lose themselves in the fog. They could not have been visible half a mile away, but the work was done and one by one the launches and motorboats commenced to appear from the fog and stopped their engines alongside. The destroyers exchanged news with them. There were wounded men to be transferred and dead men to be reported. But no one had seen a single enemy craft. Nine German destroyers which were out, free to fight, had chosen the discreeter part. The casualties, as at present reported, stand at two officers and six men killed; two officers and ten men, all of the Vindictive, missing, and believed killed, and five officers and eight men wounded.

"It is not claimed by the officers who carried out the operations that Ostend harbor is completely blocked. But its purpose to embarrass the enemy and make the harbor impracticable to any but small craft, and for dredging operations difficult, has been fully accomplished. The position of the Vindictive is with stem on to the eastern pier and not her stern, as shown in certain published illustrations."

WEATHER CONDITIONS

San Francisco, Cal., May 18, 1918.

Stations	Rainfall		Temp.	
	Wk.	Season.	Norm.	Max. Min.
Eureka	.02	24.17	44.02	56 46
Red Bluff	.00	11.99	24.18	82 50
Sacramento	.00	10.61	19.69	82 44
San Francisco	.00	11.48	21.84	64 46
San Jose	.00	9.36	16.45	66 38
Fresno	.00	10.19	9.47	84 48
San Luis Obispo	.00	18.07	20.02	78 42
Los Angeles	.00	13.85	15.44	80 54
San Diego	.00	7.98	9.85	70 54

Norwalk



Tires

Louis Lichtenberger Says:

"I want my friends to know that I consider Norwalk Tires the most dependable casings ever introduced. I am sincere in claiming that these tires will give far greater mileage service than others serving under the same conditions."

The Lichtenberger-Ferguson reputation, built by 20 years of square dealing, is behind every Norwalk Tire.

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Lichtenberger - Ferguson Company

Los Angeles : Fresno : San Francisco

Order Your BEEMAN Garden and Orchard Tractor

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Price \$300



It will replace one horse

R. Plow, Disc, and Cultivator. Immediate deliveries. 1918 deliveries limited. Some Territory Still Open for Dealers.

Owen Magnetic Sales Corp.

701-703 West Seventh Street, Corner of Hope St., Los Angeles, Cal.

Cleveland Tractor

12-20



\$1600 f.o.b. Los Angeles

F. T. Briles, So. California Distributor, 214-216 No. Los Angeles St., Los Angeles, Cal. Branch House—110 Main St. Porterville, Cal.

VICTORY DRIVE

Our Irrigation products will increase your production. Get our circulars on Surface Irrigation Pipe, Well Casing and other supplies. American Steel Pipe & Tank Co., 354-56 Pacific Electric Bldg., Los Angeles, Cal.

AMERICAN SURFACE PIPE

Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines

The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.

Hydrometric Co., 955 North Main St., Los Angeles, Cal.



EVERY TRACTOR

the lightest and best tractor built. Designed especially for small ranch and orchard work. Burns distillate and other low grade fuel. Does the work of four horses. Costs half its nearest competitor. It is the biggest value and most economical to operate.

Price \$650 F. O. B. Los Angeles

Immediate deliveries. Also built in six larger sizes. A Tractor for any size ranch. Good territory open to live agents. This is a money-maker.

Write for Illustrated Avery Catalogue. Note our new location.

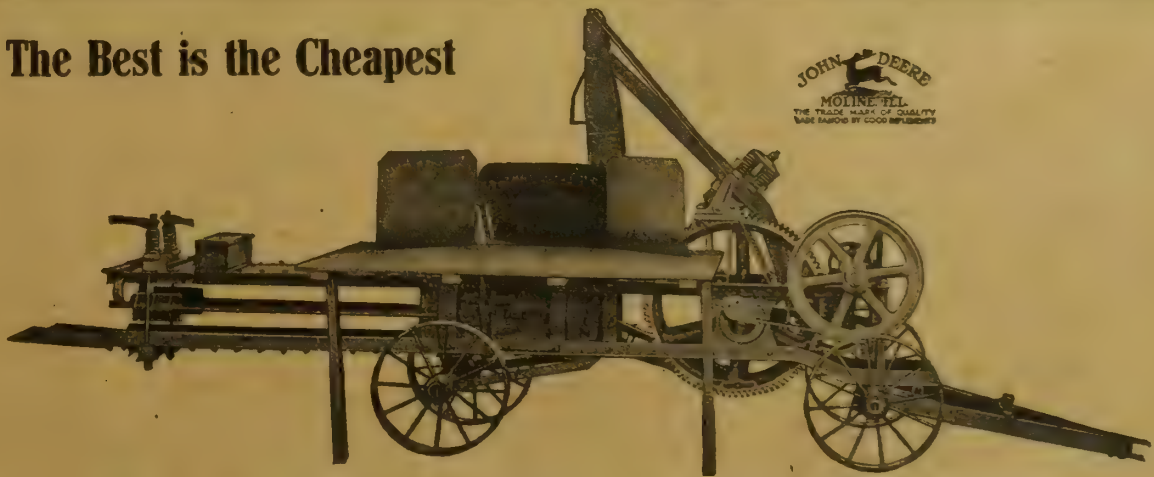
C. S. Anthony

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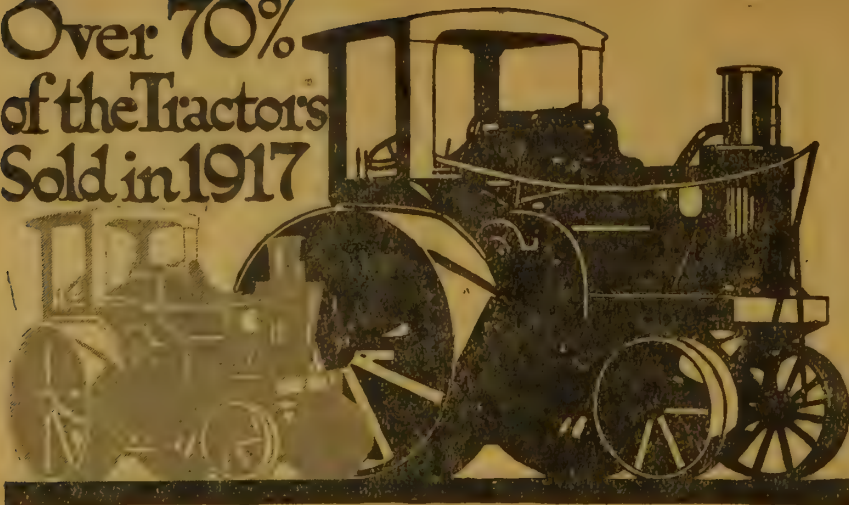
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give the hottest known spark—timed accurately. They fire leaner and poorer mixtures and develop maximum power out of every drop of fuel used. Their construction protects them against water, dirt and oil. Their use eliminates troublesome starters and batteries.

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For all kinds of weather and all kinds of wear  
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SAN FRANCISCO



## BEAN THRESHERS THE TWO STANDARDS

Built Especially for California Conditions



Past the Experimental Stage  
Eleven different models, with or  
without Engine, mounted complete  
Ranging in Price from  
**\$210 to \$1,000**  
—All Repair Parts Carried.



## France Must Get More Bread-Stuff

American Shipments Only Two-thirds of Barest Requirements



AMERICA must do more toward reducing the domestic consumption of cereals and increasing of exports to France," declared Andre Tardieu, French high commissioner to the United States, in an address delivered before the Southern Commercial Congress, in Baltimore, March 18.

"You must do it because it is a case of necessity, because it must be done. For these past three months the shipments of cereals from America to Europe have been short one-third of the supply recognized as indispensable to strictly compressed needs."

### Privation and Economy

The bread ration of the French soldiers has been cut from 25 ounces to 21 ounces, the civilian bread card allows ten ounces per day, which is about one-third of the average bread consumption of the French peasant or workman. The manufacture of crackers and pastry has been absolutely prohibited.

Consumption of sugar has been reduced 49 per cent and of rice 61 per cent. The import of dried vegetables has been reduced 52 per cent and of fats 48 per cent.

### Forced to Kill Cattle

Feeding of horses and cattle on cereals which could be saved for the making of bread has been prohibited. This, with the lack of other feed-stuffs, hay and fodder, resulted in a decrease of 50 per cent in the number of horses in France and in an important reduction of cattle. With almost no feed for their cattle the French were forced to place them on the market as meat. This meant the suspension of meatless days and an attempt on the part of the people to make up for the lack of bread with an increase of the meat portion.

### Some Districts Without Bread

"The people who have imposed such sacrifices upon themselves," said M. Tardieu, "are a people who have kept fighting for almost four years—a people who have mobilized 7,000,000 men from a population which, excluding the invaded territories, does not exceed 35,000,000 inhabitants, a people whose women and children have taken the burden of industrial and agricultural work left by the men who joined the army, a people whose army lost over a million men in killed, whose army, nevertheless, is still holding, with an unconquerable steadfastness, over two-thirds of the western front."

"Within the last weeks, despite the restrictive measures I have stated, there have been in France agricultural districts which had for days to put up with a complete, absolute deprivation of bread, a situation which could not go on without endangering the physical and moral health of the nation."

### America Must Share Suffering

"I am aware of what you have done in order to reduce your domestic consumption and to increase your exports. But you must do more. You must do it, for it is a case of necessity. You must do it because it can be done."

"We and our European allies, the British, the Italians, have been taught to suffer. Americans, who are now sharing our burden of blood and of death on the battle line, we are requesting you to share as well, in the rear, our burden of suffering. In order that you and we may win the war, it is necessary that you here in America should all agree to a new effort and to new privations."

## Various Liberty Bond Issues

There are at present issued and outstanding four issues of Liberty Bonds, and soon there will be six issues. They are as follows:

1. The original bonds of the First Liberty Loan; these bear 3½ per cent interest and mature June 15, 1947, but are redeemable at the government's option on or after June 15, 1932. They have a conversion privilege.
2. The original bonds of the Second Liberty Loan; they bear four per cent interest and mature November 15, 1942, but are redeemable at the government's option on or after November 15, 1927. They have a conversion privilege.
3. Bonds of the second issue which have been obtained by the conversion

of bonds of the first issue into bonds of the second; they bear four per cent interest and mature June 15, 1947, but are redeemable on or after June 15, 1932. They have a conversion privilege.

4. The original bonds of the Third Liberty Loan; they bear 4½ per cent interest and mature September 15, 1928, and are not redeemable until maturity. They have no conversion privilege.

The other two issues which will soon be outstanding will be 4½ per cent bonds obtained by the conversion of bonds of the first issue, and 4½ per cent bonds obtained by conversion of bonds of the second issue, into bonds of the Third Liberty Loan. They will have no conversion privilege.

## Debts of the Warring Nations

The London Economist for February places the total gross debt of Great Britain at 5,678,600,000 pounds (\$27,636,000,000).

The French minister of finance in presenting the budget for 1918 estimated the public debt of France on December 31, 1918, at 115,166,058,000 francs (\$22,227,000,000).

The public debt of Italy at the end of 1917 is estimated at about 35,000,000,000 lire (\$6,676,000,000).

The debts of the Central Powers are estimated as follows: Germany, \$25,408,000,000; Austria, \$13,314,000,000; and Hungary, \$5,704,000,000.

Our own public debt is now around \$8,000,000,000, but more than half of this amount has been loaned to our Allies and will be repaid us. It is estimated that of the total net expenditures of the United States for the fiscal year of 1918, exclusive of

our advances to our Allies, more than one-half will be defrayed by taxation.



### The Eggs You Didn't Get

How can you expect a hen to lay 150 eggs a year or even 50 eggs if her vitality is sapped by lice and mites—all she can do is itch and fret and cost you money.

## DEVIL'S DUST

A Sure Killer of Vermin—  
safe and economical to use  
Sold Everywhere GLOBE MILLS Los Angeles, Cal.



### Try the Coulson System of Feeding

Our free book Chickens from shell to Market gives full particulars  
Coulson Co. Petaluma Cal.



EGG LAYING CONTEST AT MOUNTAIN GROVE

By T. W. Noland, Director, Missouri Poultry Experiment Station

As the restriction the government placed on the sale of hens and pullets expired on May 1, it is well to cull your flock and sell all hens that are overly fat and the ones that have been loafing on the job. Keep your layers until the moulting season at least, then select your breeders for next season.

May is a good month to hatch chicks. If you haven't the number you expect to raise, continue hatching through this month. Pullets hatched in May and properly raised can be brought into laying condition before winter.

Look for lice on young chicks, especially the ones brooded with hens, for if you haven't treated the hens for lice before placing them with the chicks, you will experience trouble. Lice cause the death of more chicks when brooded with hens, than do diseases. Go over the hens, grease them with equal parts of vaseline and blue ointment before placing chicks with them.

Chicks to be transferred to colony houses should be brought up to the change gradually by keeping less heat in the brooder house, raising windows, then letting the fire go out. Make the change on warm days. Watch the chicks closely for a few nights to see that they do not "pile up." Train them to go on the roost by placing some on the perches and the rest will soon follow.

Entries are now being received for the eighth egg laying contest. The contest will be limited to 60 pens composed of four pens each of 15 varieties.

**The Contest**

Pen 36, S. C. White Leghorns from Missouri won the cup for April with a record of 126 eggs. The total number of eggs laid in April was 6216 or an average of 20.7 per hen.

The following are the leading pens for each variety:

S. C. White Leghorns, Missouri, 126 eggs; W. P. Rocks, Illinois, 125; Ancona, Missouri, 125; W. P. Rocks, Idaho, 125; R. I. Whites, Michigan, 123; W. Wyandottes, Illinois, 121; Silver Wyandottes, Iowa, 120; Buff P. Rocks, Missouri, 119; R. C. Reds, Missouri, 118; Barred P. Rocks, Missouri, 116; Barred P. Rocks, Michigan, 116; S. C. Reds, New Jersey, 114; Buff Wyandottes, Missouri, 113; S. C. Brown Leghorns, Missouri, 112; Buff Orpingtons, Missouri, 108; Black Orpingtons, Indiana, 102; White Orpingtons, Missouri, 87.

**SWAT THE ROOSTER!**

"Swat the Rooster!" is a slogan which should be adopted by every poultry raiser during the summer months, for absolutely millions of dollars worth of market eggs are spoiled every summer because they are fertile, and the poultry raisers are losing this tremendous sum each year.

If you have a good male bird, you wish to keep over for another year, place him in a pen with a few hens and he will be much better as a breeder another season. Separate these birds from the flock of layers and use the eggs from them at home. Show your patriotism by helping Uncle Sam save on the foodstuffs of our country by "swatting the rooster" and marketing infertile eggs!

Keep a lookout for broody hens. If you do not want the hens to set, place them in broody coop and provide plenty of feed and water, and it will be but a few days until they will be producing eggs. Don't allow any loafers to remain in the flock, but keep your hens in condition to do their "bit" toward supplying food for a hungry world.

**HENS SHOULD NOT BE HURRIED TO MARKET**

"A rush of too many fowls to market as soon as the restriction against selling laying hens is removed, may result in food losses," says the United States department of agriculture. "Think twice before selling a hen that is still laying. Green food is becoming more plentiful and the demand for eggs continues. Universal marketing of fowls may react on prices as well as cause spoilage of dressed poultry."

No Market for Chicken Lice

Feed is too scarce and expensive and poultry meat too valuable to be wasted by lice and mites. These animals have no market value, and each year they cause the death of thousands of chickens and hens.

The chicken mite lives in cracks and crevices of the poultry house during the daytime and visits the chickens to suck blood during the night. The ravages of mites can, therefore, be checked by frequently cleaning the house and spraying or sprinkling with an insecticide. Kerosene, crude oil, or a coal-tar wood preservative may be used for this spray. Ten per cent crude carbolic acid added will increase the effectiveness. Begin spraying early in the season and continue at least once each month during the hot weather.

Poultry lice live continually on the hen's body, which must be treated if they are to be killed. This may be done by use of a lice powder well worked into the feathers or by applying mercurial or "blue ointment" mixed with an equal amount of vaseline, under the vent, under each wing, and at the base of the neck. "Blue ointment" can be bought at drug stores. A few ounces will treat a large flock. An amount the size of a pea will treat a mature fowl or five to eight growing chicks. For very small chicks, lard, vaseline, or meat fryings can be more safely used. Effective treatment for lice and mites must begin at once before the hot summer weather favors their increase by the thousands.

**MAINTAINING POULTRY MARKET**

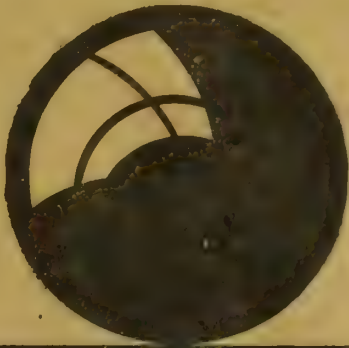
Producers have often felt that the food administration was engaged in depressing the market and favoring

the consumer, but there are other times, as indicated by this report in daily press of the action of Los Angeles' food administrator:

Ten days ago, according to Mr. Cole, a group of men invaded the local market and after buying up a large stock of poultry in the near vicinity proceeded to unload it on the local market, at a price considerably less than the quotations had been or would be until the first of next month.

Thursday afternoon, Mr. Cole summoned all the large wholesale poultry dealers of Los Angeles to his office where all angles of the question were threshed out. While nothing is known of the exact means whereby an agreement was reached, yet Mr. Cole announced yesterday that every large poultry dealer in Los Angeles had agreed to return to the fixed price, until June, in order that the many producers of poultry who had laid in a large stock of brooders would not suffer a severe loss.

Which rolls the easier



the perfectly round steel ball in the tread of the Yuba or the irregular tread of the old ox-cart?

Which is the freer from friction? Which carries the heavier load? Which travels faster? Which is your choice for the work you must do?

Scientific knowledge is that which has been demonstrated and proved by tests. In proving the Yuba Ball Tread idea, there were first the engineering experience of the inventor, then the combined experiences of our corps of trained and efficient engineers, who had for years been building gold dredges, one of the world's most costly machines.

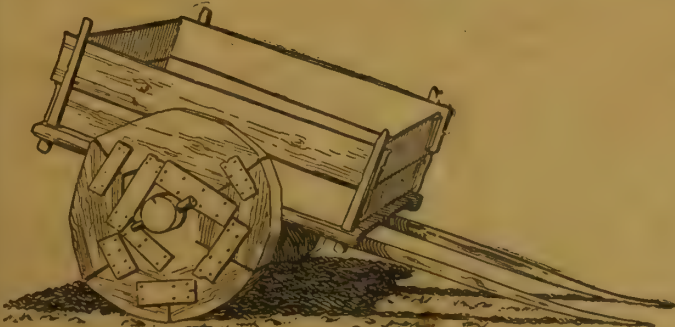
Then followed for the tractor four years of the hardest kinds of tests by farmers and contractors under severe conditions, theretofore considered impossible of accomplishment, proving the ball tread to be scientifically correct.

A Yuba Ball Tread Tractor in your possession means reduced cost of operation, deeper, wider furrows, and greater satisfaction all around.

Yuba Manufacturing Company

Department B

433 California Street, San Francisco



Factories at Marysville and Benicia

Model 12-20  
Model 20-35  
Model 40-70





'Chain'

'Usco'

## True Tire Economy

The most economical tires you can buy are

First—Tires that will travel the greatest number of miles per dollar of cost.

Second—Tires that will give you the greatest use of your car.

United States Tires are long mileage tires. They reduce your tire expense by the mile and by the season.

United States Tires are sturdy tires. They are built for endurance. They will give you continuous, uninterrupted service enabling you to get the most out of your car.

Both factors are more than ever important in these times of war.

Economy is a national duty,

—the nation demands utmost service from every car,

—the country is calling on every farmer to further increase his magnificent efforts of last year toward supplying food for the World.

Equip with United States Tires. There is a United States type and tread to suit every car, every road, every service.

The nearest United States Sales and Service Depot will be glad to help you in selecting right tires for your needs.

*For passenger cars—'Chain', 'Usco', 'Royal Cord', 'Nobby' and 'Plain'. Also tires for Motor Trucks, Motorcycles, Bicycles and Aeroplanes.*

*United States Tubes and Tire Accessories Have All the Sterling Worth and Wear that Make United States Tires Supreme.*

## United States Tires are Good Tires





# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

*Los Angeles*

*An Illustrated Weekly for the Rural Home and Ranch*

*San Francisco*

Vol. L—No. 22

June 1, 1918

One Dollar Yearly



Eucalyptus Viminalis With Less Than 30 Years' Growth, Near Reedley



# Mutual Fire Insurance in California

By C. B. Messenger



HERE are now 20 farmers' mutual fire insurance companies in California. Some of these are very small, carrying little more than \$100,000 total business, and one is carrying an aggregate of over \$10,000,000.

The organization of these insurance companies began in 1898 under the act of 1897. At first their business was confined by the act under which they were organized strictly to farm buildings. As farm buildings, usually without any fire fighting appliances within reach, are considered an undesirable risk by the old line companies, the rate made necessary, while materially under the old established company rates, was still higher than it should have been. Revision of state laws was secured which permitted taking business in incorporated cities. This business, however, is restricted to \$4500 total risks carried in any one city block. Likewise the largest one risk which may be carried is \$4500. This enlarging the field added strength to these mutual companies and is permitting of proportionate reduction in operating costs.

Most of these organizations are believers in "safety first" and are carrying a reserve which will meet even an abnormally large loss. The management of some of the associations, however, has considered that the reserve of membership is sufficient. In that case each member carries his own reserve as he sees fit, then in case abnormal loss does come, assessments are made.

The Ventura County association suffered severe losses little more than a year ago which compelled it to secure large loan at bank in order to promptly meet losses of its members in the great Ojai Valley fire.

The Los Angeles County association is carrying the largest reserve, now around \$32,000. Compared to the \$10,000,000 business which it is carrying, even this might be considered small by old line companies, but when it is considered that its risks are so widely separated and in every case of limited amount, it is seen that its reserve is entirely within safety limits. This fund is largely in savings banks, though a large-sized chunk of it has been invested in Liberty Bonds. Insurance of packing

houses or other large properties along railways is prohibited.

While these companies have been managed by farmers or at least in every case by people of no experience in insurance matters, it is astonishing that their success is as great as it has been. As years of experience are added and the method of handling large business propositions is more fully understood, these associations will be able to render far greater service.

These county associations have found it necessary in order to secure best of service to have a connecting link and have united in forming a state association. This association is not a business organization in any sense; merely an association in which the county corporations affiliate for the sake of protecting and advancing their own interests.

Again, state interests call for a still larger organization to look after national interests, hence the National Association of Mutual Insurance Companies, of which Harry T. Cooper of Crawfordsville, Indiana, is the secretary. The secretary of the California state association is George F. Cromer, who organized and is still secretary and manager of the Los Angeles County Mutual Association. Mr. Cromer is also California vice-president in the national association.

One reason for a purely mutual insurance is brought out in evidence given by the president of one of the largest insurance companies in New York before the New York insurance commission. This official frankly admitted that an extra fire now and then was really desired by the old line companies; it increases business. Here are his words:

"I don't care anything about a \$2,500,000,000 or a \$3,000,000 fire. Just as soon have it as not. It would put so much business on my books, and put rates so high, I would make it up."

Now while there is no question whatever as to the integrity of most of the great insurance concerns of the country it is not good business to continue a condition which calls for a loss to state and nation in order to benefit any private business. With a purely mutual organization there is no such inducement for increased business.

At a recent meeting of the Illinois

state association Insurance Commissioner Potts of that state said:

"As supervising insurance officer of your state I had the records of my office searched yesterday to find out whether anything was wrong with the farmers' mutuals of Illinois. This disclosed that not one complaint has been sent to my department and that there is not a single blemish on their record. I am obliged to say this is not true of every other form of insurance which has been under my supervision.

"Cooperation is the thing necessary for all of you. Sixty per cent of the selling price to the consumer of everything produced by you—that is the cost to the man who eats it at the table—goes to middle men. You have done better and fulfilled your purpose more completely in fire insurance than any other form of insurance organization in the world. If you can run fire insurance companies on a cooperative basis, you can cooperate in other ways."

Cooperative fire insurance is about the oldest form of cooperation in this country.

The first fire insurance companies of any kind organized in the United States were mutual companies, the first being the "Philadelphia Contributionship," formed February 18, 1752, of which the great patriot, Benjamin Franklin, was a founder. This company, however, after some unfavorable experiences, decided that it would no longer insure houses which had trees in front of them, because these made it more difficult to fight a fire. Consequently, in 1786, the "Mutual Assurance Company" was organized to insure houses with trees in front. Both of these companies are still in existence and doing business. Following this there were numerous fire insurance companies organized, both joint stock and mutual, in the United States.

These associations are all organized under the same state law. Their books are open to members, and the business is under the absolute control of the state insurance commissioner who makes periodical examinations of the books and the general conditions.

From the booklet of the Los Angeles County Association we quote regarding its business:

"Insurance in the hands of large

stock companies has been perverted from its true mission and become a means of amassing great wealth for capitalists and salaried officers—extracting from the insured, as statistics show, premiums at least double the sum paid for actual losses.

"That the citizens of our county may furnish their own insurance at actual cost, and yet with the highest possible security, is the object of this company, and the plan adopted is no new experiment, having been operated with most gratifying results for the last 120 years in the Eastern states.

"Since we have been organized, agents of the old line insurance companies have been profuse in their predictions that 'its life would be short,' 'would be more expensive,' and even endeavored to make some innocent persons believe that they would be 'assessed' until they lost their homes.

"But the actual experience, which is the crucial test, proves that notwithstanding their false predictions and the many misrepresentations to which we have been subjected, we came to stay and have furnished the best and safest insurance at one-third the rates of stock companies and at a saving of \$300,000 in 18 years.

"We have been organized 18 years, never made an assessment, and have \$28,000 cash in the treasury.

"By a united effort a mutual law was secured in California, March 1897. Under that enactment 20 companies have organized, carrying about \$60,000,000 worth of risks at an average cost of \$2.00 per \$1000 per year.

"So few counties having availed themselves of this provision, for the purpose of making a comparison and demonstrating erroneous conclusions, it will be necessary for us to go to other states and counties for statistics in this matter.

"In the forty-fourth annual report of the insurance commission of the State of Iowa, he makes the following comment in regard to the success of Farmers' Township Mutuals in that state:

"The business written by the Farmers' Township Mutual Fire Insurance for the year 1912 largely exceeded that of any other single year in the history of this class of companies. The total amount of insurance in force at the end of the year exceeded \$400,000,000. The total cost

## Farmers Mutual Fire Insurance Companies of This State

Farmers Mutual Fire Insurance Company of Mendocino County at Fort Bragg, Arvid Nelson, Secretary, Fort Bragg. Risks carried on December 31, 1916 when last report of insurance commissioner, Alexander McCabe was issued amounted to \$58,606.75.

Farmers Mutual Fire Insurance Company of Turlock at Turlock, John A. Orr, Secretary, Ceres. Risks carried amounted to \$2,043,880.00.

Farmers Mutual Fire Insurance Company of Yolo County at Woodland, J. D. Musgrove, Secretary, Woodland. Risks carried amounted to \$1,400,460.83.

Farmers Mutual Protective Fire Insurance Company of San Joaquin County at Stockton, E. H. McGowen, Secretary, Stockton. Risks carried amounted to \$2,244,577.00.

Hilmar Mutual Fire Insurance Company of Merced County at Hilmar, A. A. Anderson, Secretary, Hilmar. Risks carried amounted to \$568,957.00.

Humboldt County Fire Insurance Company at Ferndale, A. W. Blackburn, Secretary, Ferndale. Risks carried amounted to \$1,212,457.00.

Lake County Farmers Mutual Fire Insurance Company at Lakeport, H. S. Davidson, Secretary, Lakeport. Risks carried amounted to \$249,950.50.

Los Angeles County Mutual Fire Association at Los Angeles, G. F. Cromer, Secretary, Los Angeles. Risks carried amounted to \$8,935,692.00. Since this report was made out more than a million dollars has been added, and today this county is carrying in excess of \$10,000,000. Without question the other counties have made a similar increase.

Napa County Farmers Mutual Fire Insurance Company at Napa, E. H. McMillan, Secretary, Napa. Risks carried amounted to \$446,448.00.

Orange County Farmers Mutual Fire Insurance Company at Santa Ana, C. W. McNaught, Secretary, Santa Ana. Risks carried amounted to \$5,702,295.14.

Patrol Mutual Fire Association of Tulare County at Tulare, W. E. Anderson, Secretary, Tulare. Risks carried amounted to \$724,261.00.

Sacramento County Patrons and Farmers Mutual Fire Insurance Company, Joseph Holmes, Secretary, Sacramento. Risks carried amounted to \$1,187,615.00.

San Bernardino County Mutual Fire Insurance Company at Ontario, John N. Huehn, Secretary, Upland. Risks carried amounted to \$5,555,333.00.

Santa Barbara County Farmers Mutual Fire Association at Santa Barbara, C. B. Husted, Secretary, Santa Barbara. Risks carried amounted to \$1,160,328.

Santa Clara County Fire Insurance Company at San Jose, Ella A. Taylor, Secretary, San Jose. Risks carried amounted to \$2,081,074.00.

Scandinavian Mutual Protective Fire Insurance Association of Fresno County at Kingsburg, Nicholas G. Nelson, Secretary, Fresno. Risks carried amounted to \$6,291,089.00.

Sonoma County Farmers Mutual Fire Insurance Company at Santa Rosa, John M. Given, Secretary, Forestville. Risks carried amounted to \$3,632,331.00.

Ventura County Mutual Fire Insurance Company at Ventura, L. P. Hathaway, Secretary, Ventura. Risks carried amounted to \$3,225,999.55.



to the members on each \$1000 of insurance for the year was but \$2.00. This rate proves to be the average cost to the farmers over a period covering the years from 1878 to the close of 1912.

"The average cost in town mutuals was \$1.30 per \$1000.

"The report of the insurance superintendents of all states for the year 1918 is about the same.

"This result, taking into consideration that these companies are managed by men not experienced in underwriting, and in nearly every instance by men who give their time and attention to other pursuits in life, is remarkable. This could not have been attained had not the most rigid economy been practiced and the most careful selection and inspection of risks been exercised.

"E. H. Ohlendorf, secretary of

Pottawattamie County Farmers' Mutual of Council Bluffs, Iowa, writes:

"No purely mutual insurance company in the State of Iowa has failed to my knowledge. The company for which I am secretary has done business since 1878. Our average assessment has been less than 20 cents a hundred. This includes losses to live stock by lightning, something that farmers in California have not to contend with."

international law by dropping bombs on Red Cross hospitals. Many nurses and wounded men were slaughtered.

The British recruiting officers operating in America are endeavoring to secure a large number of Jewish volunteers for work in Palestine. Men of Jewish birth between the ages of 18 and 45 are desired.

The hundred million dollar Red Cross drive ended on Monday with the hundred millions vastly oversubscribed. How much over we are unable to say, but the boys in front are informed that the folks behind are not so far behind after all.

It is possible the new draft will include men to 55 years of age; men from 21 to 40 for active field service and over 40 for duty back of the lines. This will include mechanics, artisans and department workers. It is estimated that there are seven and a half million between the ages of 40 and 55.

British armed merchant troopship Moldavia was sunk last Saturday. It was filled with American troops, 56 of whom are reported missing. The missing men were largely those who were amidships and in hammocks on lower deck, and it is thought they were killed by explosion, for escorting ships saved the great majority of the men aboard.

Careful comparison of submarine activities for April, 1918, compared with those of April, 1917, shows sinkings this year less than one-third those of last year. It is now known that the submarines are being destroyed much faster than they can be built; also that the sinking of Allied vessels are at no time now equalling the launching or commissioning of the new vessels.

The German control and peace measures in various provinces of Russia are resulting in greater number of deaths and greater suffering than when Russia was in most strenuous war activities. During the past week it has been thought that faint promise of Russia's recovering herself was being made. It was rumored that Kerensky had landed in this country and that the few military leaders who have not been murdered were gathering the nucleus of a new army, but the only hopeful development has been that the increasing unrest is creating a more difficult situation for the Huns.

The long expected drive on the Western front began at dawn Monday morning. The outposts of the Allies were driven in and a few trenches were taken, but nearly all recovered in counter drive. The massed form of making the charge is still continued by the German troops and efficient machine gun fire is taking terrible toll. The charge was preceded by many hours of artillery fire and a deluge of gas shells. The Allies are now given a great advantage in having a superior air squadron. The charge is being made in two sections, the longest covering a 40 mile front in the Rheims sector with Paris as the objective; the other, along a line of much shorter frontage, farther north and with the seaports of Dunkirk and Calais as objective.

# A Message to Live Stock Breeders

By Private Stonerod, Battery C, 144th F. A., Camp Kearny

Cultivator readers who have come in contact with one of our former live stock field men, F. F. Stonerod, will be interested to have this word from him. He is now in the service of his country.

In addition to his work with the Cultivator, Mr. Stonerod assisted C. R. Thomas in planning the work of the live stock department of the Liberty Fair when that fair was under contemplation last fall. As Mr. Stonerod has had experience at both the Pacific International and the P. P. I. E., where he was aide to D. O. Lively, his suggestions as to California fairs have force.



OUR great commander-in-chief, President Wilson has so wisely said, "It is a privilege to live in this day and time and to take some active part in the fight for the liberation of mankind, and the cause of democracy."

Whether it be in the trenches, in the training camps, the home, the farm, or the office, the vast majority of Americans have during the past few months realized the gravity and magnitude of the world war and have combined to make our part in it worthy of our most sacred traditions.

The slogan that "Food will win the war," could not have been more appropriately chosen. Without the support of the American farmer on the one hand and the consumer on the other, adequate supplies to American and Allied forces in the field and populations in the different countries would never be possible. Through the efforts of Herbert C. Hoover and the food administration the critical situation at home and abroad was relieved, but we must never relax our energies in the slightest degree if we are to keep pace with the always increasing demands upon our resources.

California has fulfilled expectations to date in the food crisis. Her wonderful possibilities as an agricultural state were never so apparent. Meats, breadstuffs, minerals, fruits, she has poured into the yawning cavity of the world's bread basket, and this year she will do even better.

With these truths in mind, and with the idea of increasing production through the medium of the modern methods of intensive agriculture, the Liberty Fair Association of California, has planned a great exposition of the

state's resources and industries and has appropriately named it, "Liberty Fair." It will be held October 12 to 26 inclusive, in the beautiful and spacious new buildings at Exposition Park, Los Angeles.

The writer's intimate acquaintance with the agricultural and live stock industry of California leads him to believe that the farmers and breeders will make a special effort to make these the most important features of the fair, and thereby a big winner through the medium of their support. Certainly it will be a great mistake on their part if they do not show their products and their flocks and herds to the thousands of visitors who will pass through the gates.

Exhibits of this character are primarily educational. In comparing field crops and animals we demonstrate the fallacy of trying to produce inferior crops and animals at a time when the cost of maintenance is the highest ever known, therefore these departments of the fair will be worth many times their cost.

Favored by location, climate, and soil, this state is destined soon to be the greatest section in the world for the production of live stock, as it is, now, the richest in agriculture. Our sterling breeders have already produced many world-record individuals, and from henceforth the greatest need is increase in the number of the utility types of cattle, hogs, and sheep, and forage for their development.

From my place in the ranks at our big southern training camp, I view with amazement the vast quantities of foodstuffs necessary to keep a large body of men and animals in trim; and this is but one division, a drop in the ocean of the thousands that go to make up the enormous army which is planned to carry the war to a success-

ful conclusion. Fats are most vital to the existence of the race. The slightest decrease below a certain point in the food calories required to keep a fighting man in trim in a short time becomes disastrous. We are a meat eating people, and if the great Liberty army is kept supplied with this product and the needs of our Allies are looked after there can be no doubt as to the final outcome of the war no matter how long it lasts.

And so I would convey this message to the farmers and live stock men of California. Bring out your best products to the fairs this year. Make a particular effort to show the world what California is doing in one of her richest fields. Compete, compare, rival each the other, and if you will but keep in mind the educational feature of these exhibitions, the beginner will soon want to know how much it costs to produce a certain crop, or pound of beef, or pork, or mutton, and why the pure bred sire is better than the scrub; the farmer who has failed because he was unfamiliar with our practical and successful methods will want you to give him the results of your experience. Come prepared to answer and thus do your bit. Support the Liberty Fairs this year as never before.

## This Week's War Notes

There is rather more activity along the Italian front but no well sustained attack.

Mexico has severed diplomatic relations with Cuba. Presumably this is because of German intrigue.

The war department is preparing to manufacture a vast number of large seige guns to be used in levelling fortifications in the drive on Berlin.

America's transports are making good. "There will be a million men in France by July" is thrilling all the country to swifter and swifter action as manifested in every department.

Hun aviators Sunday night violated all considerations of humanity and



On the Range

—Courtesy of The Earth.



Established 1877

Forty-first Year

**The California Cultivator**

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
 Combined with California Cultivator 1914.  
 Livestock and Dairy Journal, Established  
 1901, Combined with California  
 Cultivator 1916

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**Saturday, June 1, 1918****OUR ADVERTISERS RELIABLE**

We guarantee our subscribers against  
 loss through dishonesty of any adver-  
 tisers in the Cultivator. We do not at-  
 tempt, however, to adjust trifling differ-  
 ences between subscribers and honest,  
 responsible advertisers, nor will we pay  
 the debts of honest bankrupts. Notice  
 of complaint must be sent us within 30  
 days from date of the transaction, and  
 the subscribers must have mentioned the  
 Cultivator when writing the advertiser.

**THIS WEEK'S COVER**

The California Cultivator has  
 often appealed for more general tree  
 planting, especially through the great  
 valley of the state. No tree gives  
 such magnificence and, at the same  
 time, usefulness as the wonder tree,  
 eucalyptus. Less than 30 years ago  
 the seed for the tree shown on this  
 week's cover was planted. This  
 photograph was taken a year ago.  
 Twelve years ago it was 112 feet high;  
 nine years ago, 120 and with a spread  
 of bough of 88 feet; today its circum-  
 ference is over 18 feet, and it is add-  
 ing to its girth from six to ten inches  
 yearly. It is the Eucalyptus viminalis,  
 next to the globulus the most  
 rapid growing of these wonderful  
 trees. This specimen was planted by  
 J. C. McCubbin and is still on his  
 place near Reedley close to the line  
 between Fresno and Tulare Counties.

**JURY TRIAL**

As a war measure let us post-  
 pone jury trials. Mind, we do not say,  
 discontinue them, but let the man who  
 wants a jury trial await the ending  
 of the war. War demands the best in  
 every man, and every one of us who  
 has served on an ordinary jury finds  
 little opportunity for manifestation of  
 the best that's in us. In any case,  
 right now we need potatoes more than  
 we do jury trials.

**GO TO WORK**

We imagine the Cultivator does  
 not appeal to very many of the idle  
 rich through its editorial page, so we  
 may all enjoy a bit of a hit at that

class by referring to the fact that no-  
 tice is being served on every one who  
 has ability to work that he's got to  
 get busy. Word has been sent from  
 Washington; "Go to work or go to the  
 trenches." There has been a sugges-  
 tion that 60 years shall be the limit,  
 but why leave out a lot of those fel-  
 lows that are just reaching efficiency  
 age? It is unfortunate that there  
 are those who neither toil nor do they  
 spin.

**GOING TO THE FAIR?**

It is none too early to ask read-  
 ers of the Cultivator regarding plans  
 for the coming fair. It will be held  
 here, there and everywhere, and the  
 various dates are from late August  
 until December, but while it is not  
 time to fill up the gas wagon for the  
 start to the fair, it is time to consider  
 the exhibit which may be made. The  
 best horse or cow or hog, sheaf of  
 wheat or piece of fruit which can be  
 grown on the ranch should be taken  
 to this year's fair. It is a time when  
 the impetus of rivalry may well be  
 used to induce ourselves to produce  
 more and better. Have the fair in  
 mind and take something at least.

**GOOD-BY**

Speaking of the exclusion of  
 German from the public schools in  
 this country, we note that in Germany  
 definite government order has been

**SAVE THE GRAIN**

Congress proposes to stop de-  
 struction of food grains in the making  
 of our toddy which lowers efficiency.  
 German owned breweries in this coun-  
 try have been charged with destroy-  
 ing more food in the production of  
 beer than have the German sub-  
 marines. A bill has been passed ap-  
 propriating \$11,000,000 to be used by  
 the president in food purchasing and  
 conservation. Now, sitting as a com-  
 mittee of the whole, the house has  
 voted, 69 to 58, an amendment prohib-  
 iting any expenditure of this fund un-  
 til the president shall have ordered  
 that no grains be used in the making  
 of beer. Congressman Randall of  
 California has said: "With an inten-  
 sive campaign of spying into flour  
 barrels and sugar bowls of every  
 family in America, the wholesale loss  
 of food through the operation of the  
 breweries, nine-tenths of whose pro-  
 duct is German-owned and made, be-  
 comes a positive scandal."

**PLAY FAIR**

When the boys are sent into  
 the trenches it becomes their duty to  
 draw a bead on the first Boche head  
 which appears on the other side of  
 No-Man's land. Likewise, it is his  
 duty to preserve his own life, if pos-  
 sible, for service of his country. We  
 who are behind the lines sustain him

**PREVENT THE FIRES**

The California state board of forestry, having in mind the great  
 losses which California annually suffers through the ravages of fire, de-  
 sires to impress upon the people of the state the great necessity of care  
 in the use of fire during the coming summer. Particularly at this time,  
 when the economic losses brought about by the war are the greatest the  
 world has ever known, should we all do everything in our power to lessen  
 the annual loss which fire causes. All the people of California should  
 remember how important it is that vegetation upon our water sheds be  
 protected in order that our subterranean reservoirs may be kept full.  
 To campers, to those who are making clearings, and to tourists who travel  
 through the mountain regions especially should the warning apply.—  
 William D. Stephens, Governor.

given that in bidding good-by at rail-  
 way stations or otherwise the use of  
 such words as adieu—which is French  
 —or other foreign language terms is  
 forbidden. There is no indefiniteness  
 in the order, for here is an exact list  
 of farewells from which the depart-  
 ing German may choose:

"Gott beschuetze Dich; Gott segne  
 Dich; auf wiedersehen; auf baldiges-  
 wiedersehen; auf sehrbaldigeswieder-  
 sehen, and auf ein rechtherzigesfro-  
 hesbaldigeswiedersehen."

**FARM ALLOTMENTS**

The state land settlement board  
 is now sending out its formal an-  
 nouncement of allotments which will  
 be made some time within ten days  
 after June 12. Applications may still  
 be made, but with this first parcel of  
 land to be allotted there are only 50  
 farms, and as there are several hun-  
 dred applications already in, other ap-  
 plications will only add to the difficul-  
 ties now before the board. We hope  
 the success of this land settlement  
 plan will result in other parcels of  
 California lands being subdivided.  
 Any other applications for these lands  
 must be made prior to June 12. Mean-  
 time, any one interested may secure  
 general information as to conditions  
 required by the land settlement act  
 by writing Land Settlement Board,  
 101 Agricultural Hall, Berkeley.

in every way possible and encourage  
 him to do his patriotic duty.

If he becomes tired and homesick  
 and of the opinion that he has served  
 his country long enough and "resigns"  
 from his job, he is promptly put up  
 against the wall and shot. "Serves  
 him right" is about the only comfort  
 his people on this side receive.

It is necessary to send food and  
 supplies to keep him well and active,  
 but there is a shortage of ships. We  
 are building more as rapidly as pos-  
 sible. The very life of the boys in the  
 trenches depends upon the early con-  
 struction of these ships. For some  
 reason, any old reason sometimes, the  
 builder decides to quit his job. Is he  
 any less guilty than the boy who de-  
 serts from the trenches? Common  
 fairness dictates the answer which,  
 unfortunately, does not seem to be  
 the true one when we consider the  
 method we have followed in both  
 cases. Let's be square with the boy  
 in the trenches.

In this connection, is it not timely  
 for American people to consider the  
 relationship of some Irish organiza-  
 tions and individuals in this country  
 to many of the treasonable acts which  
 have been committed? For our own  
 protection and for that of England,  
 one of our Allies, America should stop  
 these treasonable acts. While they  
 fight England they may be considered  
 enemies of the United States, but  
 when they ally themselves with Ger-  
 many there is no question. It is no  
 time for temporizing.

**COOPERATIVE INSURANCE**

When a farmer can get justice  
 in buying his goods or in selling his  
 products through the regular channels  
 of trade the Cultivator has believed  
 that these established agencies should  
 be used. The farmer's business should  
 be that of production, while the mer-  
 chant, who has made a life study of  
 his business, should be able to so  
 handle it that the producers can buy  
 and sell and still live. But selfish-  
 ness is still a factor in human nature  
 and it manifests itself unduly so often  
 that we have, many of us, been com-  
 pelled to look about for some method  
 we could use in self-protection.  
 Hence cooperation, at first so crude  
 that failure came oftener than suc-  
 cess. We have persisted, and today  
 thousands of farmers owe their very  
 existence to the principles of coopera-  
 tion which have been put into prac-  
 tice.

These principles have been worked  
 out in almost every phase of agricul-  
 tural endeavor, and in some cases  
 single organizations have been per-  
 fected that have handled millions. The  
 growth of cooperation has been  
 perhaps more rapid on the Pacific  
 Coast than in other sections of the  
 country. Only far-seeing people can  
 cooperate; they must be able to ap-  
 preciate the fact that a penny before  
 the eyes may hide many dollars a  
 few weeks or years removed.

One of the more successful of co-  
 operative efforts has been the hand-  
 ling of insurance. Cooperative frat-  
 ernal life insurance organizations  
 sprang up all over the country, at first  
 many failing because of lack of  
 proper observance of business princi-  
 ples, later succeeding admirably at  
 vastly less cost to the insured.

More recently came the farmers'  
 mutual fire insurance companies, of  
 which this state now has a score. The  
 effort has been to cut the cost of in-  
 surance into half that when carried  
 by the old line companies. This has  
 hardly been accomplished, for the cost  
 now is about three-fifths that of the  
 established board company rate, but  
 as some of these companies are find-  
 ing that their reserve is increasing  
 to a point where they are perfectly  
 safe as to any loss which may have  
 to be met, it is to be presumed that  
 the rate will be lowered.

The government is making a more  
 strenuous campaign against Sinn  
 Feiners and other traitors in this  
 country who are lead on and aided by  
 German sympathizers and German  
 gold. Many have felt that Irish sym-  
 pathizers in this country have been  
 emboldened by America's sympathy  
 for Ireland, but treasonable acts will  
 no longer be tolerated. John Dillon,  
 new leader of the Nationalist party,  
 has openly declared war on the Sinn  
 Fein.

Finland is now practically the kais-  
 er's. German rule has been accepted.  
 Prussian "business methods" are to  
 be installed for 20 years to come.  
 Finland is to be "permitted" to dis-  
 band all of her troops and Germany  
 will officer and raise other troops  
 should they be necessary.

Railway Director General McAdoo  
 has announced the advance in wages  
 for 2,000,000 railroad employees, the  
 order being retroactive, wages to be  
 gin-with January 1 last. This will  
 add \$300,000,000 to transportation ex-  
 pense.



# Agricultural News Notes of the Pacific Coast

## Northern California

The Glenn County farm bureau is organizing fire fighters.

A 10,000 acre rice tract in Yolo County is now being planted.

Placer County is organizing a farmers' mutual fire insurance company.

Sonoma County has organized a farm home department in its farm bureau.

Ord farm center meeting of the Glenn County farm bureau will be held June 4.

Peach growers of Butte County are holding for \$60 per ton, though best offers so far reported are \$53.

Farm Adviser Christiansen of Humboldt County is supplying 30 tons of potatoes to the war department.

Trinity national forest reports the first fire of the season, which was easily controlled by forest rangers.

Sheridan Center of Placer farm bureau wants to get rid of 1000 jack rabbits and is organizing for a rabbit drive.

It is estimated that grain fires in this state cause an annual loss of \$500,000. In almost every grain growing section fire fighting organizations or fire preventive measures are being promoted.

State Superintendent of Weights and Measures Johnson announces that all fruit shippers who do not follow the regulations of the net container act will find that their fruits are subject to seizure.

The Maywood Packing Company will enlarge its present plant by building a 40 by 180 foot addition. The new plant will contain concrete vats for olive curing which will have capacity of 400 tons.

A big evaporation plant has been constructed on the Horst place near Wheatland, and carloads of vegetables have already been forwarded as war supplies. One hundred twenty-five people are employed.

The California Central Creamery at Ferndale is carrying an interesting "side line" in a potato evaporator. Thirty tons of dried potatoes are to be delivered by June 1. This will require the use of 210 tons of raw potatoes.

Napa County grape growers recently met at Napa and resolved: "We pledge ourselves by every honorable effort to aid the California Grape Protective Association in resisting the avowed attempt of the prohibitionists of the state to have the prohibition amendment ratified by the legislature.

The California Irrigation Association maintains that in the past 16 years the reclamation service has spent only \$870,000 in California. During the same period the sales of public lands have exceeded \$7,000,000. On the other hand the state of Nevada has secured from the service nearly \$6,000,000, and her public land sales aggregate only \$656,000.

Solano County farm bureau has adopted a wage scale; hay men \$2.50 per ten hour day; separator men, \$6.00; tractor drivers, \$5.50; sack sowers, \$4.50; sack tenders, header tenders, \$3.00; header drivers, \$3.50; header wagon drivers, \$3.00; header wagon loaders, \$3.50; harvester drivers, \$5.00. Prices include board. Fruit farm helpers: \$3.00 per ten hour day; laborers board themselves.

## Central California

Stanislaus is organizing more rural fire units.

Porterville recently shipped 18 cars of grapefruit.

Kings County Elberta peaches are commanding \$40.

Oakdale, Stanislaus County, recently shipped 20 carloads of beef cattle.

California Associated Raisin Company will build a large packing house at Selma.

Fresno County chamber of commerce is getting behind the Pine Flat irrigation project.

Stanislaus County food administrator contemplates seizing flour stored in that county.

The president of the California Bean Growers' Association is organizing Modesto bean growers.

Fruit growers of the Reedley district recently met and discussed ways and means of securing labor.

The Raisin Association and the Peach Growers will cooperate so far as possible in the using of packing plants.

The Fresno chamber of commerce will abandon its exhibition headquarters, this in the interest of economy during war.

Apple growers of the Pajaro Valley are thinning apples. The work has been interfered with because of shortage of labor.

Livingston, Merced County, is endeavoring to secure the establishment of a packing plant by the Associated Raisin Company.

The large number of grain field fires have convinced many that there is a definite campaign on to destroy as much food in this state as possible.

Tulare County Pomona grange has appeared before the board of supervisors and requested the abandonment of county advertising during war.

Parlier, Fresno County, is discussing matter of better housing for the large number of helpers who will be needed for harvesting and shipping operations.

Food Administrator Merritt is still wrestling with the proposition of fish for which the fishermen get 7½ cents and for which the consumer pays 12 to 20 cents.

Thirty thousand people attended the bi-county (Tulare-Kings) rally at Mooney Grove. The picnic covered two days and 5000 autos were counted at one time.

County Commissioner Rutherford of Stanislaus is recommending that where it is safe to do so grass should be burned to destroy vast numbers of hoppers now hatching.

Farmers near Kerman are being urged to join in the Pine Flat Dam project. "Therefore, be it resolved that the Kerman farm center heartily endorses the Pine Flat project."

California tomato growers have filed complaints with the food administration because of alleged attempt of packing corporations to violate food rules in the matter of new contracts.

The interest in cotton planting in the San Joaquin Valley has induced some to look up its history and it has been found that the plant has been grown successfully since Civil War times.

## Southern California

Lima beans are coming up.

Brawley's first full car of tomatoes was shipped May 21.

Pomona, Los Angeles County, reports light crop of walnuts.

Rialto honey producers are shipping honey direct to France.

Riverside County has a fully organized field fire fighting company.

Bloomington, San Bernardino County, is to have a citrus by-products factory.

Southern California planting of potatoes is much lighter than that of last year.

Chino and Oxnard beet producing sections report a shortage of about 30 per cent in acreage.

It is estimated that Pacific Coast fruit growers will have to face shortage of 10,000,000 boxes this fall.

Orange County estimates 10,000 more acres of beans than last year. The total will be not far from 55,000.

The effort to close Bear Valley to campers so as to prevent fishing in Big Bear Lake is causing a general protest.

The more observing walnut growers maintain that the coming year's output will not be above 50 per cent of normal.

Nuevo, Riverside County, potato growers have organized and will join with the San Bernardino marketing association.

Orange growers of Tustin, Orange County, are loading their shotguns for fruit thieves.

Apple growers of Chino, San Bernardino County, owning about 100 acres of apple orchards, will cooperate in marketing their fruit.

Report has been made that fertilizer bought through the Fruit Growers' Supply Company has excess amount of dirt and sand.

Assistant Farm Adviser Hodgson of Los Angeles has been giving citrus pruning demonstrations in various parts of Los Angeles County.

The Elsinore farmers employing members of the Women's Land Army express entire satisfaction in the quality of the work furnished.

The counties of Imperial, Los Angeles, Orange and San Diego will grow about 5000 acres of cabbage this year as compared with 3800 acres last year.

Ventura is building a series of model camps under supervision of the state immigration and housing commission. These are for the accommodation of apricot cutters.

Ventura live stock men recently met with Forester Homans and President Nares of the California Live Stock Men's Association and organized for the protection of the industry.

Governor Stephens, in addressing producers who are discussing the labor problem, said: "If necessary to enforce a work program, the legislature will be asked to provide ample power. There isn't room in California for the loafer."

The freight rate, heretofore charged on the basis of estimated weight and ordered to be changed on May 22 to actual weight of lemon and orange boxes, will continue as in the past until September 1. This according to recent ruling of the railway board.

## The Coast and General

Salt River Valley, Arizona, will produce 35 carloads of honey.

Chandler, Arizona, expects the early establishment of a new cotton gin.

Both America and Canada now have rulings that every able-bodied man shall either work or go to war.

The Hood River Apple Association has just distributed \$82,000. The association has distributed through the year \$609,000.

Yuma reports cotton as of slow growth, which is acceptable this year because of scarcity of labor to "chop" and give best care.

The Southern Pacific Railway is joining in the squirrel campaign both on lands along its right of way and alternate sections which it owns.

The war trade board has issued a ruling that imports of rubber shall be restricted to 100,000 tons instead of 150,000 tons received last year.

The Utah experiment station has just issued a circular on the alfalfa weevil and is endeavoring to control this pest and prevent its further spread.

Packages mailed to American prisoners in Germany may not exceed 11 pounds and only one such package per month is allowed under ruling of postal department.

Farmers near Toppenish, Washington, are mildly suggesting to the townspeople who clean up their yards of old rubbish and cans and dump along in the farmers' fence corners that they will return the compliment if the practice is not stopped.

The department of agriculture is taking up the pink boll worm campaign in earnest and has cleared 8974 acres of cotton land of every stalk of scattered cotton. The cost of clearing has been \$9.94 per acre. The idea is to eradicate every stalk of cotton in the infested section.

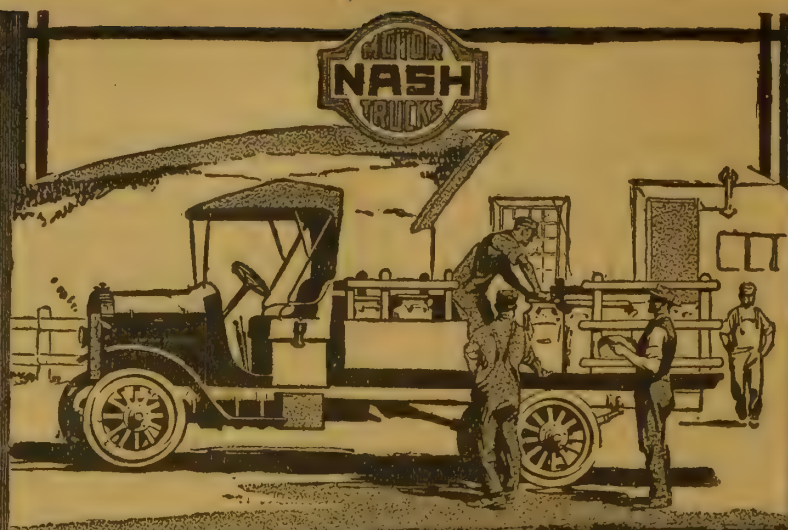
The federal government of Brazil will grant bounties in the form of agricultural machinery to farmers, companies and agricultural cooperative societies who will grow wheat during 1918. The premiums are more or less involved but, in a word, will approximate in value about \$3.00 per acre.

An organization has been formed in St. Louis which has for its aim the inspection of every farm where boys are to be sent to labor through the summer. It recommends as a step in guarding the health of the 250,000 boys who will work on the farms this summer a national "clean up and paint up" campaign.

America's stock of wheat is the lowest it has been since wheat was grown in this country. At the same moment Australia has 100 million bushels of surplus, with another 80,000,000 bushel increase from the new crop, while India's 70,000,000 bushel holdover has been increased by a new 50,000,000 surplus, and Argentina has another 150,000,000 bushels left over.

The food administration is insisting on conservation of wheat and other grains, not only on the home tables, but by all the threshing machines of the land. Investigation has shown that some conspicuously poor threshing has resulted in at least a ten per cent loss. More often the loss is not so great, but it is shown that in the average there is a loss of three bushels for every 100 threshed, and this is practically all preventable.





QUICK AND ECONOMICAL TRANSPORTATION

## Nash Trucks

### Haul Bigger Loads

Nash trucks, replacing teams, not only haul the farmers loads much faster but haul much bigger loads. They cut down the number of necessary trips to town in busy harvest time and greatly shorten the time required for each trip. In these days when the food production of the nation must be speeded up, this time saved to the farmer is a most important consideration. It enables the farmer to make every minute of his day count to full advantage.

Nash trucks are especially fitted to farm work because they are equipped with M. & S. automatic locking differentials. The driving wheels of Nash trucks cannot spin. They must always drive together. This saves tires and fuel. It lets Nash trucks get through where other trucks without this important feature cannot go.

Our transportation expert will be glad to tell you more in detail which Nash truck can serve you best.

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# NASH MOTORS

VALUE CARS AT VOLUME PRICES

(706)

## Constituents of Avocado



FROM an address on avocados as found in Guatemala Wilson Popenoe of the bureau of plant industry gives some interesting information regarding the constituents of the avocado. As to its analysis, and especially as to its content of oil, he says:

### Constituents of the Avocado

Thanks to the investigations of such men as Professor Jaffa of the University of California, we are gradually acquiring knowledge regarding the various constituents of the avocado and the proportions in which they occur. An interesting table published by Jaffa in Bulletin 254 of the agricultural experiment station at Berkeley shows that as a result of 28 analyses, including about 24 varieties, water was present in the pulp or edible portion of the fruit in percentages varying from approximately 60 to 80, with an average of 70. Protein was present in amounts varying from 1.30 per cent to 3.70 per cent, with an average of 2.08 per cent. The percentage of fat varied from about 10 to 30, with an average of 20.1. Carbohydrates were present in varying quantities, the lowest analysis showing 3.69 per cent and the highest 16.17

per cent while the average was 7.39 per cent. Finally, the amount of ash varied from 0.60 per cent to 1.93 per cent, with an average of 1.26 per cent.

As pointed out by Professor Jaffa in his explanation of these analyses, the total dry matter in the edible portion of the fruit is greater in the avocado than in any other fresh fruit, the nearest approach being in the case of the banana, which contains about 25 per cent. The protein content is also high for a fresh fruit, approaching closely that of some of the dried fruits in common use. In Professor Jaffa's own words, "so far as protein and ash in fresh fruits are concerned, the avocado stands at the head of the list, and, with reference to carbohydrates, contains on an average fully 50 per cent of that found in many other fresh fruits. These facts alone would warrant due consideration being given to the value of the avocado as a fresh fruit. The chief value of the avocado as food, however, is due to its high content of fat. This varies, as shown by the analyses, from a minimum of 9.8 per cent to a maximum of 29.1 per cent, with an average of 20.1 per cent."

## Nitrate

The work of transporting and distributing to farmers the nitrate purchased by the government for fertilizer use is proceeding as rapidly as possible, despite unavoidable transportation difficulties due to unexpected war demands for shipping.

It was originally contemplated that the 120,000 tons of 2000 pounds each of nitrate purchased under the provisions of the food control act would be delivered at Atlantic ports at the rate of something over 20,000 tons per month, beginning in January. At that time it appeared that deliveries could be timed in such a way that all applicants would receive, when needed, practically the full amount of their orders. Unfortunately, on account of unexpected war demands for shipping, it was impossible for the shipping board to assign vessels at the rate contemplated. In the circumstances it became necessary for the department to modify its plans of distribution.

The above is from statement issued by the United States department of agriculture and is a bit hopeful until it is understood that only shipments to southern Atlantic ports are being made. When the Pacific Coast will

receive shipments is not announced. To date 21,536 tons have been unloaded at Savannah, Charleston, and Wilmington, and of this amount, more than 17,000 tons have actually been shipped to farmers. On account of port conditions the railroads have not yet been able to move approximately 2822 tons for which shipping instructions have been given. The 2000 tons remaining on hand will be moved out in the very near future. Two ships carrying approximately 16,000 tons will be discharged this week at Mobile and Norfolk, and five additional ships, with a total tonnage of 26,500, are on their way to Chile for loading, and will discharge the greater part of their cargoes during May. A sixth ship of 7000 tons net weight has been tentatively assigned for carrying nitrate, making a total of approximately 72,000 tons which have actually been delivered in this country or for which transportation arrangements have been made. The department has assurance that the remainder of the 120,000 tons contracted for will come forward as speedily as possible. Unfortunately the Kentra, one of the ships assigned to move agricultural nitrate, was wrecked off the coast of Chile just prior to loading.

## Fruit Crop Estimate



FROM information gathered through county horticultural commissioners Chief Deputy Weldon of the state horticultural commission gives estimated percentages which will obtain in various counties with different fruits.

Almonds will be short crop as indicated by Mr. Weldon's figures. For instance, reports from the different counties show the following percentages: Alameda 55, Butte 40, Colusa 75, Contra Costa 60, Glenn 90, Lake 50, Los Angeles 73, Napa 70, Placer 75, Riverside 95, Sacramento 86, San Benito 100, San Joaquin 55, San Luis Obispo 99, Santa Clara 100, Solano 55, Stanislaus 82, Sutter 58, Yolo 60, Yuba 40.

Apples show far better. Los Angeles County estimates 100, San Diego 100, Santa Cruz withholds its estimate for the present, Sonoma 80.

Apricots: Alameda 65, Contra Costa 75, Fresno 75, Glenn 80, Kern 95, Kings 80, Los Angeles 60, Madera 55, Monterey 50, Merced 60, Napa 76, Orange 60, Riverside 75, Sacramento 80, San Benito 100, San Bernardino 84, San Diego 80, San Joaquin 50, Santa Clara 98, Santa Cruz 78, Solano 45, Sonoma 90, Stanislaus 78, Tehama 77, Tulare 90, Ventura 70, Yolo 70.

Cherries: Alameda 86, Butte 75, Contra Costa 80, Napa 95, Placer 80, Sacramento 90, San Bernardino 100, Santa Cruz 90, Solano 75, Sonoma 82,

Tehama 100, Yuba 90.

Figs: Practically every county reports 100 per cent. Only two counties report as low as 95 and those are not large fig producing counties.

Grapes show 100 per cent crop from practically every county reporting.

Grapefruit, in fact all citrus fruit, are reported as 100 per cent crops but it is yet early for estimating any of the citrus fruits.

Every county which reports on the olive crop reports full 100 per cent. Several counties, however, report insufficient information as yet.

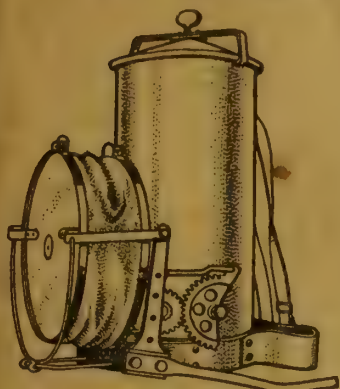
Peaches: Butte 75, Contra Costa 70, El Dorado 100, Fresno 65, Kern 90, Kings 100, Los Angeles 100, Madera 75, Merced 80, Napa 75, Placer 75, Riverside 80, Sacramento 75, San Benito 100, San Bernardino 90, San Joaquin 60, San Luis 85, Santa Barbara 50, Santa Clara 100, Solano 80, Sonoma 75, Stanislaus 75, Sutter 95, Tehama 90, Tulare 80, Yolo 80, Yuba 100.

Pears: Alameda 60, Colusa 75, El Dorado 100, Lake 100, Los Angeles 100, Napa 60, Placer 110, Sacramento 100, San Benito 100, San Bernardino 100, San Diego 100, San Luis Obispo 90, Santa Clara 100, Shasta 100, Solano 50, Sonoma 90, Sutter 85, Yolo 100, Yuba 100.

Plums: Butte 100, Colusa 100, Contra Costa 60, Los Angeles 80, Madera 65, Marin 90, Napa 60, Placer 70, Sacramento 75, San Joaquin 75, Santa Clara 100, Shasta 75, Solano 75,



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Sonoma 75, Sutter 90, Yolo 70, Yuba 50.

Prunes: Alameda 85, Butte 100, Colusa 100, Contra Costa 60, El Dorado 100, Kern 100, Kings 100, Lake 50, Madera 85, Monterey 75, Napa 60, Riverside 80, Sacramento 75, San Benito 100, San Diego 80, San Joaquin 75, Santa Clara 75, Shasta 90, Solano 50, Sonoma 75, Stanislaus 100, Sutter 90, Tehama 85, Tulare 75, Yolo 70, Yuba 80.

As to walnuts two large walnut producing counties, Ventura and Orange, report "insufficient information." Santa Barbara reports 70, other large producing centers report 100 per cent crop.

### CROP REPORT

J. S. Rhodes, Modesto, Stanislaus County

Apricots promise 75 per cent, almonds 80, apples 90, peaches, canning 75, drying 70, shipping 50, berries 90, cherries 95, figs 100, olives very heavy bloom, pears 90, plums 90, prunes 95, walnuts 90, oranges very heavy, grapes 100 all varieties.

Alfalfa condition good, cutting is in progress, barley 50 per cent, 1917 crop outside irrigation districts, full crop within districts, an average of about eight to ten sacks throughout the county; a large increase over last year's bean crop, 2500 acres all varieties now planting.

G. H. Flournoy, Horticultural Commissioner, Tehama County

Apricots 93 per cent, peaches 90, almonds 95, cherries 85, prunes 85.

### FUMIGATION OF CITRUS TREES

The investigations as to citrus tree fumigation have not been so general as they were a few years ago, but the department of agriculture continues to give some attention to this important feature of the citrus industry. Prof. R. S. Woglum is permanently located in Southern California and has now written another report, Farmers Bulletin 923. Copies may be had free by writing Division of Publications, U. S. Department of Agriculture, Washington, D. C.

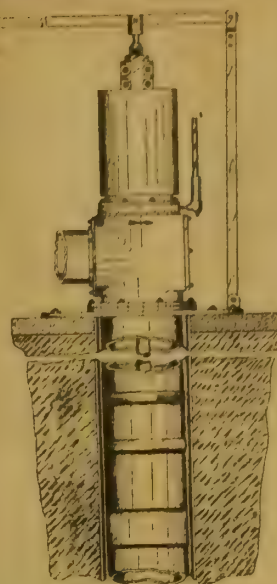
This bulletin contains a general account of the approved methods of fumigating citrus trees with hydrocyanic acid gas to control scale insects and white flies. It deals with methods of procedure, necessary equipment, chemicals of fumigation, and effect of the gas on insects and plants, and includes dosage schedules to be employed for the control of the various common citrus plants.

### DESTROY BERRY CANES ATTACKED BY ORANGE RUST

Orange rust is one of the most common diseases of blackberries and raspberries. It appears early in the spring on the young leaves of the plant. Very early the young leaves appear somewhat folded and deformed and on the upper surface minute black bodies are produced. A little later as the leaves further expand the under surface is covered with an orange colored material. These areas soon break open and a mass of orange colored spores of the fungus are set free. The affected leaves are dwarfed and more or less curled. The rust is rarely found on canes. The diseased leaves gradually fall off and the disease seems to disappear during June and July. The affected plants are noticeably stunted but are rarely killed, according to George M. Reed of the University of Missouri college of agriculture.

The fungus which causes the orange rust lives from year to year in the tissues of the raspberry and blackberry. It continues to develop throughout the growing season. Affected plants are almost certain to show the characteristic symptoms of the disease on the leaves in early spring, which is the conspicuous stage of the rust. The affected plants rarely produce any fruit of value. The number of infected plants varies greatly. In some cases the disease is so serious as to practically ruin the crop.

The only known remedy for this disease is to dig up and destroy the affected plants as early as possible. Careful examination of the plants during May will clearly show the presence of the diseased plants. These should be promptly removed.



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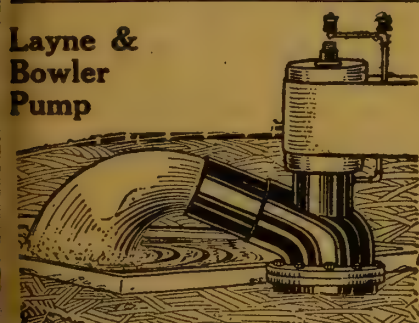
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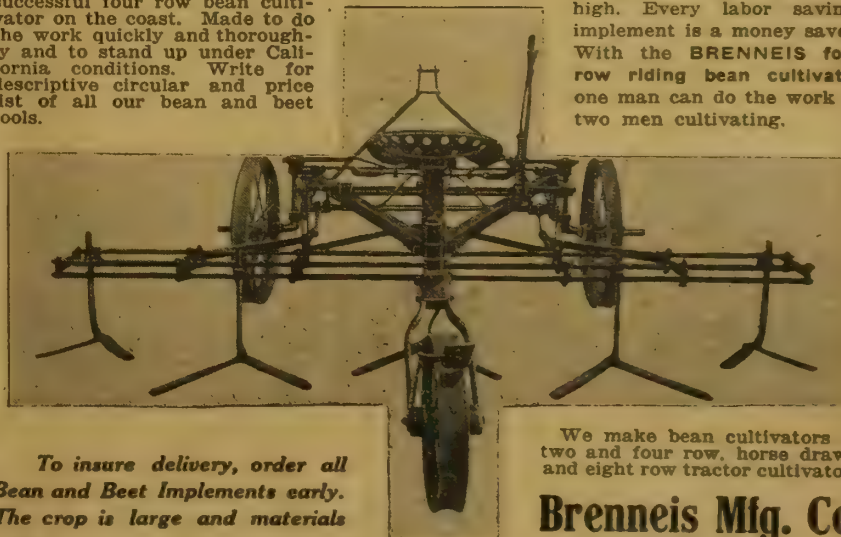
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## The Ohanez Grape

**W**E HAVE the following from the state board of viticultural commissioners:

The Ohanez variety of Almeria table grape is attracting widespread attention again in California, as the result of the free distribution by this board of some 20,000 cuttings of this variety of grape during the spring of the present year.

Over 1600 landowners in California made application for these cuttings and we were able to accommodate 1200 of them.

In our last bulletin we told of the possibilities of this grape and its wonderful keeping qualities, and we might add here that the Eastern handlers of table grapes are much interested in what California may do along the lines of cultivation of the Ohanez variety.

From an article by F. Richter written in French the board has had translated these items as to history and geographical area:

The Ohanez is a very ancient Spanish vine and the keeping quality of the grapes is excellent. Its culture in Spain has been very extensive during the last few years, particularly in the littoral of the Mediterranean, between Valencia and Malaga, but it is found a little everywhere in the Spanish Peninsula. The city of Almeria is the principal distributing point, as it is the center of fruit commerce, unique in the world by its importance inasmuch as they export annually more than 22,000 tons of grapes from the province of Almeria alone. It is surprising that a variety so valuable as the Ohanez, and which gives them so important a trade, is so little mentioned in ampelographic literature and that its origin remains so obscure.

"I wish, first of all, to make plain that the Ohanez is absolutely distinct from the Ragol, which certain authors

tend to confuse with this grape. The Ragol resembles the Ohanez very much at first sight, but it has neither the keeping qualities nor the delicacy of taste nor the fine appearance that distinguish the latter. It is generally agreed that the Ohanez comes from the region of Daria, in Ragol, and this is also stated by Simon Roxas Clement in his "Essay on the Varieties of the Vine Which Are Found in Andalusia." This assertion must be incorrect, for after the most searching inquiry that I have been able to make in the regions where the villages of Ohanez and Ragol are situated, and after the most careful reading of the records of these villages I have been able to establish that this variety was cultivated without doubt by the Moors, who have left some considerable vestige of the science of fruit culture. When they were expelled, the country remained uninhabited during a period of years; the ground remained uncultivated the full period of transition, and owing to these conditions, aided by the marvelous situation of the plain, amelioration was produced by the natural hybridization and the Ohanez as we know it today was the result.

"It was to such a situation as this that the farmers of Castile, who after taking possession of the country, restored the value to the ground and noticed this variety of grape stretching out its vigorous shoots in the trees. They quickly recognized the valuable quality of the fruit and saw again at Christmas time the superb clusters of grapes suspended from the vines in a state of perfect preservation. They multiplied the most fruitful stocks and thus made by this selection a well defined vine, to which the name of Ohanez was given and which seems to be the most justified."

## Destructive New Moth

The bureau of entomology of the United States department of agriculture is preparing to make an exhaustive survey of the Oriental peach moth, an insect of destructive feeding habits that is believed to have been introduced into this country during the past six or eight years in shipments of flowering cherries, peaches, etc., from Japan.

Fruit growers in many states will be asked to watch for the work of this moth, which attacks not only peaches and cherries, but apples, quinces, and some other fruits. The bureau will concentrate its inspection work in Virginia, Maryland, West

Virginia, Pennsylvania, Delaware, New York, New Jersey and Connecticut, in which states the insect is already present or its presence is suspected. Meanwhile "scouts" will be working north from Florida in the territory east of the Mississippi as the fruit ripening season advances. All the work will be in cooperation with state entomologists and other officials.

The survey is expected to enable the entomologists to make a more intelligent and specific attack on the insect. The undertaking is regarded as of particular importance at this time, because of the war time need to eradicate or control every form of insect attacking food supplies.

## Get the Codling Moth Before it Gets the Apple

A circular which should be of much interest to apple growers has just been issued by the Utah agricultural experiment station. In past years the experiment station has done considerable work on the codling moth, from which Professor Hagan, the author of this circular, has summarized the essential information for controlling the pest.

The first spray should be applied three to five days after the petals begin to fall, with the sole object of filling each calyx cup with the poison, for it is here that the worm which does the damage enters the apple. This should be followed ten days later by a second spraying. This will complete filling the calyx cups that are not open as early as the first spraying. The spray recommended by Professor Hagan is "arsenate of lead, about three pounds of paste or one and one-half pounds of powder to 50 gallons of water." Since the blossoms usually point outward, the spray should be driven down from the top, in from the side, and up from the bottom.

If the spraying has been done properly an examination somewhat later in the season should not show more than ten per cent wormy apples. If more than ten per cent are found wormy, a second spraying should be

applied about the first of August.

The trees should be banded about the first of July, which is about the time that the larvae begin coming down from the tree. The band provides a hiding place for the larvae, under which they crawl and remain. The bands should be removed about every eight days and the worms killed.

### OUR MONEY NOT WASTED

All of the money being expended for war purposes is not going to be a waste. Some of it is going to be shot away; some of it is going to be sunk at sea; some of it is going to be invested in machinery that will be useless in time of peace.

But a very great portion of it is being spent for things that will be as valuable when peace comes as now, though not so imperatively needed then—ships for instance. And as for the immense amount spent in adapting our manufacturing plants to war purposes, it is estimated that 90 per cent of our war machinery can and will be used for other manufacturing work after the war.

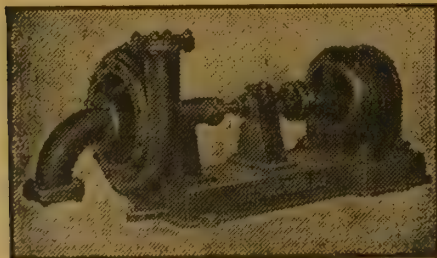
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Operated by either engine or horses, its purchase ordinarily does not result in extra expense for power. A team of horses or a 2½ H.P. engine or larger will operate it.

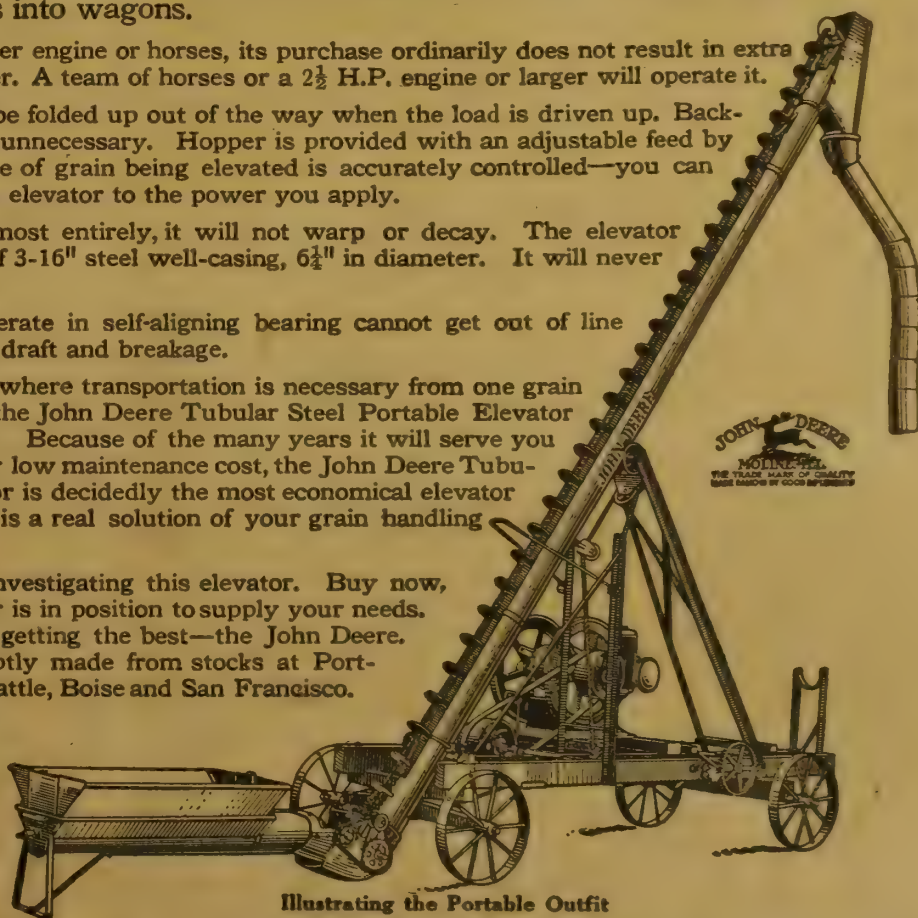
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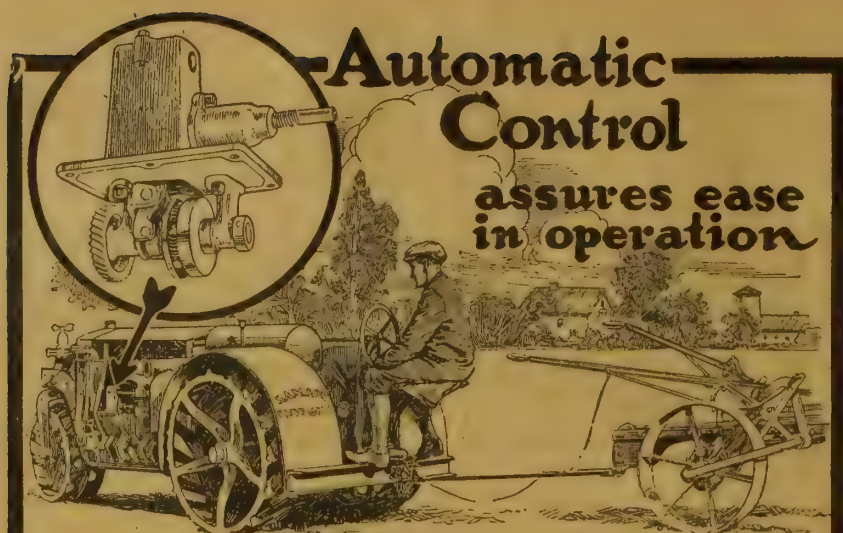
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## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Rabbit Skins

I have been sending rabbit skins to fur dealers and lately have had trouble with fur falling out. What can I do to prevent this?—Subscriber.

Both cottontail and jackrabbits should be skinned entire with exception of head and feet, dried flat without salt or any treatment. I have never had any trouble with the hair coming out, but of course in the molting season the rabbits would shed the hair easily. Most all of the fur dealers, especially those of St. Louis, would like to receive rabbit skins by the carload. They are used for lining aviation coats and it is our duty to get the skins to market if possible.—D. A. Gilchrist, Biological Assistant, United States department of agriculture, in charge of rodent control, Arizona.

### Nematodes

There is a belief held here by some that Blackeye beans will bring disease into the ground, I believe they call it nematodes. If I plant Blackeyes is there danger of introducing this disease?—Subscriber, Coachella Valley.

Nematodes is the name of a microscopic insect which is not introduced by the seed. If the soil is infested with these worms they will enter the roots of any plant, especially beans, causing root knots or galls, which greatly reduces the vitality of the plant. The same pest affects cotton, watermelons, tobacco, and other plants. Unless the pest now infests the ground we would plant beans or any other crop.

### Aphis

What can be done about aphis on a rundown place where trees and vegetables have been sprayed once but are still covered with aphis? What shall I use for spraying orange trees, and when?—Subscriber, Downey.

The tobacco extract—soap spray, the formula for which has often been given in the columns of the Cultivator, will control the aphis. Apply every few days, or as often as the aphis appear on the tips. As to spraying of orange trees, a question whose answer would have to cover such a wide range, we refer the inquirer to Cultivator special number on spraying, November 4, 1915. In a word, spray now with lime-sulphur, either dry or wet, for red spider. In mid-summer or fall, spray the various scale insects with any of the good contact insecticides.

### Irrigation

How much irrigation does field corn require? Will Sudan grass do well in very sandy soil? If planted about June 1 how much irrigation does it require, and can it be baled and kept for future use the same as barley or any other hay? Will horses eat it?—Subscriber, Downey.

Sudan makes a good hay though coarse and not equal to alfalfa. However, considering its large tonnage and its quick growth it is a very valuable hay. As to the amount of irrigation, it will range all the way from nothing to several thorough irrigations during the season. There are many soils which, if they have received thorough winter tilth, will carry sufficient moisture to mature one or two cuttings. There are other soils which are light and sandy with gravelly subsoil and so coarse that the water disappears by seepage and

evaporation, so that two irrigations per month might be necessary. But Sudan does not require such heavy irrigation as does alfalfa. If the soil has not received good tilth during the winter or after the rains fall, then a heavy irrigation before planting is necessary. One Imperial Valley planter recommends "heavy irrigation, plowing, another heavy irrigation, disking, another heavy irrigation, harrowing," and after such preparation he maintains the crop will grow without any further application of water. We may remark again, however, the nature of the soil is a determining factor.

### Olive Trees—Black Scale

Will olive trees breed black scale? Our grapefruit trees near them have black scale, yet we fumigate them. Would you advise cutting out the olive trees? Have well cared for three-year-old peach trees which have averaged up to this time a half dozen peaches and have very few leaves.—Subscriber.

Black scale manifests great liking for olive trees, but the control of scale on these trees should require no greater effort than on the grapefruit trees. Of course if the olives are not desired then they should be removed, but otherwise fumigation or spraying at the same time the grapefruit trees are treated would be best. Regarding the peach trees, three-year-old trees should not bear especially heavy crop of fruit, but they should have heavy growth of leaves. Possibly curl leaf has been so bad as to kill the leaves, or other trouble may have defoliated them, the cause of which only a study of the particular trees could determine.

### GROWING TOMATOES AT ELSINORE

M. R. Root of Head of the Lake tells how he has successfully grown tomatoes:

After determining the acreage to be grown, first secure one ounce of seed per acre. Use Stone variety for canning purposes, locate the seedbed convenient to water supply. Seedlings may be grown by two methods, first, by sowing seed thinly in rows 12 inches apart, irrigate by shallow furrows between rows. Second, by covering seedbed very thinly with fine fertilizer from the horse corral. Applying moisture by sprinkling, this slight covering of mulch prevents evaporation and crusting of the soil. When seedbed is thoroughly established, thin plants to three or four inches, thereby growing a short stocky plant, transplanting to field when four to six inches high. Moisten plant thoroughly when removing plants to prevent breaking roots. Tomato fields should be plowed deep, finely pulverized, then furrowed, after which a two inch dust mulch should be created to prevent evaporation. On the five acres of tomatoes I shall grow the land is heavy loam, moist; plants will be set nine by nine feet, requiring 537 plants per acre. Light soil say six by six feet, 1200 plants per acre. In planting to field abundance of moisture should be applied in all cases, plants should be set well down, as they are shallow rooted this prevents overheating the root system. Cloudy afternoons for setting out plants are desirable, after which, frequent shallow cultivation should continue until growth of plant prevents. Great care of vines in gathering fruit should be practiced to prolong the bearing season. In following the above suggestions remunerative crops should result.

I would suggest that inexperienced growers do not undertake too large an acreage on unproven tomato ground and locations. Have the acreage well distributed. One year's experience will demonstrate the profitable locations.

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TRY OUR NEW BRAND OF VENTILATED SULPHUR. SUBLIMED 100 PER CENT PURE FOR DRY DUSTING. SEND FOR ILLUSTRATED BOOKLET. ALSO PRICE LIST AND SAMPLES.

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Branch House—110 Main St., Porterville, Cal.

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At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

## Vegetable Planting Calendar for June in Southern California

Written for California Cultivator  
By D. F. Reichard



ON ACCOUNT of weather conditions crops in general this year will be short and somewhat earlier than usual. It behooves all who can possibly do it to replant their spring garden with summer growing stuff as soon as space is made available (by the removal of maturing crops). While the dry-farmers and the grain and stock ranchers will not be able to respond with the full measure they had hoped, the home gardens and all who have sufficient water at their disposal can and will help to a remarkable degree by increased production to make up for this unavoidable shortage, not in the same products but in substitutes.

Where peas come out put in corn, two or more rows of a kind at a time, even though the rows are only eight or ten feet long. The reason for this is that a better pollination is obtained by the pollen being blown from one row to the other as well as along the rows. Oregon Evergreen and Heath's Early are the best of the available varieties. Plant three rows 15 feet long every two weeks till the middle of August for a continuous supply for a family of three.

Where your crop of potatoes has been growing replant with beans. For dry varieties plant one pound to about 300 feet of row, which under ordinary conditions should produce 50 pounds of dry beans. When planting green beans use either Stringless Green Pod bush or Kentucky Wonder pole at the rate of one pound to 150 feet of row. Plant melons, squash and cucumbers where hardy root crops have been growing. Replace surface crops with root crops.

To get the desired results from the summer garden the soil must be properly handled. As soon as the spring crop is harvested thoroughly soak the ground and work it up well leaving the surface as fine as possible. Get the seed into the soil at once before the moisture evaporates. Be sure to have the seed deep enough to be in continual moisture till near enough the surface so as to get air enough for perfect germination and growth. Under these conditions the various crops should show above the ground without any further wetting. When the young plants are up enough to show the rows cultivate and if necessary irrigate between the rows. As soon as the ground is in working condition work the irrigated part with the cultivator so as to keep a finely broken surface. This should be done after each irrigation.

### JUNE PLANTING IN ARIZONA

The immigration commission of Maricopa County has issued a planting calendar for Arizona which will be of interest to many of our subscribers. In the June planting list we find:

In May and June we plant:

#### Vegetable Seeds

Casaba, pumpkin, peanuts and squash.

#### Flower Seeds

Cosmos, morning glory, all vine seeds and zinnia.

#### Field Seeds

Cowpeas, feterita, kaffir, millet, Sudan grass, milo, sorghums and broom corn.

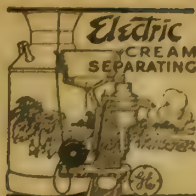
#### Fruits

Date plants.

We harvest: Tomatoes, melons, cucumbers, beets, carrots, onions, strawberries, blackberries, figs, plums, peaches apricots and apples.

### MARTIN LUTHER'S DIAGNOSIS OF GERMANY'S CASE

"In former times it stood well with Germany; but now her people are fallen from virtue, and are become rude and proud and insolent. Germany is like a brave and gallant horse, highly fed, but without a good rider. Germany is a rich, powerful, and brave country, but she is sore in need of a good head and governor. I often reflect with sorrow how utterly Germany rejects all good counsel in this respect."



## A Motor for Every Need

Just a glance at these illustrations will show you a few adaptations of



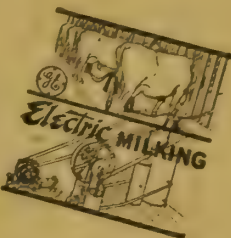
## G-E Motors

to various farming operations.

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Wherever the machinery is situated, the wires will reach it — after that only "throw on the switch" and the power is instantly available.

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## 150,000 Farmers Chose These "Z" Engine FEATURES:

1. Fairbanks-Morse QUALITY.
2. Economical in first and fuel cost, and low up-keep.
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4. Light weight, substantial, fool proof.
5. Gun Barrel Cylinder Bore.
6. Leak-proof Compression.
7. Complete with Built-in Magneto.
8. More than Rated Power.

Economy and efficiency, with "more than rated power" in an engine is the war-time-demand of farmers of America.

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So 150,000 leading owners have backed their judgment on the FAIRBANKS-MORSE "Z" Engine with \$10,000,000.

That's a lot of engines bought for reasons you'll find are wise ones.

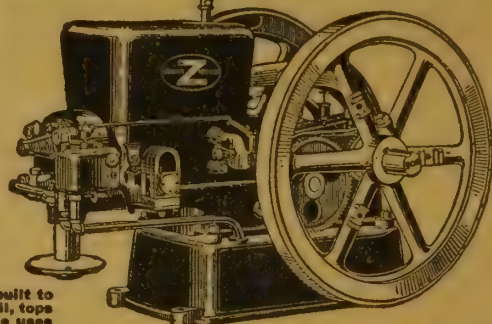
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The 3 and 6 H. P. sizes are built to use kerosene, distillate, stove oil, tops or gasoline. The 1½ H. P. size uses gasoline only.

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It is no ordinary grease  
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Its highest-quality petroleum grease would alone make good axle grease, but the powdered mica makes it better. It is the result of the Standard Oil Company's "know-how"—and the powdered mica. No hot boxes. Get a can from your dealer today.

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For Open Ditches, Reservoirs and Gravity Pipe Lines  
The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.  
**Hydrometric Co.** 955 North Main St. Los Angeles Cal.

## Sprayers for Garden and Truck Farm

By A. W. Morrill

**E**VERY vegetable grower needs a sprayer of some kind nearly as much as a shovel or a hoe. The average person who attempts to grow vegetables without giving attention to insect pests loses each season many times as much as it would cost to purchase and use a good sprayer. On the other hand there is considerable loss due to the use of sprayers which are not suited or not properly equipped for the work attempted.

### Common Types of Sprayers

Atomizer sprayers of the right kind can sometimes be used to advantage in spraying a few garden plants but the use of even the best of this type of sprayer usually represents a loss rather than a saving owing to dependence being placed on it when a bucket pump or one of the types of larger capacity should be used. Atomizer sprayers are of many different patterns and cost from 50 cents to \$1.00 each. In the writer's opinion they are all undesirable or worthless for garden use except the kind which gives a continuous spray and which has an extra cap or nozzle so that the spray may be directed either straight or at an angle. This angle cap makes it possible to reach the under sides of the leaves of low growing garden plants. This is an essential of all good garden sprayers.

Bucket pumps, properly equipped, are very useful in garden work and every gardener and truck grower needs one unless already provided with something better. Bucket pumps are sold by dealers at prices ranging from three to six dollars but usually they are poorly equipped for garden use. Unless properly equipped they are practically worthless for spraying purposes. Information concerning the equipment needed for this and other sprayers is given in another paragraph.

One of the most popular types of garden sprayers is the compressed air sprayer. The tanks are usually three and one-half or four gallons total capacity and are filled about two-thirds full of liquid. The desired pressure is obtained by means of an air pump and while in use the sprayer is carried under the arm by means of a shoulder strap. Fully equipped compressed air sprayers of this type cost from six to ten dollars. These compressed air sprayers have almost entirely taken the place of the knapsack type of sprayer which is carried on the back and requires continuous pumping by means of a handle which hangs down in front.

Hand lever pumps, wheel-barrow type, with tanks of a capacity from ten to 15 gallons can be used in spraying small home orchards as well as garden crops. One of the best of these sprayers with a small capacity nozzle can be used with 175 to 200 pounds pressure but for ordinary use from 75 to 125 pounds pressure, according to the nature of the work, is sufficient. This type of pump should have a mechanical agitator and a pressure gauge. When not supplied with the pump these gauges cost from \$2.25 to \$3.00 extra. A pressure tank attachment giving the advantages of a compressed air sprayer is well worth the additional cost of from \$4.50 to \$5.00. This pressure tank makes continuous pumping unnecessary. Fully equipped pumps of this type cost from \$25 to \$35.

In spraying large acreages of vegetable crops either barrel pumps or large capacity hand lever pumps are recommended. The latter are usually double action with horizontal cylinders. Such sprayers are mounted in wagons or on special carts and may be equipped for spraying from four to six rows at a time. Good barrel pumps usually sell between \$20 to \$25 mounted on a barrel and fully equipped. The large hand pumps fully equipped usually cost between \$30 and \$50.

One and two horse traction sprayers for spraying four to six rows of potatoes or other field crops cost from \$115 to \$150 fully equipped. These are provided with pumps geared to the wheels and can be operated with one man to a sprayer. The saving in labor expense and time in spraying large acreages soon offsets the dif-

ference in the cost between this and a cheaper outfit.

### Equipment for Sprayers

Bucket pumps and the small portable compressed air sprayers should in each case be equipped with three feet of three-eighths or one-half inch rubber hose, a three-foot brass extension rod, a right angle elbow joint and a nozzle. Certain nozzles are fixed at right angles (such as the side cyclone nozzles) while one has a swivel joint and can be directed at either 45 degrees or at a right angle. In such cases the right angle elbow joint is unnecessary. The nozzles which are ordinarily termed angle nozzles direct the spray at an angle of 45 degrees from the extension rod. For garden or truck farm use these should be combined with 45 degree elbow joints in order that the spray may be directed at an angle of 90 degrees from the spray rod.

The compressed air sprayers and larger types should have a shutoff connection located between the hose and the extension rod. A shutoff is useful but not necessary with the bucket pump.

The hose equipment should vary according to the pump used. Three feet is of sufficient length for a bucket pump or for a compressed air sprayer. The wheel-barrow type and larger sprayers should be provided with two leads of hose from ten to 20 feet long in each case. Heavy hose such as is used in high pressure spraying in orchards should not be used with garden sprayers since light hose, three-eighths or one-half inch size, can be handled in the field with less injury to the crops. Hose suitable for bucket pumps and compressed air sprayers costs from 15 to 18 cents a foot and for larger types of sprayers from 18 to 25 cents a foot.

The equipment mentioned above for spraying several rows of crops at a time is known as a row sprayer attachment or spray boom. Such attachments are listed by most spray pump manufacturers. The cost is usually between \$12 and \$15, including the nozzles.

A common mistake made by manufacturers of spray apparatus consists in supplying two-foot extension rods with garden sprayers instead of three-foot extensions. Another common mistake consists in supplying extension rods made of ordinary gas piping or equally heavy brass. Unnecessarily heavy rods are tiresome to handle and in the long run will not be handled as effectively as reasonably light rods. Brass rods should weigh only three to three and one-half ounces to the foot. This is about one-half as much as ordinary gas pipe rods. Aluminum rods are preferable to iron rods and are lighter but not as strong and will not last as long as brass rods. Extension rods for bucket pumps and compressed air sprayers should be made of quarter inch pipe with standard male thread at the outer end of the attachment of any standard nozzle or elbow joint. When a wheel-barrow type sprayer or a sprayer mounted in a wagon is used and it is desired to reach several rows of vegetable crops at a time brass lined bamboo extension rods should be used. Ordinarily eight-foot extensions are the most convenient size for such field work. In spraying tall trees extensions ten to 12 feet long are needed. The best brass and aluminum extension rods for bucket pumps and compressed air sprayers usually cost 25 cents a foot. Brass or aluminum lined bamboo extension rods for larger sprayers cost between 30 and 35 cents a foot.

It is impossible to define in a precise way the requirements of a spray nozzle suitable for garden and truck farm use. Generally speaking a nozzle suitable for such use should throw a fine and fairly uniform circular spray with a broken spray in the center and with a spread of about 70 degrees under pressure as low as 50 pounds. For ordinary purposes the nozzle should be of comparatively small capacity or less than one-half that of the large nozzles used with high pressure in orchard spraying. Nozzles which are suitable as to capacity range from 3-13 minutes to 4-16 minutes in discharging a gallon



of spray when operated with 50 pounds pressure. In gallons per minute this is equivalent to .24 to .3 gallons per minute or, roughly, between a fourth and a third gallon. In the matter of spreading, the best nozzles of several recently tested gave a spread of about 17 inches at a distance of 12 inches from the nozzle opening. In testing several nozzles which were satisfactory in the point of capacity a variation between 14½ to 17½ inches in the spread of the spray one foot from the nozzle opening was observed. A nozzle which discharges more than a third of a gallon of liquid in one minute under 50 pounds pressure and spreads the spray less than 14 inches at a distance of 12 inches should be regarded as unsatisfactory for spraying vegetable or garden crops. The spread of spray from a nozzle can be measured conveniently by laying the extension rod flat on the ground with the nozzle directed parallel with the ground and at the edge of a smooth dry area. After spraying for a few seconds the measurement of spread at the distance of one foot can readily be made. The capacity per minute can be determined easily by measuring the spray discharged at the given pressure. Nozzles which throw a flat fan-shaped spray such as the Bordeaux, are not recommended for garden or truck farm use. Nozzles of the Vermorel type usually throw the spray in the form of a hollow cone. The type of nozzle with a large eddy chamber and changeable discs with openings of two sizes, one for coarse and one for fine spray, throws a more evenly distributed spray than other common types.

Manufacturers sometimes make changes in their nozzles which affect their capacity and the type of spray which they throw. Furthermore nozzles vary considerably owing to imperfections. A disc type of nozzle, for example, throws a very imperfect spray when the opening in the disc is irregular or not perfectly centered. For these reasons it is unwise to recommend special nozzles. Nearly all of the leading spray pump manufacturers list in their catalogues a number of kinds of nozzles, among which one or more are generally suitable for use in spraying vegetable crops.

Those who buy direct from manufacturers should read carefully the specifications as given in the catalogues and in ordering state the use to which the sprayers are to be put. It is always desirable to have on hand more than one type of nozzle, and the adaptability of each type for different uses should be determined by special tests.

#### FARM IMPLEMENT INDUSTRY TO BE LICENSED

Presidential proclamation signed May 14, 1918, requires all individuals, partnerships, associations and corporations, except those specifically exempted by the food control act, engaged in the importation, manufacture, storage and distribution of tools, utensils, implements, machinery and certain other farm equipment, to secure federal licenses not later than June 20, 1918.

The secretary of agriculture is directed to carry out the provisions of the proclamation and the regulations thereunder. Licensees are required to furnish information regarding their businesses whenever it is thought necessary by representatives designated by the secretary, and must permit such representatives to inspect the property and records pertaining to their business. Information obtained in this manner is not to be disclosed without authority. Unjust profits, resales within the trade without reasonable justification, attempts to monopolize, unreasonable increase of prices or restriction of supplies, and willful waste of farm equipment are prohibited. Also, licensees are forbidden to sell farm equipment to persons known to have violated the food control act.

Applications for licenses must be made to Law Department, License Division, United States Food Administration, Washington, D. C., upon forms prepared for that purpose.

The Italian minister of agriculture has made obligatory the cultivation of certain staple food crops in excess of quantity formerly grown.

## Cut the Cutworms

Cutworms used to cut off my young garden plants, but of recent years I have used a method which prevents this injury. When transplanting cabbage and tomatoes I wrap a small piece of paper, three and one-half by four inches, around the stem. When the plant is set out one-half of this collar of paper extends beneath, and one-half above the ground. This prevents the cutworm from getting to the stems and is excellent insurance against these insects. I have never lost a plant wrapped with paper and consider this method of protection practical for the average farm and backyard garden.

In large truck patches and in the cornfields I have killed these worms quickly by means of poison bran mash scattered very thinly along the rows of corn or vegetables. The formula now used is as follows: Bran, one peck; Paris green or white arsenic, one-fourth pound; cheap syrup of molasses, one pint; two oranges or lemons (ground or chopped fine); water, three-fourths gallon. Mix the dry bran and poison thoroughly, then

sprinkle over it the sweetened liquid made by stirring the syrup and ground fruits in the water. The bran should be stirred while the liquid is being added, and then mixed with a trowel or hoe for a few minutes. This bait is scattered very thinly in the evening and is an effective poison with which to kill the worms. They feed at night, and by the next afternoon their dead bodies can be found on and beneath the surface of the ground. I use this method in my garden whenever the worms are cutting off plants grown from seeds and which have not been protected by the paper collars. I try to scatter the mixture too thinly for chickens to pick up, but am careful not to let the chickens feed where this poison has been spread.—Agricultural College Extension Service, Ohio State University.

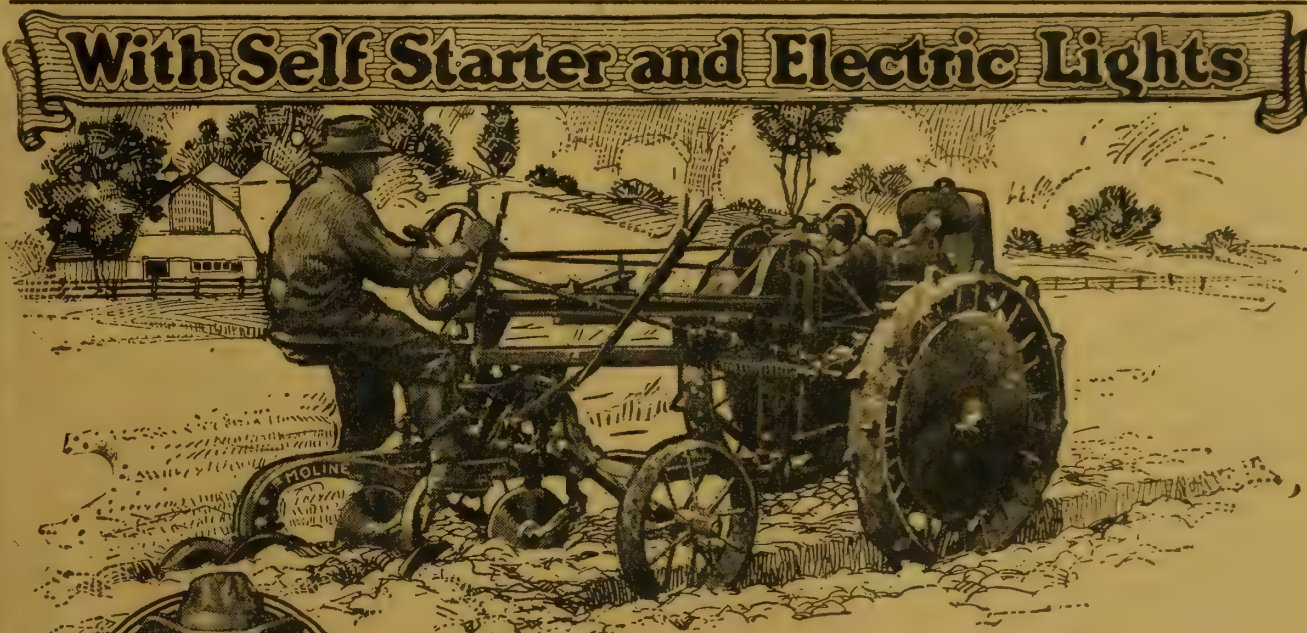
Ukraine stocks of wheat amount to approximately 48,000,000 bushels, according to information reaching the food administration. The north ports of Russia, however, are bare of supplies and the past winter has been very unfavorable to agriculture.

#### FARM SPECIALISTS

In our little town, oh! sad to tell,  
There's a merchant who doesn't know  
how to sell,  
A sawyer who doesn't know how to saw,  
A teacher who doesn't know how to  
teach,  
A preacher who doesn't know how to  
preach,  
A painter who can't paint very well,  
A printer who doesn't know how to spell,  
An odd-jobs man with never a job,  
A cobbler who doesn't know how to cob,  
A miller who doesn't know how to mill,  
A butcher who doesn't know how to kill,  
A racer who doesn't know how to race,  
A mason who doesn't know how to mace,  
A clocksmith who can not mend a clock,  
And a doctor who doesn't know how to  
doc;  
And, since none of these are busy men,  
You will find them again and yet again,  
Ever anon and a few times more,  
'Round the stove in Mendolsen's store,  
Each talking freely and through his hat,  
Doing the one thing they are expert at,  
Giving advice to farmers.  
—The Prairie Farmer.

Much of the acreage formerly allotted to melon growing in Italy will be put under wheat this year, according to reports received by the United States food administration. Native supplies of wheat in Italy are light.

The United States is obligated to send 1,000,000 tons of food each month to the Allies and is going to do it.



## With Self Starter and Electric Lights



Here's what one man and a Moline-Universal Tractor can do in one day of 10 hours:

- Plow 7 to 9 acres.
- Disc 27 acres with a 7-ft. tandem disc.
- Disc 38 acres with a 10-ft. disc.
- Harrow 76 acres with a 20-ft. peg tooth harrow.
- Plant 22 acres with a two-row planter.
- Plant 43 acres with a four-row planter.
- Cultivate from 14 to 20 acres with a two-row cultivator.
- Drill 35 acres with a 10-ft. grain drill.
- Harvest 25 acres with an 8-ft. grain binder.
- Harvest 10 acres with a corn binder.
- Mow 25 acres with an 8-ft. mower.
- Rake 40 acres with a 12-ft. rake.
- Rake 25 acres with an 8-ft. side delivery rake.
- Load 12 acres of hay.

In addition, it can be used on the belt for running threshers up to 24 inch capacity, silo fillers, corn shellers, feed grinders, wood saws, clover hullers, hay presses, pumps, lighting plants, etc.

There is no end of odd jobs that can be done with the Moline-Universal Tractor.

## Announcing the New MOLINE UNIVERSAL TRACTOR

### Model D

**B**ECAUSE of its ideal design, construction and performance, this new Moline-Universal Model D enables one man to farm more land and produce more food than ever before possible. It is the world's most dependable farm hand and solves the farm help problem.

#### Most Advanced Construction

New features include self-starter, electric lights, electrical governor, perfected overhead valve, four-cylinder engine that is free from vibration; complete enclosure of all moving parts; differential lock which increases traction in soft ground.

Every part is designed on the basis of quality and service. Drop forgings, heat-treated parts, steel cut gears and unusually large bearings add extra years of endurance.

These new features, together with the well known Moline-Universal type—all the weight on two wheels, one-man control and ability to do all farm work including cultivating—make the Moline-Universal Model D the best tractor that money can buy.

#### Phenomenal Pulling Power

Of its total weight of 3380 lbs., 98% is used for traction. That's why the Moline-Universal has phenomenal pulling power.

Conservatively rated at 9-18 horse-power, the Moline-Universal Tractor has more than ample power for heavy belt work. Its greater speed enables it to plow as much in a day

with two plow bottoms as the ordinary three-plow tractor. Yet it is light enough for such work as cultivating, mowing, etc., which do not require as much power.

#### One Man Operates Entire Outfit

The Moline-Universal attaches direct to the implement, forming one compact unit. It turns in a 16-foot circle and backs with the implement attached as readily as it goes forward. One man has complete control of the entire outfit from the seat of the implement and can thus do the same work that requires two men with other tractors. Operation of the Moline-Universal is so easy that a woman or boy can handle it.

In fact anyone who can drive an automobile can run a Moline-Universal Tractor.

#### Moline Tractor Implements

The greatest care has been used in designing a full line of implements for use with the Moline-Universal. "Moline" trademark on a tractor or implement is a guarantee of dependable service.

Moline dealers are now accepting orders for Model D Tractors, and our new and modern plant—the world's largest exclusive tractor factory—is being crowded to the limit in an effort to build tractors fast enough to keep pace with the demand.

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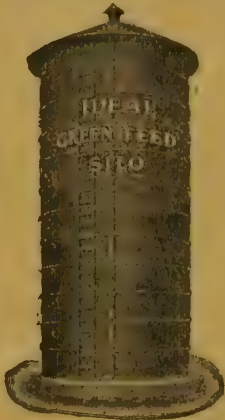


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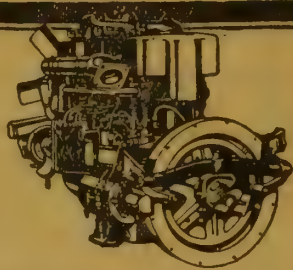
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A Promising Young Bunch

## Raising Dairy Calves

By C. V. Castle at Dairy Conference



HE problem of what to do with dairy calves is becoming more acute, as feed becomes higher and human food scarcer, and it is hard to decide what to do with some of the less valuable animals.

In raising the grade bull calves and undesirable heifer calves for veal, the best plan is to keep them entirely on whole milk and by feeding them heavily on it, get them to market as rapidly as possible. If the calves are big to begin with, you will likely make some profit; if small they will very likely be fed at a loss.

Where pasture is available some may be able to do better by raising these calves on skim milk and mar-

getting the calves over on the skim milk. The calf should know how to eat grain before making the change so that the starch in the grain may take the place of the butter fat removed from the milk in skimming. Skim milk is rich in protein and the starchy grains such as corn, barley, milo, and the mill feeds and dried beet pulp. From two and one-half to three pounds of such feeds will take the place of a pound of butter fat when fed with skim milk.

About a week should be ordinarily used in getting calves on to skim milk. A good plan is to substitute rather rapidly skim milk for whole milk until you are feeding about half and half, then wait a few days until the



Twin Helpers

Sired by King Korndyke Sadie Vale and out of Sunnyside Johanna Queen.

keting them as yearlings or two year olds.

In most cases only heifers from the best cows or pure bred heifers and bulls can be profitably kept past the veal age. Veal calves it is generally cheaper to feed heavily and get to a marketable age as soon as possible. With calves that are to be kept, ten to 12 pounds of whole milk for the larger calves and eight to ten pounds for the smaller, will give satisfactory results. Most calves will be ready to put on skim milk at eight weeks and many will do to put on skim milk a few weeks younger. With some pure breds it may be best to keep them on whole milk until three months old.

After a well grown calf is two to three months old it is a whole lot cheaper and probably better for the calf to be placed on skim milk. Calves fed on skim milk probably supplemented with grain will very often make larger gains than those fed on whole milk, and at the same time they are compelled to eat liberally of hay which develops their capacity.

Considerable care must be used in

calf begins to adjust itself to the new ration, then continue to substitute skim for whole milk until it is entirely on skim milk. No more skim milk should be given at first than whole milk was given. A calf can generally stand more whole milk than skim milk because of the laxative nature of the latter. Many feeders make the mistake of changing from a gallon of whole milk per day to two gallons of skim milk within a few days time. Increase the skim milk gradually until 14 to 16 pounds are being fed at the age of two to three months. Older calves can take care of larger quantities of milk than this although 16 pounds a day is a good average feed. Calves six to eight months old can drink 25 to 30 pounds of skim milk although where hogs are kept it is perhaps better economy not to feed quite so heavy. Alfalfa hay is perhaps the best hay for calves although with young calves, just changed on to skim milk, it is likely to prove too laxative. This feature can be eliminated by limiting the amount of hay fed or by feeding



Over a Thousand Dollars Worth

The youngster on the left sold some years ago for \$1000. She is a daughter of King Korndyke Sadie Vale. The other is a daughter of the same sire.



every other feed of oat hay or clean bright straw.

The amount of grain to feed depends upon several conditions, that is, value of the grain, value of the calf, etc., but as a rule young calves should get one-half to one pound of

grain daily, while larger ones should get from one to two pounds daily. The grain should not be fed in the milk but after the milk has been drunk. In this way the calf chews it better, and the grain dries out the calf's mouth and makes it forget the desire to suck another's ears.

In making a grain mixture for young calves quite a bit of attention must be paid to palatability as many small calves do not care for grain if it doesn't taste right. Barley, milo, or beet pulp will serve well for the bulk of the mixture, with a certain portion of bran, middlings or coconut meal added to make it more palatable. Calves like a rather light mixture with a certain amount of finely ground material which gives them the taste quicker than barley or oats, and for this purpose bran, middlings, or coconut meal serves very well. Linseed meal helps the palatability of a mixture and gives the calves a very thrifty appearance but for ordinary purposes there is nothing gained in feeding it. Middlings is a great feed for calves but it is too heavy to feed very much of it in a mixture. A rather cheap mixture would be dried beet pulp one part, crushed barley one part, wheat bran one part, coconut meal one-half part.

With present prices for grain feeds, and the high prices paid for milk and milk products, the tendency is to slight the calves. I do not think we are wise in doing this, and if we must cut down on feed bills, do it by culling out the poorer calves. One heifer of the right breeding and well grown, is better than three ordinary heifers for milk production in that she will make a neat profit, while two out of three ordinary heifers will not more, than pay for their keep, with their first calves. The length of time to continue feeding skim milk to calves depends upon several conditions, but in general, they should be fed skim milk until they are at least six months old and better yet until eight to ten months old. Calves born in fall and winter will be large enough by late spring to turn out to grass but spring calves miss the green grass and should have milk longer before trying to winter them on dry hay or pasture. It is poor practice to turn a bunch of calves out to shift for themselves after they have been weaned from milk, unless it be on to good green pasture, because at this age they should be pushed ahead and should not be allowed to become stunted. The right kind of a dairy heifer will not get fat enough to hurt her and heavy feeding develops the capacity of the heifer and gets her used to handling large quantities of feed.

The size of calves at different ages will depend upon the breed as well as upon the way they have been raised. Here at Davis, 18 heifers, of four different breeds weighed on the average 533 pounds at an average age of ten months. The largest weighed 800 pounds at ten months, and the smallest 375 at nine months. One Holstein bull calf weighed 724 pounds at seven months. In the well bred and well raised heifer calf lies the road to improvement in our dairying.

#### ABERDEEN-ANGUS IN CALIFORNIA

Foundation for a great Aberdeen-Angus herd is being laid on the Verdo B. Gregory ranch at Oakdale, Stanislaus County. Captain Gregory recently purchased from one of the leading Aberdeen-Angus herds in the state of Washington a bull and ten cows from the Congdon and Battles ranch. Captain Gregory has seen many years' service in the United States army and is now at the head of a large hospital at Joseph, Oregon, but is giving much attention to his Stanislaus ranch, where he has over 200 acres of irrigated land besides range land.

"I want to give California the greatest beef herd in the West," said Captain Gregory in telling why he chose Aberdeen-Angus for his farm. "The Aberdeen-Angus by their winnings at the world's greatest shows of cattle have demonstrated their supremacy in beef making. I have a theory that California climate, soil and breeders can take the best and beat the best from other sections of the world. This is a time for sound breeding work, and I have therefore chosen a practical herd rather than a kind better fitted as the plaything of a millionaire."

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## H. P. Slocum and Sons

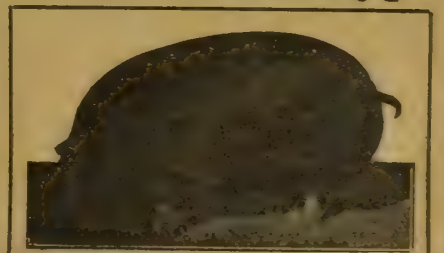
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Hard Sire, Dairy King of Arizona  
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## Dehorning Cattle

Dehorning cattle is almost universally practiced by stockmen who raise high grade steers. Cattle without horns are easier to handle, have an equal chance at the feed trough when placed in the feed lots, are less dangerous to attendants, and are more uniform in appearance. Also, they can not gore one another in the feed lot or in transit to market, which causes greater shrinkage in weight, injures the skin for commercial purposes, and leaves the flesh in a bruised condition, thus detracting from its value.

### A Simple Method

While there are many cruel ways of performing this operation, one of the simplest and easiest methods is to use caustic, either soda or potash, on the undeveloped horns of the calves. To obtain the best results the caustic should be applied when the calf is from four to ten days old. Clip the hair from around the knobs where the horns are developing. With a slightly moistened stick of caustic, rub each horn alternately three or four times, allowing it to dry each time before applying the next. Extreme care should be taken not to have the stick so wet that the solution from it will run down the side of the calf's head. To prevent the spread of the caustic, which will cause sores on the skin, apply vasoline around the edge where the hair has been clipped.

For older cattle, where the horns

have developed, either saws or clippers should be used. It is best to use the clippers on the young animals when the horns are still soft and tender, but with older animals which have hard, brittle horns the saw should be used. While the operation can be performed with clippers quicker and with less pain, this instrument is liable to crush the bone in older animals, causing a wound that heals very slowly.

### Time to Perform the Operation

Cattle should never be dehorned during warm weather, spring being the best time to perform the operation. If delayed too long in the season, the wound may become infested with screw worms, and flies are very annoying. Either coal tar or pine tar applied to the wound will prevent fly injury. If screw worms appear in spite of all precautions, they may be removed by saturating a piece of absorbent cotton in chloroform and inserting it into the wound, or by pouring gasoline into the wound. This kills the worms, which should then be removed with a pair of forceps.

In order to make a clean cut and avoid trouble in performing the operation, the animal's head should be held in a firm position. For this purpose dehorning chutes, the front of which consists of two strong pieces which can be closed firmly on either side of the cow's neck, are very convenient.

## Thirty Forty Pounders

Thirty pure bred Holstein cows now have achieved the proud distinction of having produced more than 40 pounds of butter in seven days. The two latest matrons of the dairy world to achieve such fame are Korndyke

pounder, freshened at the age of six years, one month, 27 days. She completed her seven day test with 649.6 pounds of milk yielding 40.14 pounds of butter.

Her sire is Woodcrest Nig De Kol,



Korndyke Winona

Winona and Segis Hengerveld Fayne Johanna.

Korndyke Winona freshened at the age of eight years, 23 days, and produced in seven consecutive days 683.4 pounds of milk yielding 40.28 pounds of butter. Her sire is Pontiac Korndyke and her dam is Miss Winona Mechthilde. She was bred by Charles H. Hyde, Watertown, New York.

Segis Hengerveld Fayne Johanna, the thirtieth "Black-and-White" 40

her dam is the great world's champion, Segis Fayne Johanna, the first and only cow of any breed to yield 50 pounds of butter in a week. She was bred by A. A. Cortelyou, Somerville, New Jersey.

Each of these great cows has yielded in seven days an amount of butter that it would take ten average cows to produce. Both are now owned by Pine Grove Farms, Elma Center, New York.

## The Efficient and Economical Jersey

Written for California Cultivator

**F**OR several years the Ohio agricultural experiment station has been collecting data to determine actual conditions existing on Ohio dairy farms. From investigations completed last fall it has published a summary of the results obtained as to the comparative economic production of milk and butter fat by large and small dairy cows. The Jersey represented

the small type. A number of herds were included in this investigation, located in different parts of the state. In this test for economic production, 371 Jerseys and 342 large type were used. The amount of feed consumed and amount of milk produced daily by each animal were accurately recorded.

I have not seen mention of this investigation in any of the California papers. It seems to me that in these

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Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$150.00 paid in doctor's bills."

Price \$1.00 per bottle. Sold by druggists, or sent by express prepaid. Write for Booklet R. The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

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Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

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We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

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days of extremely high priced dairy feed the results of an investigation into the economic production of different kinds of dairy cattle by an institution of the character of the Ohio experiment station should receive due publicity, for at this time most dairy-men are particularly interested in economic production.

An announcement of the results of these investigations is published in the experiment station's bulletin of October, November and December,

The maintenance ration required for a Jersey is less, therefore from an equal amount of feed supplied to each breed, the Jerseys have more left for the production of milk solids and butter fat after using the amount required to maintain their bodily and working strength. For the entire lactation period as shown by the Ohio investigation, the Jerseys consumed only 75 per cent as many pounds of digestible nutrients for each pound of butter fat production as did the large type.



Handsome is as Handsome Does

1917. A lactation period of ten months was considered. It was found that the Jerseys produced milk solids slightly more economically than the large type and produced butter fat considerably so. The illustration employed to express the difference is as follows: Considering the Jerseys 100 per cent efficient in the economic production of milk solids, in comparison the large type were 93 per cent efficient; considering the Jerseys 100 per cent in the economic production of butter fat, the large type were but 74½ per cent efficient.

The best Jerseys required 3.3 pounds of digestible nutrients for each pound of milk solids they produced. The best large type required 3.9 pounds of digestible nutrients for each pound of milk solids produced. The poorest Jerseys required 9.4 pounds and the poorest large type 11.8 pounds. Even when the amount of feed required for the maintenance of the animals was deducted, that is, nothing charged to maintain life and strength, it was found that the Jerseys produced butter fat more economically.

## Making Cottage Cheese

Cottage cheese is a valuable food and should be used in larger quantities than it is at the present time. It is comparatively cheap and may be substituted to a large extent for meats. Large quantities of skim milk now being used on farms for other purposes could be profitably turned into cottage cheese.

For the manufacture of cottage cheese, says L. G. Rinkle of the University of Missouri college of agriculture, fresh, sweet, skim milk should be used. Warm it to a temperature of 70 degrees Fahrenheit and let stand until it forms a curd. This will require from 12 to 18 hours. The curd should be smooth and soft, but firm. It should not stand until it begins to shrink and whey off, for then it will become too sour and tough when made into cheese.

After a good curd has formed, break it up gently and warm to 90 degrees Fahrenheit. This should be done very slowly and evenly. Allow the curd to stand at 90 degrees Fahrenheit for ten to 15 minutes, then pour out into strainer cloths. A heavy quality of cheese cloth serves best as a strainer. Flour or salt sacking is too heavy. The strainer is made by taking a square piece of heavy cheese cloth and tying opposite corners together. This forms a bag or sack.

The cheese should be hung up in a cool place and allowed to drain for several hours. When sufficiently drained the curd should have the consistency of thick mush. Care should be exercised to avoid overdraining as a dry cheese will result.

After draining, the cheese should have salt added at the rate of one ounce per ten pounds of cheese. Cream is sometimes added to give the cheese a richer flavor, but this practice is expensive.

Cheese cartons or containers make attractive packages in which to sell the cheese. It may however, be sold in crocks but should not be put up in tin containers.

Three or four precautions are necessary in making cottage cheese:

Don't let the curd get too old or sour before the cheese is made up.

Don't heat the curd above 90 degrees Fahrenheit as a tough cheese results.

Don't heat the curd too long as a

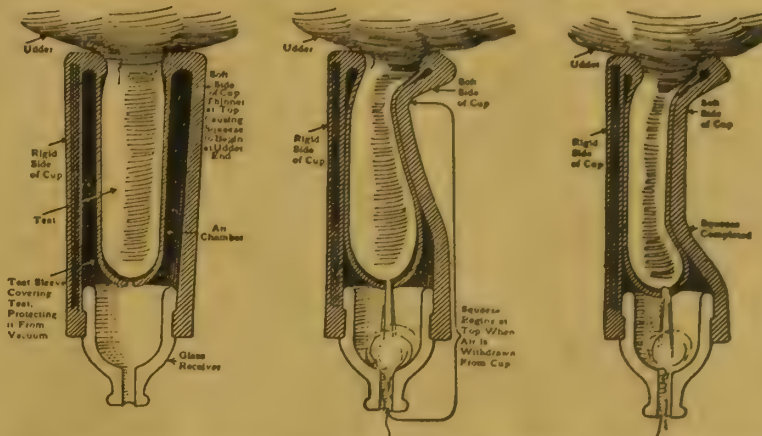
tough cheese results.

Don't hang the curd in a warm place to drain, because it will become sour.

A Rambouillet ram at the University Farm has just produced 30 pounds of wool in exactly 365 days. This fleece would have been worth \$18 if sold at the time of shearing when wool was worth 60 cents per pound. This performance gives the University Farm another state record. —W. D. J.

Too much effort makes men think that your selling task is hard.

## "The World's Best Milker" The "Calf-Way"



Note the "downward squeeze" principle. It means absolute protection to the cow's teats, and avoids pail stripping.

Broad, basic patents cover this feature, hence it is found in no other milker. Call or write for detailed information.

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consigns to



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## Pascoe Segis Pontiac

HER SIRE: King Segis Pontiac Jannek, who is by King Segis Pontiac and out of a 29.71 pound four year old daughter of Korndyke Queen De Kol's Prince, and she is dam of the sire of the 40.13 pound cow Albina Josie.

HER DAM: Forest View Wayne Korndyke, a 27.96 pound three year old granddaughter of King Segis Pontiac and De Kol 2nd's Butter Boy 3d.

SHE IS BRED TO: King Korndyke Pontiac 20th, the \$6500 son of Miss Valley Mead De Kol Walker.

We ought not to sell this heifer, but we yielded to the request to offer some of the very best heifers in our herd, the others being

TWO VERY CHOICE DAUGHTERS OF PRINCE JULIANA DE KOL WALKER, both of them bred to King Sadie Vale Rose, whose three nearest dams average 33.82 pounds butter in seven days, and he is a son of King Korndyke Sadie Vale. Both of these heifers are out of well bred A. R. O. dams.

A DAUGHTER OF KING KORNDYKE SADIE VALE 22ND, who is a 30 pound son of King Korndyke Sadie Vale, and a double grandson of King Segis De Kol Korndyke. This heifer is just now of breeding age and will be sold open.

We like the idea of offering only high class cattle in public sales, which solely is responsible for our decision to part with these good heifers.

**Pacific States Corporation**

Tagus Ranch

Tulare, Cal.



## Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 31,000 readers, weekly.  
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### TREES

**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, Cal. Phone, Anaheim Pacific 403-J.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Valencia Orange and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**Closing Out**—15,000 choice Orange and Lemon trees for sale. Marsh seedless grapefruit, Eureka Lemons, Washington Navel and Valencia. Two year old buds 30c each, or in hundred lots 25c. F. A. Anderson, Elsinore, California.

**For Sale**—Florida Sour Orange Seed Bed stock. Clean thrifty stocky. M. H. Howard, Fullerton, California. Sunset Phone 323W.

### SPECIAL

**SHARPLESS AVOCADO TREES**  
Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**Florida Sour Orange seedlings**, one year old. Write for details. Katsuragi, 23rd St., Upland, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, La-Manda Park, California.

**For Sale**—Citrus trees and seed stock at your own price. Write or come. B. C. Dodson, Glendora, California.

**For Sale**—Choice two year old Valencia trees. A. O. Hayes, San Dimas, California.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### SEEDS AND PLANTS

**Bean Seed For Sale**—We have good seed beans on hand of following varieties: Limas, blackeyes, large white, small white, pinks, Teparys, Henderson bush, Mammoth bush. Now selling bean bags for fall delivery. C. C. Collins Company, Santa Ana, California. Sunset 71; Home 172.

**Tepary Bean Seed for sale**. Lots of 500 pounds or over 10 cents per pound f. o. b. Puente or Hartville. Twelve cents per pound, smaller lots.  
Whittier Extension Co.,  
Van Nuys Building,  
Phones: 10421, Los Angeles. Main 2606.

**Sudan Seed for sale**, 17½c, Amber cane 7½c; Peterita, Egyptian Wheat, Red and White Milo Maize, Dwarf White Milo Maize, yield 21 sacks per acre, S. Peruvian alfalfa. Large orders, wholesale prices. Hay in car loads. Write for circular. Box 501, Fowler, California.

**Plant a Few Acres of Dwarf Milo Maize for seed**. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Recleaned Sudan Grass seed for sale**. Prices 30c pound for all orders under 100 pounds; 25c pound for all orders over 100 pounds. A. W. Greathead, Box 270 R. C., San Jose, California.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**For Sale**: Sudan Grass Seed—Horticulturist inspected. 100 per cent pure, heavy seed that will grow. 20 cents or market price, per pound. Wm. Ritchie, Riverside, Arlington, California.

**Sweet Potato Plants**, Yellow, 500,000, \$2.00 per thousand, cash with order. Home Phone 833. A. T. Hooven, Anaheim.

**June Corn**—Squaw corn. Plant now. One pound 15c, 2 pounds 25c. \$10.00 per 100 pounds. Western Seed Company, 116 7th Street, Los Angeles.

**For Sale**—Amber Cane Sorghum seed in lots of 100 pounds and over. For prices write P. O. Box 507, Atwater, California.

**Red Jersey Sweet Potato Plants** 50c per hundred. \$3.00 per thousand. Post Paid. R. M. Plympton, Arroyo Grande, California.

**For Sale**—Yellow sweet potato plants, \$2.00 per thousand. W. L. Lutz, R. 3 Box 7, Santa Ana.

### GEESE

**Mammoth Geese**—I am booking orders for eggs from my mammoth geese at 25c each. Ship any time. Order all you want. PEA FOWLS—Still have a few pair of young pea fowls at \$10 per pair. Order now, they won't last long. Chas. McNeely, Alhambra, Cal.

### GOATS

**Toppenburg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, California.

### MACHINERY

**FOR SALE—WHY BUY NEW?**

**SAVE YOU HALF**

**MATERIAL GUARANTEED**

**IRRIGATING PIPE**—1000 ft. 4-in. at 16½c; 300 ft. 3-in.; 500 ft. 8-in. at 38c; 400 ft. 10-in. 45c; 8-in. O. D. screw casing 95c; 4-in. riveted 16c.

**WINDMILLS**—8 ft. \$29; 10 ft. \$39; 12 ft. \$55 to \$65; 16 ft. \$95 cost \$280 new; costs nothing to run.

**DEEP WELL PUMP, BULLDOZER**, 20-in. stroke, with 7-in. cylinder, 100 ft. 8-in. casing, rods, all for \$225.

**HOW'S THIS?** 25,000 gal. redwood tank, \$95; 1500 gal., \$22; galv. drums, \$4; 30 gal. hot water boilers, \$3.50; 8000 gal. heavy corrugated galv. tank, \$135; 10,000 corrugated galv. tank, \$175; 900 gal. heavy riveted steel wagon tank, \$68; wagon tanks, \$28 to \$48; new, used redwood, galv. tanks, all sizes.

**ODDS, ENDS—CHEESE CUTTERS**, \$5; automatic chicken feeders, \$2.50 capacity 50 chickens; large rendering kettle, \$10; alfalfa cutters, bone grinders, blower, cable; heavy log chain and drag hooks, \$10; big hay fork, \$6.75; low down tank pump, \$7.50; wheelbarrows.

**DEEP WELL PUMP, DOUBLE-ACTING AMES**, pumps more with less power, \$145, or complete with 7-cylinder 100-ft. 8-in. pipe and rods, \$375. Large Myers Bulldozer pump, \$78; small size, \$42.50. No. 4 vert. B. & J. two-step centrifugal pump complete for 50 to 75-ft. pit, \$195. Many others.

**USED PLOWS, MOWERS, RAKES**, cultivators, single disc riding plow, \$47.50; 14-in. Gilpin Deere riding plow, \$32.50; 4-gang Stockton, fine shape, \$27.50; spike harrows, \$16; mowers, \$39.50; rakes, \$35; corn cultivator, \$45; spring tooth harrow.

**BET DRILLS**—Ready to ship, \$39. Sundries, cheapest in town; material guaranteed. Office DEMMITT CO., 120 No. Main, upstairs. Yards 816 Yale. Phones 15191, Edwy. 1984, Los Angeles.

### 12 INCH CENTRIFUGAL PUMPS

**For Sale**—Three 12 inch, automatic balanced, vertical, Byron Jackson pumps, in 32 foot frames of 12 inch steel channels; in perfect condition; complete with elbows and check valves, all like new. Ready for detail inspection and immediate shipment at plant of SACRAMENTO VALLEY SUGAR CO., Hamilton City, California.

### REMANUFACTURED PIPE

All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

### WEISSBAUM PIPE WORKS.

169 Eleventh St., San Francisco.

**Automobile Motors for Sale**—These used motors in fine condition; for stationary work, pumping or for tractor. Bargain prices. Big supply. Send for catalog. Economy Auto Parts Co., 490 Golden Gate Ave., San Francisco.

**Gasoline Engines**, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale**—One Holt Tractor, one 18-disc engine plow, one cook-house, one extra wagon, at Mojave. Will take bonds. Call or write. John Meyerott, 319 E. 35th St., Los Angeles.

**For Sale**—Holt 1911 Sidehill combined harvester, 16 ft. header, 16 inch cylinder, \$500; cash or terms. B. Buckley, Berendo.

### MISCELLANEOUS

**Fumigating Outfit For Sale**—About 200 tents, in good condition, large, medium and small sizes, with derricks and tent poles. Also a few tents suitable for stack covers. C. A. Bishop, 100 Bay State St., Alhambra, California.

**For Sale**—2000 ft. irrigating pipe following sizes: 1000 ft. 4-in. 16½ cents; 500 ft. 8-in. 38 cents; 365 ft. 10-in. new, 45 cents. DEMMITT, 120 No. Main, upstairs.

**For Sale**—400 ft. 3 in. surface irrigating pipe, 10 cents a foot. Galvanized iron in good condition, 20 ft. lengths; taper sleeve on end. H. J. Woodhouse, R. D. No. 1, Box 74, Pasadena, California.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Will Ship Box of lemons (45)**, prepaid, any place in United States \$1.00. Ernest Vince, Santa Barbara, California.

### WANTED

**Will Manage Ranch**—A strong, experienced and reliable Scotchman desires a position as manager on a ranch. He has had eight years experience in California and understands the breeding and caring for various lines of live stock; also field crops and orcharding. He is a man of family and a naturalized American citizen. Address Richard Duncan, 1037 W. 43rd St., Los Angeles, California.

**Wanted**—Motormen and conductors by Pacific Electric Railway. Age 18 to 35. Apply in person to Superintendent's office, 218 Pacific Electric Building, Los Angeles.

**Wanted**—A competent foreman for citrus orchard. Must be capable in the upkeep of pumping machinery. Married man preferred. References required. Address Box 97, Ducor, California.

**Wanted**—2 row used corn cultivators. M. C. V., General Delivery, Hollister, California.

### FARM LANDS FOR SALE

400 acres, stock and grain ranch 3½ miles Pleasant Valley R. R. station, Mariposa County, California. 100 acres cleared and tillable, nearly all could be farmed if cleared of the large oak and other trees. 3 and 6 room house. Large barn and out buildings. Blacksmith shop and tools. Fenced and cross fenced part hog tight. Family orchard and garden irrigated from springs. Average rainfall 29.88 inches. Grapes, olives, almonds, etc. grow without irrigation, feed in pastures and free outside range adjoining knee high. No alkalal or hard pan. Elevation 1500. Half mile to school and church, \$30 per acre, including 300 goats, 3 cattle, 3 horses, turkeys, and chickens and all farm implements. \$3000.00 cash, balance long time, 7 per cent. Fred B. Palmer, owner, Coulterville, California.

**New Openings**—State well located, offered first time regardless present value—town lots, acreage, some improved. Your patriotic duty this year to buy state land, to be sold for taxes. Get the money in the treasury, the land on assessment roll, and crops growing on land. Get bargain at one-tenth value. Because of drink, death, leaving country, etc.; years ago this property went to the state. Because of war, work and worry, most persons will pass these bargains to you. Put in your order now for new 1918 lists and particulars, any three counties, \$5.00. Any man or woman can buy on payments without residence. New law makes all safe. You get mineral and oil rights. Get busy or get left. Joseph Clark, Sacramento.

### HELP

We still need a few more settlers to finish our 6000 acres, which is being sold in 40 acre farms at \$25.00 per acre. Ten yearly payments at 6 per cent interest. By selecting your future home in this splendid tract at Bryant, Snohomish County you are not alone buying a fertile and productive piece of land, but you are buying the best investment in the state today. Railways, paved roads, schools, churches, canneries, creameries and mills.

The best proposition on the market for the man who wants a farm. For further information address the owners. BROWN-ELL LAND CO., 904 Third Ave., Seattle, Washington.

**No. 4501**: 50 acres Maryland mild climate, 5 woodland, 2 fine fruit, near railroad station, school, church and stores; produces wheat, corn, tomatoes, oats, etc. Two story shingle roof frame dwelling, 7 rooms, cellar, front and back porch, barn, corn house, shed, spring house, stable, smoke house, tool house, poultry house, tenant house. Near Baltimore. Price \$4000. Russell Realty Company, Baltimore, Maryland. Catalogue.

**Thirteen Acres at Rivera**, \$15,600.00, \$5000.00 cash, balance can be paid out of crops in five years if desired. Will take some trade. Excellent soil, pumping plant of about 60 inches water. Five acres, seven year Valencia, four acres, one year Valencia, balance deciduous, two thirds fenced. This year's crop ought to be \$3500.00. Commission to agents. Paul Jordan, 1½ miles south of Rivera.

**For Sale or Exchange**—60 acres rich, alluvial silt soil. Level, irrigated, ready for crop. Real alfalfa land. Domestic water on place. Plenty of irrigation water. 1¼ miles from town, churches, grammar and accredited high school. Half cash, half trade, anywhere. Make your proposition now. Chas. McNeely, Alhambra, California.

**40 acres at \$375 per acre**—30 acres in alfalfa, 10 acres in beans, one-half mile from paved Sherman Way Boulevard and electric car line San Fernando Valley; water piped on to land, terms. R. D. Tinklepaugh, 638 Van Nuys Bldg., Los Angeles.

**For Sale**—160 acre relinquishment in Kern County. Level valley land all tillable. Near live railroad town. Some improvements, clearing, plowing, fencing, well. Valley grows deciduous fruits, cotton, beans, alfalfa. Plenty of pumping water. Good prospects of gravity system. Electric power. Price \$10 per acre. Address J. Care Cultivator.

**Fine level farm land**, California, 160 acres, best of soil. Plenty of water. Near oil belt. Close to McKittrick. We had an offer from oil company six years ago of \$150 per acre. Price now for quick sale \$100 per acre. J. H. Rule, 415 Canal Ave., Wilmington.

**The Manteca Country**, rich, fertile, has been discovered. Bargains: Forty acres, alfalfa, dairy improvements. Sixty acres, dairy ranch. Forty acres highly improved. Inquire what you want. Walter Buchanan, Ripon, California.

**For Sale**—Fine Paying Lemon and Orange grove. Upland district, none better; 10 acres, ample water stock; good improvements. C. W. Knapp, El Centro, California.

### RABBITS

**Go into Business for Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**Money in Rabbits**—Raise rabbits for us. Will pay \$6.00 per pair. Send stamp for reply. H. E. Gibson Co., Arcadia, California.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

### FERTILIZERS

**Slacked lime** corrects sour, heavy soils, prevents gum disease and by correcting your soil wrongs you get better results from your fertilizers. Alfalfa, beans and peas are lime plants and need lime. Slacked lime acts quickly. Price low for immediate shipment. Gypsum supplied. H. B. Matthews, 495 Douglas St., Pasadena.

### POULTRY

**Our Annual Sale**—Breeders, eggs, chicks. Make room for youngsters. Surplus offered at half what they cleared 1918. Pens, trios, pairs, hens, eggs, males below half. Chicks reduced. Leghorns, Wyandottes, Reds, White, Barred Rocks, Anconas, Minorcas, Ducks, Turkeys. Some greatest hens in California; trap-nested by government, 200-283 eggs yearly. Limited number. James Beeson, Pasadena, California.

**Model Poultry Farm**, White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

**Baby Chicks**—All good strong youngsters. Hatches every week. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Black Minorcas, Anconas. Also hatching eggs. Write for circular. J. H. Stubbe, Campbell Poultry Ranch, Campbell, Cal.

**For Sale**—Lo-Glo, Electric incubators and hovers, absolutely guaranteed. Send for circular. Winning strains Rhode Island Red eggs, \$1.25 for 13. Breeders ready for delivery and orders taken for baby chicks. Greenleaf Bros. & Cushman, 2228 Greenleaf St., Santa Ana, Cal.

**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks** with the Stevenson Hatchery, Watsonville, Cal.

**White Rocks, White Wyandottes, Rocks, Reds, Anconas, Minorcas, White, Brown and Buff Leghorns**. Folder and price list. E. W. Archibald, Soquel, Santa Cruz County, California.

**Chix**—Buff, Brown, and White Leghorns (Barron strain), Anconas, Minorcas, Reds, Orpingtons, Rocks, Silver Campines and breeding cockerels. Enoch Crews, Seabright, Cal.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**"Eastman's Bred-to-Lay"** Hoganized, trap-nested Barred Plymouth Rocks; chicks and eggs. Fairmead Poultry Farm, Fairmead, California.

**Buff Orpingtons, Buff Ducks, Bourbon Red turkeys**. The Ferris Ranch, S. Reservoir, Pomona, California.

### CATTLE

**Auction of a Complete Dairy**—75 grade Holsteins and 20 grade Jerseys. Herd in cow testing association for 3 years, records announced at sale; tuberculin tested regularly for the past 7 years, last test February 1, 1918, by a deputy state veterinarian, no reactors. Sold subject to tuberculin retest by the buyer. Holsteins mostly first, second and third calf granddaughters of King Segis Pontiac Emperor and Lorena Korndyke, both grand champion bulls at California State Fair. Jerseys bought as calves from the noted Mitchell herd that has been tested for butter fat regularly for ten years. All heifers in sale out of dams that made over 300 pounds butter fat in one year. The herd has been reduced half during the past year, retaining only the cows that made over 300 pounds butter fat in one year. Only two cows with blemished udders in the herd. Cattle loaded on cars free of charge. Will also sell one ton Remington ice machine; brine tanks; pump; dairy equipment, including cans and jackets for shipping inspected milk; bottling machine; bottles, etc.; one fine saddle horse, weight 1200 pounds, and he is a beauty; six Percheron colts, growthy fellows with bone and substance. Owner donated heifer to be sold for benefit of Red Cross and Red Cross lunch will be served. Terms of sale \$100 and under, cash in hand; sums over \$100, six months time with bankable note at 7 per cent; a discount of 3 per cent for cash on sums over \$100 will be given. Sale will be held on Wm. Watt Ranch, 2½ miles northeast of Napa, California at junction of Napa Soda and Berryessa Roads, beginning promptly at 10 o'clock A. M., Saturday, June 15, 1918. Owner, Wm. Watt, Napa; auctioneer, Col. Cy. N. Clark, Modesto; sales manager, C. L. Hughes, Sacramento.

### AUCTION

**On Tuesday, June 4**, we will sell at public auction, 40 head of choice Holstein cows and heifers, giving milk and coming fresh soon. There are also hogs, and a few milch goats. This stock all A-1 and is being sold on account of sickness. The sale will be held at the McCullen Dairy, corner of Indiana and Van Buren streets, Riverside, California half mile south of Arlington. There will be a free lunch at 11:30 and the sale will commence at 12:30 P. M. W. C. Lookingbill, auctioneer.

**For Sale**—Guernsey bull, Coras Reputation of the Rancho, 32102. Sire, Glendette of Pinehurst; dam, Cora May. Born December 13, 1914. Bred by Knickerbocker Ice Co., Crystal Lake, Illinois. We are going out of the dairy business. This bull for sale at a sacrifice, price \$300. Floribel Farming and Cattle Co., Box 71, Hanford, California.

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies**. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

**Shorthorns**—Several fine straight range bred bulls of high quality, ready for service, also some splendid yearling heifers. Fair Oaks Ranch, Willits, California.

**For Sale**—One registered Guernsey bull four years old. Abram Marron, Jr., Box 10, Oceanside.



## CATTLE

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., Cal.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, Cal.

**Registered Holstein Bull**—Straight, strong constitution, well marked, good pedigree. Write to Sunnybrook Ranch, Wilts, California.

**For Sale**—One of Tehama County's best dairy herds. All fine grade Jersey cows, also young stock. Will sell in part or all. John Risse, Los Molinos, California.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires** (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

**Sunshine Farm Jerseys** — Bulls from officially tested dams for sale. E. E. Greenough, Merced.

**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys** — 1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

## HOGS

**BERKSHIRES GUERNSEYS GRAPE WILD FARMS**

A few fall boars left by Royal Superbus — also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.

A. B. HUMPHREY, Escalon, San Joaquin County, California.

**Make Big Money** — Pork prices jumping up. Breeding stock scarce. Next winter will see the greatest shortage of hogs and the highest prices ever known. Prepare now by getting some Whitten Ranch Poland-Chinas — the prolific, easy-feeding money-makers. Prices reasonable; satisfaction guaranteed; everything immune. Send for valuable free booklet, "Hogs for Profit." Ranch in Tulare County, but write R. H. Whitten, 519B Marsh-Strong Building, Los Angeles.

**Poland-Chinas** — Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or L. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

**"Billiken" Chester Whites** — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Rancho Rublo Ducos** — Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for \$25.00. Elmer Lamb, Ceres, California.

**Mule Foot Hogs**, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gum."

**Duroc-Jerseys** — Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

**Large Yorkshires** — The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**Large Type Poland Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

**Duroc-Jerseys** — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

**Greenwood Farm Ducos** — "Size with Quality." H. C. Witherow, Palo Cedro, California.

**HEWITT'S BIG TYPE POLAND-CHINA** gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

**Registered Ducos of the big type** — Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Berkshires** — A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Wilts, California.

**Carruthers' Farm Berkshire Hogs** — Our herd won Premier Exhibitor prize at the P. P. E. Exposition, Mayfield, Cal.

**Poland-Chinas** — A few good breeding boars. S. F. Williams, Orland, Cal.

## AUTOMOBILE ACCESSORIES

Forde can burn half coal oil, all distillate, or cheapest gasoline, using our 1918 Carburetor; 24 miles per gallon guaranteed. Easy starting. Great power increase. Attach it yourself. Big profit selling for us. 30 days trial Money back guarantee. Styles to fit any automobile. Air-Friction Carburetor Company, 213 Madison Street, Dayton, Ohio.

## Ship Better Eggs



FOR years the department of agriculture has been waging war on waste of all kinds, giving particular attention to the great losses in shipped eggs. The Cultivator has passed along these suggestions, and we doubt not the campaign has resulted in material saving to the country. It is probably true that the Pacific Coast needs these lessons less than egg shipping sections farther East. In fact, we may say certainly there is less need here, for statistics show that the losses in the large market centers of the Coast and Mountain states show lower percentage of loss than in New York and other Eastern centers.

But, added to the difficulties of ordinary times, stress of war is making necessary greater care. Regardless of greater economy, every bit of the food which is so greatly needed must be conserved. In addition to the campaign now being conducted by experts of the department of agriculture, state institutions, farm agents and others are taking up the fight. Joining these are transportation companies. The report given to us by the travelling inspector of one of the companies of the country shows that on account of the increased cost of all kinds of packing material and the difficulty in some instances of securing proper containers, many shippers of eggs have been using orange, lemon, shoe and miscellaneous boxes

which were not intended for the transportation of eggs. Transportation companies will in the future refuse to accept shipments of eggs in any other containers than egg cases.

Shippers of eggs should see to it that egg cases are substantially nailed and that a cushion of excelsior, straw or corrugated cardboard is placed in the bottom of all cases and a similar cushion of excelsior, straw or corrugated cardboard on the top, and you should also see to it that all fillers are substantially new and fit snugly into compartments in order to prevent shifting.

All second-hand light or so-called Eastern cases must be roped or wired on each end, otherwise the transportation company will refuse to accept them for shipment. See that all old marks are effaced and that each case is marked plainly and substantially with shipper's name and address and consignee's name and destination.

The department of agriculture has issued three bulletins which will be of value to every egg handler: bureau of animal industry Bulletin 160, "Care of the Farm Egg," an illustrated 56 page bulletin (write for it to Superintendent of Documents, Government Printing Office, Washington, D. C., 15 cents). Others which will be sent without charge are: Bureau of animal industry Circular 140, "Egg Trade of the United States;" Farmers Bulletin 594, "Shipping Eggs by Parcel Post."

## Prevent Egg Losses

The proper handling of eggs is not a one-man job. Many people are concerned in it. Their interests are common, and mutual understanding and cooperation between them benefit all alike.

The producer's part in the general scheme of good marketing is to bring good eggs to market. To accomplish this he should market his eggs frequently; not let them accumulate.

The dealer's job is to keep the eggs good. His slogan should be "Ship promptly and properly." The sooner an egg is put under refrigeration and started for the market the better its quality when it reaches its final destination, and the higher its value.

A stale egg pleases no one. Heat is the egg's enemy; cold is its friend. Precooling eggs before shipping them, therefore, saves food material. It checks the development of "blood-rings," which occur in fertile eggs subject to incubating temperature (63 degrees or higher). It prevents "ad-dled" eggs; the term applied to eggs when the membrane between the yolk

and the white breaks, allowing the two to become mixed. When the eggs are warm this delicate membrane becomes soft, in which condition it is more liable to break by jars which are unavoidable in transportation. Chilling makes the eggs stiff and jellylike, and cold eggs ride best. Precooling retards evaporation, the cause of shrunken eggs. Eggs just laid are full, but 65 per cent of their contents is water. As this water evaporates the quality of the eggs is reduced. Warm temperatures aid evaporation. Precooling helps to make a uniform product, and this is a day of standardization. A weak spot in the egg is the lack of uniformity or standardization for its product. If each case of eggs received at the market is exactly like the last one, the shipper could establish a reputation for uniformity.

Eggs to be shipped should be well packed in clean, standard egg cases. They should be kept under refrigeration and sent to market in properly iced refrigerator cars which retain their good quality. Refrigeration during transit maintains quality, weight, fresh appearance and food value. It retards loss of quality, shrinkage, "blood-rings" and loss of food value.

## EXPERIMENT WITH TURKEYS

That proper care and scientific feeding are more important factors than available range space in the successful raising of turkeys is shown in the results of an experiment carried out by the poultry division at the University Farm at Davis.

One lot of turkeys was hatched last year in incubators and was raised in brooders. They were confined in yards at all times and were never allowed access to free range. Of the original 105 birds, 83 were raised to maturity. This represents 79 per cent and is a high average. The males at seven months of age weighed 17 pounds 12 ounces. The results of the test show that it is not essential in the production of turkeys to have a large amount of range available for the birds.

Consul Winslow at Auckland reports:

As a fair illustration of the rabbit pest in certain portions of New Zealand, and especially in the drier sections of the South Island, it is stated that on an estate lately taken over by the New Zealand government, comprising 12,446 acres of freehold and a pastoral run of 19,250 acres, there were killed or captured about 120,000 rabbits in order to clear up the property so as to make it suitable for the location of returned soldiers.

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## Macabee Gopher Trap



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## Household Department

## HONOR THE BOYS

Written for California Cultivator  
By Ida May Blake

Come let us honor our soldier-men,  
The boys of "sixty-two,"  
The boys who fought for the freedom then  
Of our own Red, White and Blue.

Let us honor the colors they loved so  
well,

That stand for freedom now.  
Let Liberty ring from every bell,  
Again your loyalty vow.

Let us honor our boys who are fighting  
now,  
Fighting to free our brothers  
From oppression and hate that holdeth  
sway,  
Binding them down to others.

Send up a cheer for the "Liberty boys"  
In camp and across the sea.  
Let us share their sorrows, increase  
their joys,  
And keep "Old Glory" free.

## THE MAKER OF BANDAGES

By Maximilian Foster of the  
Vigilantes



DIAMOND is not the hardest thing in the world. A diamond will cut glass and bore through case hardened, tempered chrome steel, but glass and steel—the diamond itself, too — are soft compared to some things. The hardest thing in the world is a hard woman.

Mrs. Britt was such a woman.

I have seen hard women in my time, but never one who was harder. She smiled seldom, and when she smiled it was like the glitter of ice. She spoke infrequently, and when she spoke her speech was like the tinkle of hail on slate roofing. She did not look as if she had ever wept in her life.

Every morning Mrs. Britt appeared at the Red Cross auxiliary in upper Broadway. She was the first to arrive in the morning, the last to leave at night. No one knew much about her though. She was not the sort that make confidences. But that she was a worker—a hard worker—no one would dispute. Efficiency, as you'd suppose, was a trait of Mrs. Britt's.

Efficiency—dreadful word that! How often hard women are efficient! How often efficient women are hard! She was both, Mrs. Britt. The moment she came in at the door she had her hat and jacket off. The next instant she was at her place, her mouth set, grim, austere and hard—hard at work. Probably she did her work only from a sense of duty. Hard women always profess that trait. Duty, duty! But, then, few women are as hard as Mrs. Britt.

In contrast to her was Mrs. Farlow. She was soft and womanly and gentle—the exact opposite. She was not very efficient, of course, though she tried. Day after day Mrs. Farlow sat at the work table, her mouth quivering, smiling wistfully, the tears starting in her eyes. The bandages that came from her were often soiled and rumpled, poorly sewn, too, by her poor little trembling fingers. It was a wonder she could even see to sew at all. Again and again what she turned in had to be thrown away.

But no one reprimanded her. No one even let fall a hint that she was more of a burden than a help. The hearts of all those women ached with womanly pity for the poor, stricken mother. Once in awhile, though, in her corner at the back of the room Mrs. Britt would turn around and throw a glance at her. The glance was as hard as rocks—harder, in fact.

Mrs. Farlow had a son in the Rainbow division. The son was the oldest of her four children, and until he went away the little mother had been the happiest woman in the world. Now any day he might be ordered off to France.

His picture was in the locket she wore. Every half hour she would stop her work to look at it. Sometimes, her face wistful, she would show it to the other workers, voicing the anguish that with every waking breath she drew twanged hollowly in her mother's heart.

One afternoon Mrs. Farlow's oldest daughter came hurrying in. Her face was white. She had just learned that the Rainbow division had been ordered overseas.

Mrs. Farlow rose, her face tragic. One glance she gave about her, then she collapsed, sinking to the floor. In

her fall she overturned a huge pile of antiseptic gauze just torn into squares for Triangulars No. 13.

The room instantly was in confusion. Instantly every one sprang to the mother's aid—that is, every one but Mrs. Britt. She rose and rescued the bandages under foot. Then, her face hard as nails, grimly Mrs. Britt went back to her work. When Mrs. Farlow, still stricken, was led away to her car outside the drab figure in the corner was plugging away as mechanically and methodically as ever. The one glance she threw over her shoulder at the weeping woman was almost contemptuous.

A hard woman, Mrs. Britt; a heartless one, too, it was agreed.

For days nothing was seen at the auxiliary of Mrs. Farlow. It was understood that in her grief and apprehension she was ill in bed. Then one afternoon, pallid and quivering, she came in at the door. She smiled wistfully when the others gathered about her. "Let me work," she appealed plaintively. "Work may help me not to think."

She took a bandage and tried to sew. She made poor work of it, however. Then her head sank on her breast and the bandage slipped from her hands. "I can't—oh, I can't!" she wept.

Once more she was led away.

The same thing happened three or four days later. A week later the mother wandered in again. By now the first of the troops were in the trenches, and her pale, transparent face was like a wraith's. She took a bandage; she tried to sew, and for a third time Mrs. Farlow gave in.

"Oh, my boy, my boy!" she wailed.

The next instant a face was thrust into hers. The face was Mrs. Britt's, and the hard, bony visage was quivering with ill-concealed anger and contempt.

"Sit down! Stop it!" said Mrs. Britt. With one hand she thrust Mrs. Farlow back on her chair; with the other she thrust at her the half finished bandage. Her tone as grim as her face, she spoke, and again the sound of it was like hail pattering on slate. "You're not thinking of your son," she said. "You're just thinking of yourself!"

There was a murmur of remonstrance. Mrs. Britt heard it, and she flashed a look about her. But when she spoke again it was to Mrs. Farlow she spoke.

"You're not the only mother in this war," she said. "If you thought a little more about them and a little less about yourself you'd be doing something. You'd be helping your son, for one thing!"

"Why, what do you mean?" gasped Mrs. Farlow.

Mrs. Britt smiled another adamant, icy smile.

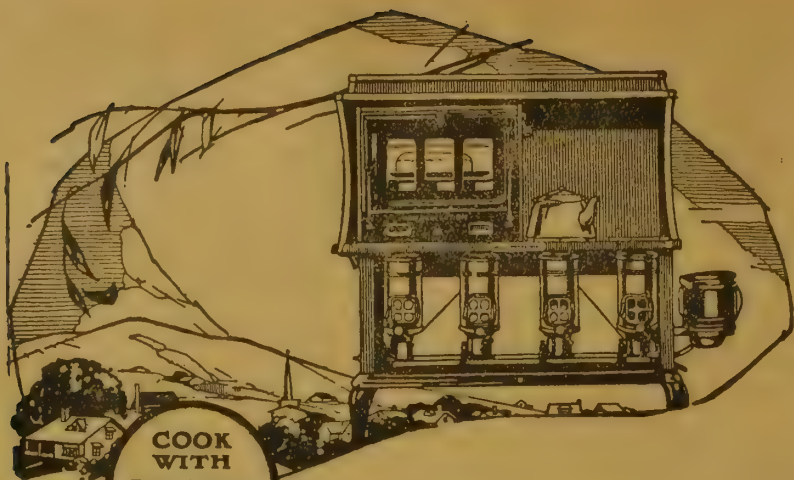
"Your son wouldn't die for want of care. Any one of those bandages I've seen you ruin might save his life. Any one of them might save the life of some other mother's son!"

Mrs. Farlow shrank as if she had been struck. She'd never thought of it that way before.

The silence, the grim reserve, which had cloaked Mrs. Britt seemed for a moment to quit her. "I have no son," she said, her flinty voice biting out the words. "I had one, but he died at Guantanamo. It was in the Spanish war," snapped Mrs. Britt, "and there were no bandages—nothing. That's why he died. That's why I'm here now. It's to keep other women—mothers—from becoming the sort of woman I am." A harsh, brittle laugh escaped her. "Oh, I know what you think of me. I've heard what you said. Well," said Mrs. Britt, "my son wouldn't have died like that maybe if I hadn't sat around sniffing and snuffing, never doing a thing."

Then, her lips drawn into a bony smile, she glanced about her once more and stalked back to her place in the corner.

That night Mrs. Farlow rose from her place at the bandage table and sought the table at the back. For the first time that day Mrs. Farlow had managed to create half a dozen bandages, none of which had to be thrown away. Timidly she held out a hand to the drab, dingy figure in the corner.



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8527—Ladies' Slip on Waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The front shoulder edges are gathered to the back which extends over like a tiny yoke.

8537—Ladies' One Piece Apron. Cut in sizes 36, 40 and 44 inches bust measure. The apron may be fastened at the back with one button or with two tapes.

8147—Girls' Dress. Cut in sizes 6, 8, 10 and 12 years. The lower section of the waist is gathered to the yoke and the skirt is in one piece.

8805—Misses' or Small Women's Dress. Cut in sizes 16, 18 and 20 years. The waist fastens at the back and the front is all in one piece; the skirt is a one piece model.

8798—Girls' Long Waisted Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The dress is slightly long-waisted, and it has a long, graceful surplice closing.

8778—Ladies' Yoke Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The lower section of the skirt is all in one piece with straight lower edge, and it is gathered to a fitted yoke.

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PATTERN DEPARTMENT  
California Cultivator  
Los Angeles

"I—I've done better today," she said timidly.

Mrs. Britt looked up at her. Out of the corner of one glassy eye something welled, then fell, running slowly down her cheek.

"He was only 20. He was all I had," said Mrs. Britt.



### Hominy Muffins

One cup soft boiled hominy, one teaspoon salt, one and one-half tablespoons shortening, one egg, three-fourths cup milk, two cups corn flour, four teaspoons baking powder.

Mix together hominy, salt, melted shortening, beaten egg and milk. Add flour which has been sifted with baking powder. Beat well and bake in greased muffin tins in hot oven 25 to 30 minutes.

### Eggless, Milkless, Butterless Cake

One cup brown sugar, one and one-fourth cups water, one cup seeded raisins, two ounces citron, cut fine, one and one-third cups shortening, one-half teaspoon salt, one teaspoon nutmeg, one teaspoon cinnamon, one cup corn flour, one cup rye flour, five teaspoons baking powder.

Boil sugar, water, fruit, shortening, salt and spices together in sauce pan three minutes. When cool add flour and baking powder which have been sifted together. Mix well; bake in loaf pan in moderate oven about 45 minutes.

### HOUSEHOLD-QUERIES

#### Canning Chili Peppers

How can chili pepper be put up, like the kind you buy in small tins, not pickled?—Subscriber.

Be sure to select fresh green peppers. Cut off stem end and remove seeds. Parboil for 15 minutes or until peppers are tender. They should not be cooked long enough to cause them to lose their shape. Pack in jars; pour cold water over them to overflowing and seal. They are ready for use any time during the winter.

Or the peppers may be packed raw, after preparing as for cooking, in glass jars, salt added at the rate of a level teaspoon to a quart jar. ((It will be found more practical, however to use small jars, pint or half pint, as they do not keep well after being opened and one seldom has need for a quart of prepared chile at one time.) Place rubbers on jars and tops loosely screwed. Put on false bottom in boiler. Pour a few inches of hot water around jars and heat till steam comes from under cover of boiler. Continue at this temperature one hour. Remove jars and tighten covers. 'Cool' in inverted position to determine if sealing is perfect.

#### Recipes to Exchange

Although a resident of Idaho we receive your valuable paper and I am much interested in the recipes. Please publish some honey recipes, also some canning recipes for fireless cookers, especially vegetables. Here is one of my own cheap cakes but very good:

'Cream three tablespoons sugar with two and one-half tablespoons fat; add one cup molasses, two cups flour (can substitute one cup barley, one wheat flour), yolk one egg, one teaspoon soda, cinnamon, cloves, lastly one cup hot water. Bake in three layers. Any kind of filling may be used and a raisin filling is especially good.—Mrs. B. B. McCament, Jerome, Idaho.

The Cultivator will be glad to publish recipes for canning with fireless cooker and for using honey in response to Mrs. McCaments' request. For all published a three months extension of subscription will be credited to sender.

Rose Potpourri

Please give directions for making

potpourri for rose jar. — Subscriber, Los Angeles.

Gather petals of the most fragrant roses. Spread thinly over sheets or papers and dry for several days, turning occasionally to make sure that all are evenly dried to a crisp state. Old formulas tell us to dry them in the sun, but I have found it better to dry in the house where the petals dry more slowly and evenly and where there is no wind to blow them off the drying sheets. Perhaps our California sun is hotter — we know our air is dryer — than in the Eastern states or in England whence hail our grandmother's potpourri recipes.

Other sweet scented leaves and herbs may be added. Thoroughly mix with the dried petals the following potpourri spice and place in rose jar:

Spice for potpourri. Ground cinnamon, one teaspoon; cloves, one teaspoon; attar of roses, three drops; glycerine, nine drops; pure alcohol, one tablespoon; oil of lavender, six drops; rosemary, six drops; powdered orris root, two ounces. These dry ingredients should be sifted together and bottled with the glycerine and alcohol until ready to use.

In addition here are two other formulas:

Dry rose leaves in the sun, turning constantly so that all may get crisp and dry. Add sweet scented geranium, lemon verbena, honeysuckle, lavender, etc., all of which must be thoroughly dried. After about two weeks' drying pepper the leaves with powdered orris root, cinnamon and salt; about a tablespoon of each will be required to the quantity of dried petals necessary to fill an ordinary sized rose jar. Then add 20 drops each of oil of cloves and lavender, half that quantity of oil of cinnamon and as much oil of musk as you feel entitled to spend on your rose jar. This is the most expensive item in the preparation. Mix all together and place in a wide-mouthed jar. For the first year or two the leaves should be stirred constantly. Keep your jar in a dry place and each season you will be more delighted with its fragrance.

Three handfuls orange flowers, three of clove jilly flowers, three of damask rose leaves, one of marjoram, one of rosemary, one of myrtle, one of lavender, half handful of mint, rind of one lemon, six bay leaves, quarter ounce cloves. Chop finely all together and thoroughly mix. Spread in layers in jar with handful of bay salt between each two layers.

### "STUDY TO BE QUIET"

We are all willing to admit that there is no wisdom beyond omniscience, yet it is a strange fact that few of us are wise enough to trust the Supreme Intelligence in a crisis, but go fussing and fretting about as if the fate of the universe depended entirely upon our own decisions and actions. This is no argument for that negative philosophy that would have us sit still and do nothing. It is good to work, it is right to think and to try to think in terms of clarity and order, but after one has done his little best it is a safe plan to leave the rest with the Creator. For we are all only actors in the great drama of life while God is still the director in chief. "Take no thought for the things of tomorrow," said the great Teacher, and nearly 2000 years later the beloved Lincoln said, "Say your prayers and go to sleep."—L. A. Times.

"All the resources of the country are hereby pledged"—now is the time to work them to the limit.

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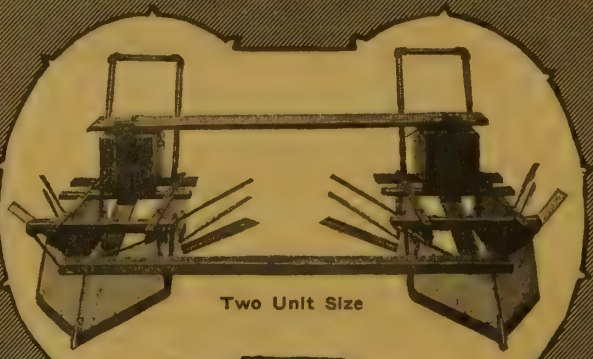
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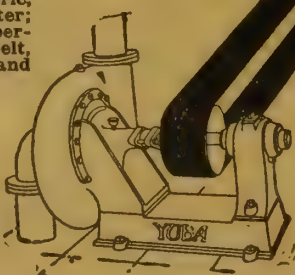
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DEPARTMENT C



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## Los Angeles Market

Los Angeles, May 28, 1918.

### BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....41  
Dairy Exchange price past week on ex-  
tras.  
May 22 23 24 25 27  
'18 ..... 41 41 41 41 41  
Rcts. five days ending May 27, 326,800  
pounds.

### CHEESE

Brokers prices:  
California fresh, lb. ....23  
Eastern Daisies .....26  
Domestic Swiss .....36

### EGGS

Exchange quotations. Prices to re-  
tailers 2 to 3 cents higher.  
Fresh extras .....39  
Pullets .....36½  
Case Count .....38½  
Dairy Exchange prices past week on  
fresh extras.  
May 22 23 24 25 27  
'18 ..... 39 39 39 39 39  
Rcts. 5 days ending May 27, 3316 cases.

### POULTRY

We quote to producers:  
Broilers .....23@32  
Fryers .....32  
Hens, small, 24; heavy .....27  
Ducks, lb. ....20@26  
Roasters .....32  
Roosters, old .....14  
Turkeys .....28@30  
Geese, young, lb. ....25  
Rabbits, live, 17@18; dr. ....40

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Tuesday morning, May 28,  
by the Cudahy Company.  
Cattle—  
Beef steers, av. 1000-1100 lbs.—11.50@12.00  
Heifers, good .....8.50@9.00  
Cows, good .....8.00@8.50  
Canners .....5.00@5.50  
Hogs—  
Av. 125 lb. ....16.00  
Av. 150 lbs. ....16.50  
Av. 175-225 lbs. ....17.00  
Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent.  
Prime wethers .....11.00@11.50  
Ewes .....10.50@11.50  
Lambs .....14.50@15.00  
Yearlings .....11.00@11.50

### POTATOES

Wholesale selling price:  
Northern Burbank, cwt. ....1.90  
Idaho Russets .....1.65@1.70  
New, lug ......90  
Sweet, lug .....1.85

### ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. ....1.10  
Brown .....1.50  
White .....2.50  
Crystal Wax, cr. ....1.50  
Garlic ......10

### VEGETABLES

Wholesale prices:  
Artichokes, doz. ....60@80  
Jerusalem, lb. ....7½  
Asparagus .....9@10  
Beans—Wax, lb. ....5@5½  
Ky. Wonder .....6@6½  
Beets, sk. ....2.00  
Cabbage, lb., 1½; sk. ....1.35  
Red, lb. .....5  
Carrots, doz. ....30  
Celery, doz. ....1.25@1.50  
Corn green .....45@60  
Cucumbers, bx. ....90@95  
Egg Plant .....11  
Horseradish, lb. ....15  
Lettuce, doz. ....40@45  
Leeks .....35  
Mint, doz. ....40  
Onions, green, doz. ....25@30  
Peas, Tel. lb. ....5½@6  
Peppers, Chili, lb. 13@14; Bell .....30  
Parsnips, doz. ....40  
Parsley, doz. ....20  
Radish, doz. ....25  
Rhubarb, C. W. bx. ....1.25@1.35  
Strawberry .....1.50  
Romaine, doz. ....40  
Spinach, doz. ....1.65  
Squash—Summer, lug .....2.50  
Tomatoes, cr. ....2.50  
Turnips, doz. ....45  
Watercress, doz. ....35@40

### FRUITS

Wholesale prices:  
Apples—W. W. Pearmain .....1.85@2.50  
Spitzenberg .....2.50@3.00  
Y. Newton .....2.00@2.50  
Apricots, cr. ....2.50  
Bananas, lb. ....6½@7  
Cantaloupes; Ponies .....3.50@4.00  
Specials, 2.00; Standard .....5.00  
Cherries, lb. ....10@12  
Figs, bx. ....3.00  
Gooseberries, lb. ....11@12  
Loganberries, lb. ....9  
Peaches, cr. ....2.00@2.25  
Strawberries, tray .....1.50

### CITRUS

Lemons, packed, 7.00; loose .....5.25  
Juice .....4.00  
Oranges—Valencias .....6.75  
Grapefruit .....8.25  
Limes, basket .....75

### DRIED FRUITS

Date for making contracts on 1918 crop  
postponed again by government order to  
some time in July.

### BEANS

These are prices made by wholesaler to  
retailer.  
Lady Washington .....13.50  
Limas .....14.00  
Pinks .....8.50  
Manchurian Reds .....9.00

Baby Mex. ....9.50  
Garbanzos .....10.00@11.00  
Small Whites .....13.50  
Blackeyes .....9.50  
Tepary .....10.00@11.00  
Lentils .....25.00  
Mex. Red .....9.00

### HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oats .....26.00@28.00  
Volunteer Oat .....14.00@18.00  
Wheat .....23.00@26.00  
Barley .....23.00@26.00  
Alfalfa .....18.00@20.00

Quotations furnished by California  
Alfalfa Growers' Association, Riverside,  
California.  
Number 1 alfalfa hay is \$23.00 per ton  
f. o. b.; common shipping points take a  
\$1.50 carload rate to destination. Prices  
from points where a higher or lower rate  
applies to destination will be correspond-  
ingly lower or higher.

### GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:  
Bld Asked  
No. 1 bright feed barley...\$2.60 \$2.65  
Milo maize, local .....3.50  
Oat middlings .....36.00

## San Francisco Markets

San Francisco, May 27, 1918.

### BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:

Two-pound squares, parchment wrap-  
per, ½c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....46½  
Prices on butter are practically 15  
cents above year ago this date.

Prices Extras past week and year ago:  
May 21 22 23 24 25  
'18 ..... 44 43½ 44 44½ 44½  
'17 ..... 36½ 35½ 35¼ 35¼ 36  
Rcts. 5 days ending May 25, 415,600 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats .....21¼  
Jack Cheese, full cream .....26@27  
Half skim .....14@17  
Ore. Y. Am. ....24

### EGGS

Dairy Exchange Quotations:  
Extras .....40½  
Firsts .....39½  
Selected Pullets .....38½  
Prices Extras past wk. and yr. ago:  
May 21 22 23 24 25  
'18 ..... 42½ 42 41 39½ 40  
'17 ..... 33½ 33 32½ 32½ 33½  
Rcts. five days ending May 25, 14,597  
cases.

### POULTRY

We quote to producers, lb.:  
Per lb.: Large hens 27@28; small do.  
24@25; broilers and fryers ¼ to 1 lb.,  
35; 1 to 1½ lbs., 35@38; 1½ to 1¾ lbs., 40;  
1¾ to 2 lbs., 41@42; 2½ to 3 lbs., 42@46;  
old roosters, 19@20; ducks, 20@25.  
Squabs, doz. ....2.50@4.00  
Belgian Hares, live, lb. ....16@17

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾c  
more.

Steers, lb., 11¼@12; thin, 8@11; cows  
and heifers, 8@9¼; thin, 6@7½; calves,  
8@10½.

Sheep—Lb. gross weight: Fat, unshorn  
wethers, 14@14½; ewes, 12@12½; lambs,  
yearlings, 15@16; milk, 14½@15; shorn  
sheep, 1¼@2 less.

Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 16; 140 to 300 lbs., 17½; 300 to  
400 lbs., 16½.

### POTATOES

Wholesale selling prices at wharf, cwt.:  
Oregon Burbanks .....1.50@1.65  
River .....1.15@1.40  
New, lb. ....2½@3

### ONIONS

Wholesale selling price on wharf, cwt.:  
Australian Brown .....90@1.10  
Bermudas, Imperial, cr. ....1.25  
Garlic, lb. ....3@4  
New Red, lb. ....1¼@1½

### VEGETABLES

Wholesale selling price.  
Artichokes, cr. ....3.00@3.50  
Asparagus, lb. ....4@7  
Beets, sk. ....75@1.00  
Beans, lb., String, 4@5; Wax .....4@5  
Cabbage .....1½@1¾  
Carrots, sk. ....85  
Cauliflower, doz. ....40@60  
Celery, cr. ....1.50@2.00  
Cucumbers, bx. ....1.00@1.15  
Corn, green Imperial, doz. ....35@50  
Egg Plant, lb. ....8@10  
Lettuce, doz. ....15@20  
Onions, green, bx. ....65@75  
Parsnips, sk. ....85@1.09  
Okra, lb. ....25  
Peas, lb. ....3½@4½  
Peppers, Bell, lb., 7@30; Chili .....10@20  
Rhubarb, Straw, bx. ....1.00@1.35  
San Jose .....1.00@1.25  
Squash, Summer, cr. ....75@85  
Spinach, cr. ....50@75  
Tomatoes, cr. ....2.00@2.50  
Turnips, sk. ....75@1.00

### FRESH FRUITS

Apples—Newton Pippins .....1.50@2.25  
Apricots, cr. ....2.00@2.25  
Berries—Strawberries, ch. ....9.00  
Raspberries, cr. ....1.75@2.00  
Gooseberries, lb. ....7@9  
Cantaloupes—Standard, cr. ....4.00@5.00  
Cherries dr. ....1.25@1.40  
Figs, bx. ....1.50@4.00  
Peaches, cr. ....2.25@2.50

## ROSS SILO FILLERS

Our  
68th  
Year



Low Speed Light Running Larger Capacity Less Power

Whatever your requirements are we have a size to suit, 4 H. P. and Larger.

We can show you The Ross will operate with Less Power and Less Speed and still produce Larger Capacity. Our selling plans make this possible.

No Limit to our Guarantee because there is No Limit to the ability of The Ross. Write your own guarantee if you please.

Buy now, Cost you Less. You can have the machine any time without Cash investment in full prior to Silo Filling Time.

THE E. W. ROSS CO., Box 147, Springfield, Ohio. 68 Years' Experience

Machinery and Repairs: Baker, Hamilton & Pacific Co., San Francisco; Dixon & Griswold, Los Angeles.

## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with easy terms of payment.

**BRENTWOOD IRRIGATED FARMS,** In Contra Costa Co., 63 Miles from San Francisco  
For Price and Descriptive Matter Address

BALFOUR, GUTHRIE & CO., LAND DEPT., 350 California St., San Francisco

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.



Lemons, bx., according to size: fy., 5.50@7.50; lemonettes, 3.50@5.00; grapefruit, fy., 1.50@3.00; ch., 2.00@2.50. Oranges, bx.: Valencias, 5.50@6.50.

HONEY

To the trade, per lb.: Comb, fy. white alfalfa, 20; do sage, 21; light amber, alfalfa, 18; do sage, 19.

BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....13.50@13.75  
Bayous .....9.00@9.25  
Small Whites .....Nominal  
Large Whites .....Nominal  
Mexican Reds .....9.00@9.25  
Blackeyes .....8.25@8.40  
Pinks .....7.75@7.90  
Red Kidney .....12.50@13.00  
Cranberry .....Nominal  
Teparies .....10.25@10.50

HAY

Under date of May 25, Scott, Magner & Miller says:

Receipts past week 809 tons. Owing to the general hay trade being so dull these small receipts have been adequate to furnish all demands and the market remains about the same as for several weeks past. A few cars of new alfalfa of very good quality arrived during the week and sold on a basis of about \$18 per ton. This was for good hay, free of foxtail. The cutting of new crop hay is quite general. Some sections show very short growth, while others show a very fair crop. The cool weather of the last week has been most beneficial to all growing crops, both hay and grain, and conditions have improved very much in many sections.

Quite a little acreage that was sown for grain has and is being cut for hay, owing to the lack of moisture in the ground. If the cool weather continues considerable that would otherwise be cut for hay will be allowed to stand for grain. It now looks as though stock hay would be rather abundant and choice hay in light supply.

Trade in the interior is fair, while export demand is very light. It is rumored that the government may set a price on hay in the near future, the same as they have done in wheat, beans, woolen goods and other commodities. In such a case it would have a very important bearing on conditions in the hay trade.

We quote today wholesale prices in carload lots as appear from dealer's transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay  
(light five wire bale) .....27.00@28.00  
No. 1 Wheat or Wheat and  
Oat Hay .....23.00@25.00  
No. 2 Wheat or Wheat and  
Oat Hay .....20.00@22.00  
Choice Tame Oat Hay .....24.00@26.00  
Other Tame Oat Hay .....21.00@23.00  
Wild Oat Hay .....18.00@20.00  
Barley Hay .....18.00@20.00  
Alfalfa, New first cutting.....14.00@18.00  
Stock Hay .....13.00@15.00  
No. 1 Barley Straw, bale.....50@80

GRAIN

As to grain and feed prices see note under Los Angeles grain prices.

SEEDS

Prices in round lots, lb.:  
Millet, recleaned .....5@5½  
Alfalfa, lb. ....20@21  
Flax .....7@7½  
Hemp .....5@5½  
Rape .....2½@3

Citrus Fruit Market

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 9766, lemons 2889, total 12,655. To same date last season: oranges 25,885, lemons 4557, total 30,442. Central California this season: oranges 2492, lemons 115, total 2608. Last season to same date: oranges 4075, lemons 164, total 4239. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

May 22  
New York: 13 oranges. Val. 4.75-8.30, Sweets 5.50-6.85, Mikes 7.25.  
St. Louis: 5 cars. Val. 4.05-6.40, lem. 7.10-7.75.  
May 23  
No sale in New York because of Red Cross day.  
May 24  
St. Louis: 1 car. Val. 3.60-5.80.  
May 27  
New York: Market higher. Val. 4.65-8.45, Mikes 5.40-8.15, Seeds. 6.00-6.80, lem. 4.95-7.95.  
Boston: 4 oranges, 2 lem. Val. 5.30-7.55, Grapefruit 1.30-1.95, lem. 7.05-7.25.

THE WAY TO WIN

If you think you are beaten, you are;  
If you think you dare not, you don't.  
If you'd like to win, but you think you can't,  
It's almost a cinch you won't.  
If you think you'll lose, you're lost,  
For out of the world we find  
Success begins with a fellow's will—  
It's all in the state of his mind.

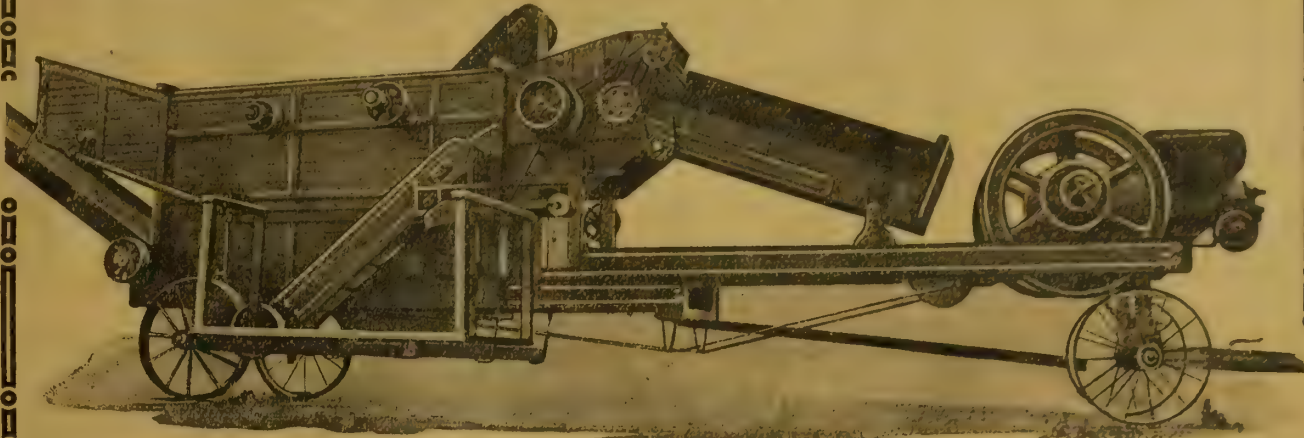
WEATHER CONDITIONS

San Francisco, Cal., May 25, 1918.

Stations	Rainfall		Temp.	
	Wk.	Season.	Norma.	Max. Min.
Burien	.00	24.17	44.49	84 40
Red Bluff	.00	11.99	24.39	82 52
Sacramento	.00	19.61	19.83	80 42
San Francisco	.00	11.46	21.98	60 48
San Jose	.00	9.36	16.59	78 40
Fresno	.00	19.19	9.47	84 48
San Luis Obispo	.00	18.07	20.22	66 40
Los Angeles	.00	13.85	15.51	68 52
San Diego	T	7.98	9.92	66 52

# Labor Saving Bean Threshers FOR EVERY GROWERS NEED

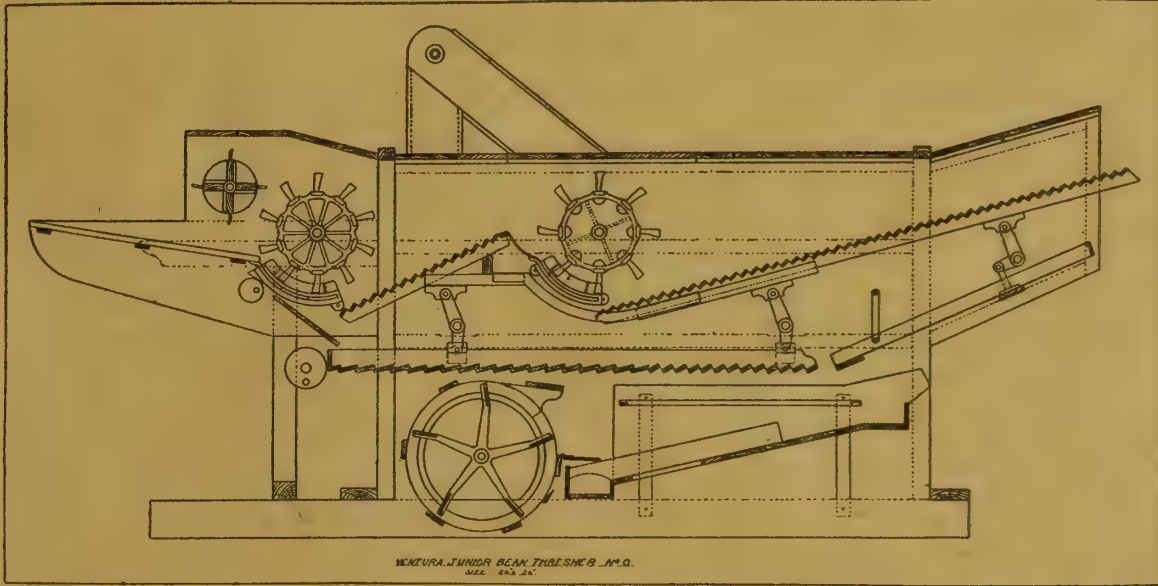
The new Junior No. 1 and 2 are especially built with sacking platform for traveling over the field. An economical seven man outfit for threshing from windrows.



The Junior No. 1 and 2 Ventura Bean Thresher with sacking platform.

To meet the threatened shortage of labor, the New Junior No. 1 and 2 VENTURA BEAN THRESHERS have been developed each with a sacking platform and extra long bagger. Mounted and with portable power and long drop feeder, four horses or a small tractor will pull this light machine between windrows operating with only 7 men. It is sold with or without engine.

The No. 1 is equipped with 26x32 inch cylinders. The No. 2 with 26x38 inch. No. 1 requires a 10 horse power engine, No. 2 requires 12 horse power. Each machine is constructed on the same scientific practical lines as the large machines that we have been building and that have given satisfaction everywhere for the past 22 years. The same high grade material, workmanship and construction goes into each machine and each will thresh EVERY VARIETY OF BEAN, including horse beans.



The Junior No. O, 2 or 3 man Ventura Bean Thresher. Sold mounted or unmounted, with or without power.

This year we offer the Junior No. O, a bean thresher built for the individual bean raiser who has a small acreage. This will thresh ALL VARIETIES of beans. It can be mounted on an ordinary truck, hauled from place to place and operated with small stationary engine or tractor. It is a two cylinder machine, 20-in. by 26-in. Farmers with relatively small acreage will find this machine a most valuable asset. It is built on the same scientific principles as the larger machines and will do thoroughly satisfactory work.

When you buy a VENTURA BEAN THRESHER you are buying the results of 22 years of manufacturing and operating experience that has proven to have turned out the most practical and best Bean Threshers made anywhere. Our threshers are made especially to thresh beans. They are different from any other threshers and are equipped with devices that render special service and that are not to be had on any other models.

All Ventura Bean Threshers, large and small can be equipped with CLIPS ON THE CONCAVE TEETH. These clips were invented by us and with double punched cylinder bars, it is possible to quickly adjust our cylinders and concaves to properly thresh beans IN ANY THRESHABLE CONDITION. No other machine in the World offers this very necessary equipment and it often means the difference between success and failure. From year to year, working and experimenting with hundreds of machines in operation in the heart of the bean district have given us an opportunity of observing and improving of which full advantage has been taken and the result is a series of bean threshers as near perfect in operation as it is possible to make them. Many of our principles in use and our devices are the result of special study to produce something necessary to thresh the different varieties of beans under any and all conditions. Our factory, located at Ventura, assures purchasers that parts and extras are always close at hand which means a great deal in our short bean threshing season with large crews. VENTURA BEAN THRESHERS are made to do a maximum amount of work properly with a minimum of help and power.

Write us for information about BEAN THRESHING MACHINERY telling us your acreage, how many sacks per day you would like to turn out, the kind of beans you have, what horse power engine or tractor power you have, the make of engine or tractor and we will furnish you free, information as to your most economical and satisfactory requirements. We make six sizes from the Junior No. O which can be operated by two or three men, to the Ventura Senior No. 2 which has a record of threshing 3000 sacks per day. Address

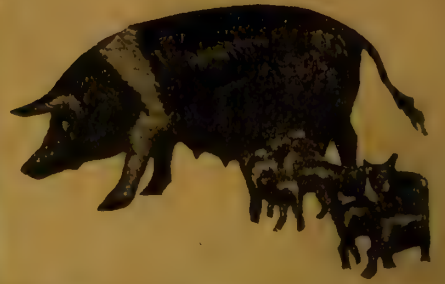
## The Ventura Manufacturing and Implement Co. Ventura, California





Lactein saves the baby chicks, increases egg production and makes chickens pay.

# Makes Hens Lay LACTEIN Makes Hogs Pay



When fed to hogs Lactein prevents sickness, increases weight and doubles profits.

## FEED LACTEIN to HOGS and CHICKENS

### WHAT IS LACTEIN?

Lactein is nothing but buttermilk and whey condensed, pasteurized, sterilized and modified. It is produced by separating the water from the solids at a temperature and in a manner that stimulates the Lactic acid and renders the product commercially practical for shipping and feeding. Feeding experiments made during the last few years have demonstrated that buttermilk is of immense value when fed to hogs as a supplement to grain feed.

### BETTER THAN BUTTERMILK

Lactein has been proven to be much better than raw buttermilk because the acidity is not only always the same but having been sterilized or heated to such a degree that all pathogenic bacterial life has been destroyed and the concentration with the special treatment has increased the Lactic acid to a high degree. It is this concentration of the Lactic acid that makes it the most safe, reliable and profitable supplement to grain feed for hogs.

### LACTEIN MAKES HOGS FAT

Lactic acid is the best appetizing agent known. It not only keeps the digestive tract free from putrifying bacteria but it promotes the growth of acid forming bacteria and maintains and regulates normal digestion. There is nothing that compares with Lactic acid in making a grain ration palatable for hogs.

### LACTEIN IS A MUSCLE BUILDER

Lactein on account of its easily assimilable protein and high content of nutritive salts is of great value as a muscle and bone builder and especially for young pigs and brood sows. It creates appetite, increases assimilation and is a splendid conditioner.

### HOW TO FEED LACTEIN

There are no set rules for hog feeding but we all must acknowledge that hogs should have a balanced ration. They must also be fed something they like; for hogs, like individuals, have appetites and know what they like or dislike. There is nothing so good as Lactein

to keep a hog's appetite at the top notch. It may be fed as a slop or drinking water by mixing one part Lactein to thirty parts water, or it may be first mixed as follows: Lactein one part to water ten parts and then added to grain in the ratio of one gallon to ten pounds of grain or it may be fed both ways at the same time. It can be used with any feed where you would use raw buttermilk and in the same way when the water has been added, as we only remove the water and you get the full feed and tonic value of the buttermilk with the added advantage of this product being thoroughly sterilized and pasteurized thereby killing all injurious bacterial growth which is only too common in raw buttermilk.

### LACTEIN INCREASES PROFITS

Lactein is not only a safe feed but considering its high factor in weight production and in adding food value to grain feed is the most valuable and economical feed to be secured.

### LACTEIN PREVENTS DISEASE

Lactein is both a tonic and a laxative. It keeps the hogs strong and healthy and reduces the death rate to a minimum. In fact if pigs are fed on Lactein they will not be subject to cholera or other diseases as the Lactic acid destroys all poisonous bacterial growth in the intestines thereby making disease impossible but nothing will convince you of the value of Lactein like feeding it for a few months to your own hogs—and see them "kink their tails" and "squeal" when they come to feed.—Try it.

### FEED LACTEIN TO CHICKENS

Lactein when fed to chickens is a tonic, appetizer, liver and bowel regulator, body builder and egg-producer. It will retain its acidity and other properties indefinitely and under any climatic condition. Nothing, however, will convince you of the worth of Lactein like feeding it to your own chickens. "The proof of the pudding is in the eating thereof." Any chicken raiser who will feed Lactein as directed will never be without it, for it means more healthy chickens, more rapid growth, more eggs and more money.

## LACTEIN

LACTEIN is put up in wood barrels holding five, twenty-five or fifty-two gallons. Should your local feed dealer not have LACTEIN, write us direct and we will see that you are supplied without delay, or better yet, fill out and mail the coupon below or a copy of it, and we will send you a five-gallon keg by express, prepaid. This when diluted with water as per instructions is sufficient to acquaint you with the wonderful merit of LACTEIN. The price in fifty-two-gallon barrels is \$26.00 per barrel, twenty-five-gallon barrels, \$15.00, and five-gallons \$3.50. Order a barrel from your local feed dealer today and you will never regret it. We guarantee satisfaction.

The largest and most successful chicken and hog raisers all over California feed and recommend LACTEIN, and the results they obtain are really remarkable.

Cut this out and mail today.

LACTEIN FOOD COMPANY,

Hearst Building, San Francisco:

Ship me a five-gallon trial order of LACTEIN by express, prepaid, for which I hand you herewith \$3.50. Send full directions for feeding.

Name .....

Address .....

Address all inquiries regarding LACTEIN to

# Lactein Food Company

Hearst Building, San Francisco.



# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

*Los Angeles*

*An Illustrated Weekly for the Rural Home and Ranch*

*San Francisco*

Vol. L—No. 23

June 8, 1918

One Dollar Yearly





Established 1877

Forty-first Year

# CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established 1901,  
Combined with California Cultivator 1916

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R. M. Teague, Vice-President.

C. B. Messenger, Editor.

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Saturday, June 8, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

California grapefruit has not sold up with California oranges. It may be that it never will, but we believe that when the consuming public gives California grapefruit honest consideration it will be given fairer treatment.

The first grapefruits sent from this state were often filled with seed, were far more bitter than the trade liked, and generally showed the mistakes often made by pioneers in every industry. Today's grapefruit is different, but it will take time to make the consumer know this.

A typical grapefruit branch is shown on the cover of this issue. It is one of our most healthful breakfast foods.

## ROTATE

At the Ventura County farm bureau meeting last Saturday Prof. Gilmore referred to the custom in Scotland where it is understood that in leasing the land the tenant farmer is to grow one crop of clover in every four, and there must also be live stock kept on the place. As a rule in America it is different. Too often our lands are leased here with the only consideration being the regular payment of the rental.

This answers for one generation, but with the possible exception of bean farmers, we do not believe there is any line of farming which will permanently succeed along specialized lines. Even alfalfa lands become "clover sick."

## SERVIA

We stand when the Marsellaise is played or the French flag passes; we honor England for her wonderful work in the war; and at all times applaud wonderful little Belgium for her effort to preserve liberty for the world; but too often we have forgotten the Little America of the Balkans, the one country which has stood in southeastern Europe as the most liberty loving of all those people. Servia stood nobly for the continuation of her liberties and was making a magnificent fight against vastly greater numbers of Huns. She contested every inch she was compelled to yield until stabbed in the back by that other Balkan country, Bulgaria. She is now crushed and has left hardly the semblance of a nation. The Allies must see that Servia is restored and made a barrier to the onrush of the Hun devils to the south and east. It is a duty we owe to the remnant of her people and a duty which civilized nations owe to themselves.

## TARIFF CONFERENCE

Not for tariff revision nor for free trade nor for protection are the tariff conferences called for various Pacific Coast sections next week, but for the purpose of securing a fund of information which will aid this country through its congress to enact laws which shall render justice to all and secure greatest prosperity to the entire country.

This commission appointed by congress is desirous of conferring personally with all who are interested in citrus fruit, olives and olive oil, raisins, figs, nuts and allied industries, the poultry industry, in fact, all producing industries of the Coast. As may be seen in the citrus department of this issue a two-day conference will be held in Los Angeles, June 17 and 18; in the deciduous department, another conference at Fresno, June 20; in the poultry department, another at chamber of commerce rooms, San Francisco, June 25.

We hope the producers of this state will give the members of this commission what they came to California to get, first hand information from the producers.

## TRACTOR SERVICE

It was our pleasure last Saturday to mingle for just a moment with a bunch of tractor enthusiasts. They were gathered on the banks of the Ventura River, five miles inland from San Buenaventura. They were all the owners of one type of machine, the Samson. In other words, it was a Samson picnic. Invariably, the owners of these machines were enthusiastic over the use of farm power in the form of tractors. They had used their machines long enough to appreciate their ability to do and to add strength and length to the arm of the farmer. They had also used them long enough to appreciate the fact that their currying down requires a different stroke from that used on the cayuse. In other words, they had found problems, the solving of which was difficult. So they had accepted the invitation of the service department of the tractor factory and came with their families, not only to picnic, but to learn from those qualified to teach.

Like modern war, modern agriculture presents many problems so entirely different from those of yesterday that the Cultivator has been contemplating for some time the rendering of tractor service through its columns. Such service of necessity

cannot be equal to personal service rendered by factories, but it will be of great value and can be availed of after the tractor is backed into the shed in the evening. To that end we have secured the services of one of the best qualified tractor experts on the Pacific Coast. His name — but that is immaterial at the present for he is modest and insists that while he hopes he may become better acquainted with our readers later, for the time being he will remain without a name.

The way to secure the greatest return from this California Cultivator service is to send in the questions which are raised in tractioneering. A few questions already in hand are answered on Page 698 this issue. Tractor drivers may find these along the same lines as those raised by their own difficulties.

## LAND ARMY

The Women's Land Army has given occasion to several hard headed, practical farmers to smile and to wait in anticipation of opportunity to say; "I told you so." And they will have the opportunity, for there will be failures. There will also be — there have been already — many pronounced successes. The woman farmer is nothing new on the Pacific Coast. Some of our most successfully operated farms are under the entire charge of women, and, in any case, the women of the land are nothing if not patriotic. A year or more ago there started in New York a movement to perfect a force which should be far more than advisory, in fact, an actual working force, in the form of The Women's Land Army. This movement steadily advanced, securing amongst its actual workers girls from Vassar and many other educational institutions. It has now reached the Pacific Coast, and a few weeks ago we saw one unit of approximately a score of determined young women starting for the tomato fields of Elsinore. Word has come back that some of these have been relieved from their work; others have made good, and others have done far better than the ordinary hired man. Recruits are coming from our universities, from our teaching force, from our club women, from the ranks of loyal and thinking women in every field of endeavor. Nor are American women alone in this work; there are tens of thousands of the finest of England's women who have been doing the work of field laborers, driving tractors and reapers, cultivating vegetables and caring for live stock during the bitter years of the war. Their work is now under direct government supervision.

Mrs. Myrtle Shepherd Francis who is at the head of the Southern California division assures us that the women are thoroughly in earnest in aiding in feeding our soldiers and the hungry people of Europe. The organization is making an effort to restrain the over ambitious and hold them in lines of work for which they are fitted. Apricot and other fruit growers and dryers are already finding much assistance in securing help for the coming harvest.

The best of it all is that it indicates a stronger determination in the one aim — Whip the Hun.

## This Week's War Notes

Trustees of the Cincinnati public library have barred all Hearst publications.

The line in northern Italy remains intact excepting occasional advances by the Italians.

A state of war has been declared at

Moscow and, rumors — are rife of a counter revolutionary plot.

An Austrian enemy alien has been arrested at St. Louis charged with starting a million dollar arsenal fire.

The Western Union Telegraph Operatives have been threatening strike which has not as yet been actually declared.

The 143rd regiment of California Field Artillery made a practice run from Camp Kearney to Los Angeles, remaining in that city three days.

Super-submarines have crossed the Atlantic and are known to have sunk at least five and possibly 18 vessels off the Jersey coast. All ports are closed.

The British, French and American navies are in daily expectation of the emergence of the Teuton navy and stand ready to accept any challenge offered by the enemy.

Madrid and near-by districts of Spain report the existence of a strange disease which has caused the death of thousands and has reached the proportions of a plague.

Thousands of prisoners in Finland have been brutally treated and many were murdered by Finnish and German soldiers. It is known that there were 70,000 Social Democrats imprisoned. How many have been slaughtered is not known.

Operatives in Eastern textile mills, to the number of 35,000, have gone on strike. Many of these operatives were engaged on government contracts, and the mills have been forced to close. This is nothing less than treason and at this time probably will be so considered by the government.

Information has been secured regarding transactions of the German commercial societies at a conference held some months ago. German commercial people admit commercial injury to that country has been great: "The greatest and best part of our tonnage is in the enemy's hands; our food and clothing are reduced to the extreme limit."

Major General Wood who has been ordered by the war department to remain on routine duty in this country instead of seeing active service in Europe made appeal direct to Washington, and order has been given that instead of being transferred to San Francisco he will go back to Camp Funston where he will remain in charge of the training camp.

It's been a blue week for the Allies. As this page goes to press on Monday however, the situation in France is far more hopeful. Until today the Hun advance has been almost continuous. The Aisne was crossed, and then the Vesle, and even the banks of the Marne were reached on Saturday. This with a wedge-like salient which gives only about a dozen miles frontage on the Marne. The French are still holding firm at Rheims on one side and at Soissons on the other, and the latest news is that the French have even advanced a three mile front more than a mile into the territory secured by the Huns. It is possible the French may be able to repeat their former performance at the Marne and by flank movement capture vast numbers of Germans. The past week's advance by the Huns has been almost entirely in a direct line towards Paris. The Ypres sector has been almost entirely neglected. American troops are still held by General Foch in the reserve line, excepting in one or two minor engagements. Berlin claim 45,000 prisoners taken in the present drive.



# An Arizona Farmers Field Day

Written for California Cultivator by M. E. Bemis

**O**NE of many commendable things inaugurated by County Agricultural Agent W. A. Barr is the encouragement of the field days. The best attended of any of these so far and one that will probably be longest remembered as having proved of great value was the field meeting at the Salt River Valley experiment farm at Mesa 16 miles west of Phoenix, May 22. Twelve varieties of wheat and several kinds of oats and barley are now just ready for harvest. Several varieties of alfalfa and other crops are now growing on what was a few years ago one of the most badly infested Johnson grass farms in the valley. The growing crops, several speakers and the demonstration of four tractors were the drawing cards that brought out an attendance of several hundred farmers who came from all parts of the country.

May 22 was the day, and like most Arizona days was bright and sunny. Early morning visitors had an opportunity of seeing the work of a Moline tractor pulling a six foot mower in alfalfa, the whole outfit operated by one man, apparently with as much ease as one would handle a mower driven by horses. Corners were turned with little difficulty and on the whole, without having the figures of the cost operation, the outfit should interest I think, the farmer who has a considerable acreage of alfalfa at his time when horse flesh is needed for other purposes and horse feed is high.

An Avery tractor pulled three 12 inch bottoms, plowing eight to ten inches. A Sampson Sieve-grip pulled a double disk and a Titan pulled a double cutaway. All three of these moved along at good speed and unmindful that the weather was somewhat warm. This, together with the work done, which was excellent, appealed to the farmer who is coming more and more to realize that the farmer in these times must farm more with machinery and less with horses and men.

At the lunch hour groups of farmers could be seen discussing over their lunch the merits of the several tractors and comparing the work with other tractors and with horse drawn tools. I think this opportunity for discussion is one of the most valuable features of these meetings as it gives men a chance to exchange experiences and compare notes. Many points are brought out that never would be otherwise. It means dollars now when it takes close calculation to figure out how to get around the high cost of labor, provided one can do it at all.

After lunch the visitors sat down under the shade of the trees in the yard and listened to a talk by Dr. A. E. Vinson, chemist of the state college of agriculture on slick spots and alkali. He advised plowing under a growing crop for the slick spots. This in most cases would be all that would be required to bring the soil into a condition to take water. For alkali, Dr. Vinson said that in most lands where the black alkali was present, the application of gypsum and then flooding to wash the alkali out would usually bring the soil back to a productive state. Some one asked the question, "What will be the cost of reclaiming an acre of alkali land?" Dr. Vinson replied, "The cost will vary ac-

cording to the amount of alkali in the soil, and this will have to be determined by chemical analysis of the soil. I don't suppose," he continued, "that any one would undertake to reclaim by the use of gypsum a large tract of land or as much as a quarter section, as the cost would likely be prohibitive, but if a man had a farm with two acres alongside of the road that had alkali so that nothing would grow, he could afford to reclaim those two acres of land that were an eyesore and would decrease the value of his property, if it cost him a thousand dollars an acre to do it." Gypsum is found in several parts of Arizona so

thoroughly there will not be much Johnson grass that will have much vigor at the end of the season." He advised a cotton crop for the second season. A grain crop in winter and then corn or grain sorghum is a good rotation provided there is not too long an interval between harrowing or cultivating to permit the Johnson grass to get a start.

Following these talks the visitors were invited to walk through the farm and see the growing crops. Dr. Geo. F. Freeman, plant breeder of the agricultural college, went along as guide to explain some of the work which is being done in the way of de-



Looking Over the Grain

This shows two plots of Macaroni wheat. Note the roadway is somewhat higher than the land where the wheat is growing hence the wheat does not appear as tall as it really is.

that the cost should not be excessive.

Prof. H. C. Heard then gave a talk on the extermination of Johnson grass. Prof. Heard has been agronomist of the state college of agriculture for a number of years, and the work of Johnson grass extermination has been under his direction, ably assisted by the farm superintendent, C. J. Wood. This was quite fully covered in the Cultivator last December, and the complete results of the experimental work has been published in bulletin form. Prof. Heard briefly outlined the work and the results accomplished and assured his hearers that Johnson grass could be exterminated and that it could be done and not interfere with any well ordered rotation of crops. He suggested that a good way was to plow in the fall, harrowing in spring repeatedly with a harrow which would cut off plants below the surface. "If this is done," he said, "the plant will become weak by mid-summer, and if the ground is then planted to a crop like corn or one of the grain sorghums and cultivated

veloping new and more productive strains of plants.

A number of different varieties of alfalfa which have been selected from individual plants or bred from crosses carefully made are being grown in rows so that results can be noted. Of the standard varieties of alfalfa, Dr. Freeman recommends the Hairy Peruvian as being best adapted to the Salt River Valley, but cautions any one sowing this to be sure to get true seed of the Hairy Peruvian.

The grains show up wonderfully well now. Twelve varieties of wheat are growing on the farm and seven or eight of these are in small plots of a quarter acre each, the seed of which has been grown from single selected heads. This of course represents several years work, but within a year or two there will be sufficient wheat so that it can be distributed among a number of farmers. Two varieties of Macaroni wheat show up well. This wheat has yielded as high as 67 bushels an acre. One or two other varieties seem to promise some im-



"Gentlemen, Note These Varieties."

Dr. Freeman explaining to the assembled farmers the different varieties of alfalfa which he has bred and is now growing in rows to compare with well established varieties.

provement over Early Baart, which at present is the most popular wheat of the valley.

In growing wheat Dr. Freeman says that we can easily raise 40 bushels of wheat to the acre and that if we will withhold water after the wheat reaches the milk stage we can produce as hard a milling wheat as can be grown in Kansas. Later irrigation he admits will add five bushels of wheat to the acre but at the expense of quality. He insists that millers should offer a premium for the better milling wheats. In his work of breeding wheat and making head selections Dr. Freeman stated that he has discarded more than 500 varieties of wheat that did not come up to his standard.

Oats too are being grown, one variety having yielded at the rate of more than a hundred bushels to the acre. Several varieties of barley, including the famous Wisconsin, are being tried out.

With the interest in cotton that now exists in the Salt River Valley, the experimental work being done with cotton will be watched with interest. Cotton planting began March 5 and has continued at intervals up to May 15. As these plantings are all in the same field the results should indicate the most desirable time for planting. Experiments are also being conducted in the thinning. This is a much debated question among cotton growers, and so to help throw light on the matter cotton is being grown from eight inches to four feet apart, in rows three and one-half feet apart.

It's been a cool spring. There always comes a hot day in June. That hot day in June causes unnumbered millions of little oranges, but a few weeks since blossoming time, to drop. This June drop is dreaded by every citrus grower, yet, as a usual thing, it is only sufficient to give proper thinning to the fruit, but last year was different. There is no absolute cure or preventive of this drop which may be due, not only to the heat, but to a fungus, to the trees being out of condition, shortage of irrigation, or possibly, other factors. But there is one point which has been observed by every observing citrus grower. The orchard in best of health, with trees supplied with plenty of moisture, filled with young growth and with dark green leaves, stands a whole lot better show than the illly cared for orchard. Dr. Coit has thought that green manure crops which keep the ground cooler, or a heavy mulch, which answers the same purpose, is beneficial. All these points are being considered by the citrus growers, and their orchards are being put into condition to withstand the June hot spell in 1918.

June 28 has been named as National War Savings Day. The president has so ordered. It is to be a day of signing the pledge. These pledges are already being sent out; they call for a statement as to the number of war savings stamps "I or members of my family" have purchased. "In addition to those now owned I agree to buy \_\_\_\_\_" with blanks for each month from June to December. And in addition, this: "I further pledge myself to save and economize, to help win the war."

Yes, they are holding the line, but folks back home must bring up the reserves.



# Agricultural News Notes of the Pacific Coast

## Northern California

The Lake Tahoe state road is open. Appointment of a farm adviser for Butte County will soon be made.

There will be a state convention of stock men held at Davis June 27-28.

Farmers of the Sutter basin will plant 40,000 acres to beans this season.

The Nevada County farm bureau is planning the holding of a fair and picnic.

Pear growers of Grass Valley, Nevada County say the outlook for a big crop was never better.

Hayward poultrymen are protesting at high priced feed, and say it's cheaper feed or quit the business.

The Pear Growers' Association is making a campaign for new members in Santa Clara and Alameda Counties.

Placer County has established a farm bureau labor headquarters at Newcastle with F. H. Howell as manager.

An increased acreage has been planted to rice in the Sacramento Valley, about 50 per cent over last year.

The California Producers' Exchange will build three steel grain elevators and a bean cleaning plant on the river front at Knights Landing.

The farm bureau of El Dorado County has taken up mutual fire insurance in connection with farm bureaus in Placer and Nevada Counties.

The wool clip of Tehama County, aggregating nearly a million dollars in value, is being shipped to Boston. The prices range from 45 to 68 cents.

The cannery of the Olive Products Company at Oroville is now working on fava beans, a winter crop which is in great favor with Italians and Greeks.

Butte County farm bureau is contemplating purchase of sluphur in carload lots for distribution among members.

The Tehama County council of defense has asked the board of supervisors to appoint a county fire warden, with an assistant in each precinct of the county.

The state university contemplates making its entire exhibit at the state fair as one university exhibit instead of having it distributed in the various departments.

The project which will bring Lake County water to Yolo County rice fields is being put through on schedule time. Four pumps will be in operation by June 15.

Rice men of Glenn County have petitioned Horticultural Commissioner H. E. Wahlberg to rigidly enforce the law requiring eradication of water grass and other rice weeds.

Sonoma County wool growers are complaining at the order from Washington commandeering all wool. They say the order has caused great hardship and destroyed the wool business on the coast.

Sheridan W. Baker of the Sonoma County Apricot and Prune Growers' Association estimates that the California prune crop this year will total 125,000,000 pounds, and at a price of eight cents to the grower should sell to the consumer in the East at 15 cents per pound, unless profiteering intervenes.

## Central California

Beans are reported coming up in the Las Posas section.

San Joaquin Valley's loss by grain fires last year amounted to \$16,000.

Women have been working in the orchards of Merced County thinning fruit.

Shafter, Kern County, potato growers are cooperating in marketing potatoes.

Twenty-nine carloads of steers were shipped from Oakdale last week by C. M. Ellenwood.

Fresno County chamber of commerce is getting behind the Pine Flat irrigation project.

The Lindsay Gazette reports set of oranges on older trees very light. The younger trees show big crop.

The pea hulling plant at Empire, Stanislaus County, is at the height of its run. Growers are being paid \$45.

The boys pig clubs of Fresno and Madera Counties will hold a big swine show at the Fresno district fair this fall.

The pea crop of the Ripon district has been light this season owing to lack of moisture and to heavy winds and frost.

Bee keepers of Fresno County held a picnic at Herndon Bridge May 25 under the auspices of the Fresno Bee Keepers' Club.

Farm Adviser Washburn of Santa Cruz County has been devoting much attention to the bee industry in the Pajaro Valley.

Selma canneries have closed their spinach pack, having handled a total of 197 carloads. In two weeks more the apricot season opens.

Bean growers of Stanislaus County have been getting together in an effort to organize as part of the California Bean Growers' Association.

The California Associated Raisin Company has contracted to sell the California Packing Company a large tonnage of raisins for the next six years.

There will be local farm bureau meetings during the month as follows: Lockeford, June 10; Linden, 12; Bellota, 13; Escalon, 17; Ripon, 20; Manteca, 21.

A farm center has been organized in Santa Cruz County, taking in the districts of Amesti, Carlton, Carrolton, Railroad, and the north portion of Watsonville.

Tegner, Stanislaus County, was the scene of a hog sale Wednesday May 29. The sale was held under direction of farm bureaus of Stanislaus and Merced Counties.

At a recent meeting of the Corcoran farm center, Kings County, it was decided to ask the board of supervisors to appropriate funds to provide fire fighting apparatus to protect grain fields.

Kern County farm bureau will hold local meetings at Delano June 10, Wasco 12, Rio Bravo 13, Edison-Fairfax 14, Tehachapi 17, Pond 19, Rose-dale 21, Weed Patch 24, Shafter 26, Arvin 28.

Two hundred and seventy acres have been planted to rice in the Riverbank section of Fresno County. This is the largest single acreage in that section but many plantings are now being made.

## Southern California

The new cannery at Elsinore will be ready for apricots July 5.

Swine producers of Imperial County have organized an association.

The new tomato cannery at Huemene will handle peas this winter.

Alfalfa growers of Imperial Valley have formed a marketing association.

The Santa Ana Walnut Association has let contracts for a new packing house.

Orange County's apricot crop is estimated at only about 30 per cent of normal.

The holding of a summer school at the citrus experiment at Riverside is being agitated.

Orange County reports apricots sizing up very rapidly. Cutting and drying will begin July 5.

It is proposed to give instructions in fumigation at the citrus experiment station at Riverside.

The raisin seeding house at El Cajon has been secured for a cannery. It will start on tomatoes.

A plan to stop the use of orchard heaters—during the period of the war—has been launched by Pomona growers.

The tomato acreage at Huemene in Ventura County is larger than ever this year. A cannery has been established.

Eddie Gordon, a graduate of the University of California, has been appointed assistant farm adviser of Riverside County.

The Van Nuys-Owensmouth section of San Fernando Valley will this year harvest 1000 tons of apricots and 10,000 tons of peaches.

The newly organized Orange County farm bureau is planning an auto tour of inspection to the Riverside citrus experiment station.

Bee keepers of Imperial Valley have organized. Twelve thousand colonies have signed up in this organization which will market the output of members.

The Imperial Valley Milk Producers' association on July 1 will take over operation of the Holtville Cooperative Creamery and the Delta Cooperative at Imperial.

The Harvey eating houses have contracted with Indio date growers for ten tons of dates. This sweet fruit is in greater demand than ever since the war shortage of sugar has manifested itself.

Prices for tuna and other fish have been announced by Seafood Commissioner Crandall of the Southern California district. The price for tuna is \$15 per ton in advance of last year's.

Citrus growers are discussing matter of changing orange pack so that instead of the extreme bulge now given to orange boxes they shall be packed flat so as to reduce total weight to the present 72 pound shipping weight.

Cattlemen of Imperial Valley have organized a marketing association and have elected the following officers: President Albert Moore of Imperial; vice president, Harry Jones of Brawley; J. P. Hertel, acting secretary; directors, O. L. James, Meloland; Wm. W. Ward, Brawley; H. P. Jones, Brawley; Fred Gunterman, Calexico; W. W. Cochran, El Centro.

## The Coast and General

Are you a potatrot?

Camp Lewis, Washington, is feeding 125 tons of hay daily.

The Florida Fruit Growers' Exchange held its annual last Tuesday.

Heavy rains seriously damaged much of Florida's early potato crops.

County farm agents of Oregon are beginning a campaign against squirrels.

The Texas peach crop will exceed 1500 carloads. They will be mostly Elbertas.

Yakima, Washington, recently shipped 40 carloads of cows and sheep to points farther north.

Palm Beach and Dade County in Florida have each about 2500 acres planted in castor beans.

Thurston County, Washington, will unite with the government in paving highways near Camp Lewis.

At no time in the past hundred years has the visible supply of wheat been so low as at this time.

A pupil in the public schools at Independence, Oregon, has sold thrift stamps to the value of \$6700.

Exceeding late frosts near the middle of May injured some tender vegetables and late fruits in eastern Washington.

Timely rains in eastern Washington gave winter wheat its needed moisture. It is now heading and is in best of condition.

Kennewick, Washington, is shipping carlots of strawberries. Its output will be in excess of 50,000 crates, or about 60 cars.

E. Powell Lewis of a large canning company at Melbourne, Australia, is investigating canneries and canning conditions in California.

The food administration at Washington reports that cases of bribery between food investigators and food distributors have been discovered and will be punished.

Oregon apple growers are appealed to to continue caring for their orchards. During the last few years many have been discouraged and orchards have been neglected.

Arizona reports weather cool and windy, especially in the southwest portion, so that alfalfa, cotton and cantaloupes, while in excellent condition, are somewhat backward.

New York state has six women farm labor specialists who are encouraging intensive farm labor methods and in suitable sections of the state will locate women's farm labor units.

A further cut in England's meat ration limits the cards to two a week, each entitling to a ten cent purchase. Nor is this the only shortage, and it is possible that a compulsory rationing system may extend to bread, cheese and tea.

Salt River Valley, Arizona, now estimates that she will require 25,000 cotton pickers and handlers to care for the crop this season. Pima cotton which is exclusively grown there is required in large quantity in the manufacture of airplane fabric.

Florida orange and grapefruit growers estimate that it costs 85 cents per box to pick, pack and market through the exchange. The average freight market from Florida to the Northern markets is 75 cents. Icing costs about 15 cents per box; most of the fruit, however, is shipped without icing.



# Some Pointers on June Drop

By Robert W. Hodgson



THE present time prospects are bright for a bumper orange crop next season. Assuming that a bumper crop is desirable, what can the grower do to provide conditions favorable for the setting of this bumper crop is the question which interests citrus growers just now. It is now too late to plant a summer cover crop and expect it to function during the critical period which is nearly half over. June and July will tell the story of what the crop is to be. Growers who do not have summer cover crops stand to suffer losses similar to those of last season if we get weather of the same variety. The fortunate thing is, however, that such remarkable coincidences of extremely high temperature, intensely dry air and hot dry winds as occurred during June of last season are very rare. The only economic method now known of preventing the June drop under conditions of the kind just mentioned is by the use of summer cover crops.

The June drop is largely caused by adverse climatic conditions and obviously then, methods of prevention must be in the nature of means to modify or ameliorate climatic conditions. Our citrus growers have not realized the "eternal fitness of things." We have been trying to grow citrus trees in our semi-desert climatic conditions without regard to whether they are adapted to these conditions or not. The orange is native to the tropics where climatic conditions are much more favorable for growth than they are in California. It is naturally ill adapted to withstanding the extremely dry air, intense solar radiation, and high soil temperatures of our long hot dry growing season. This applies particularly to the Washington Navel orange. Some of the hitherto unexplained difficulties which we have suffered are to be ascribed to this fact. Such are the June drop, splits, puffing, "dry" fruits and others. It is not unlikely that mottled leaf and die-back will ultimately be traced to abnormal unfavorable soil conditions.

One of the most efficient means of modifying climatic conditions is by the use of summer crops which cut down the soil temperatures by shading and also give off large quantities of water vapor into the air, raising the relative humidity about the

trees. In windy sections the use of windbreaks in connection with summer crops aids in preventing the blankets of moist air from being rapidly dissipated. The practice of using summer cover crops in citrus orchards is not a new one; only the application to the June drop phase is new.

the assertion that eight or ten years hence summer cover crops may be looked upon with as much favor as winter cover crops are at present.

But, granted the grower did not get a summer cover crop in, is there anything he can do now to help set the crop? The most important thing he

are irrigated they let go of it. For this reason many growers have been prone to assign the cause of June drop to the irrigating with cold water, or irrigating while the trees are in bloom. The fact is that the trees got dry and the shedding caused by the lack of sufficient water was only noticeable after the trees were irrigated. The ultimate cause of the shedding is the presence of water deficits in the young fruits, that is, they actually decrease in water content. If the trees cannot get sufficient water from the soil these deficits are very easily occasioned. Too much care cannot be taken to keep soil moisture conditions optimum. The experience of last season showed that no matter what soil moisture conditions were the drop occurred. That was due to the combination of extreme climatic conditions which does not occur every year. But where the soil was dry the drop was worse than where the trees had plenty of water. In ordinary seasons much good can be done by keeping the trees adequately supplied with water.

The matter of the proper period between irrigations is becoming more and more involved and only emphasizes the absolute necessity of each grower studying his own soil and irrigating only when the water content is below optimum. Growers must get away as much as possible from irrigation at set periods regardless of soil conditions. Thus investigations on the Limoneira orchard have shown that in the heavy soil characterizing that section, orchardists have been irrigating too often, and better results are now being obtained by less frequent irrigation. Again, work by Jansen has indicated that for certain soils in the Porterville section, irrigation must be done more often than is the present practice as the soil available to the tree roots actually reaches the wilting per cent a week or ten days before the ensuing irrigation. The writer is of the opinion from his knowledge of the citrus sections that many groves, especially on lighter soils, are not irrigated often enough.

Another factor bearing on the quantity of fruit set is the general health and vigor of the trees. Starved or weak sickly trees cannot be expected to set heavy crops. Other things being equal the grower who supplies his trees with a source of quickly available nitrogen during the critical period will have a better crop than he who neglects to feed his trees.



Resistance Increased by Optimum of Water Supply

A healthy tree with soil in best of condition is like a well nourished soldier, ready for the scrap when it comes. Don't over irrigate, but be sure the soil is supplied with sufficient moisture.

A number of growers have occasionally used summer cover crops for green manure purposes. Eight or ten years ago very few citrus growers used winter cover crops and the suggestion of their use was looked upon with disfavor. The writer ventures

can do is to watch his soil moisture conditions and keep the trees well supplied with water. The surest way to cause a heavy drop is to let the trees get dry and then irrigate. As long as the trees are dry they hold on to the fruit, but just as soon as they

## Flat Pack or Bulge



THE new freight rate, or rather the new weight of orange boxes, still calls forth discussion on the part of growers and shippers. Here are two statements, each issued after the Los Angeles meeting at which time it was ruled that the flat pack should be restored.

The first, favoring the present 78 pound bulge box, is by R. W. Irving in charge of traffic regulation at Riverside, in communication through Riverside Press. Mr. Irving says:

"From practical tests already made it has been determined that there is eight per cent more weight of fruit in a box with a full swelled top than in a box packed with a flat top. Basing our calculations on a crop of 50,

000 cars for California, which was produced a year ago and shipped, the railroads would be compelled in the event of a crop of similar size this coming year to produce 4000 additional cars, or in other words, 54,000 cars would have to be provided to do the work that is now being done by 50,000 cars.

"This decision on the part of the growers is all the more remarkable as it does not seem to take into consideration that the only aim and purpose of these United States for some time to come is to win the war. We submit to the lack of wheat bread,—we endure porkless days and other restrictions which the government has seen fit to impose upon us—and we have endeavored by subscription to

the Red Cross and other funds to aid the government in its task—but on the other hand we, as producers, and I personally am one of them, engaged in one particular industry, consciously or unconsciously, calmly by a resolution, attempt by greater demands on labor, by greater demands for material and by greater demands on the carrying facilities of this country, to undo all the work of conservation that has been accomplished since we entered the war.

"A decrease of eight per cent in the net weight of a box of fruit based on a 50,000 car crop will necessitate the production of about 1,600,000 more box shock. To produce this great number of boxes under the present condition of a shortage of labor was

a consideration that should not have been lightly overlooked, and especially in view of the fact that reports have been received of a possible shortage during the coming season of box material itself.

"As to the shortage of labor for packing houses and a limit of eight hours per day being established for the labor of women in packing houses, I need not write as these are difficulties which shippers will have to solve for themselves and even though they did not attempt to do more work in the future for the shipping of the same quality of fruit than they did in the past.

"To those of us on these transportation committees who have been working for months past on the prob-



# Completely Vaporizes Low-Grade Gasoline

## Results Guaranteed

- (1) Wonderfully increased mileage.
- (2) Smoother Running Car at All Speeds.
- (3) Carbon Greatly Reduced.
- (4) Greater Horse-power.

The always-cold Ford intake pipe is not adapted to poor-grade, low-test gasoline of today. It allows your fuel to enter the cylinders only partly vaporized. Only vaporized gasoline can be exploded to produce actual mileage. The rest is unconsumed fuel,—waste—producer of trouble making carbon.

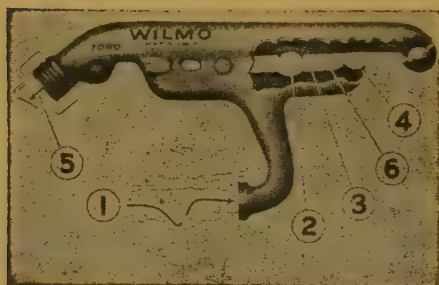
A carburetor only breaks up fuel into very small moist particles. It does not vaporize. Automobile engineers know that heat is absolutely necessary to vaporize the gasoline of today, but the problem has been how to keep it as a vapor until ignited by the spark plugs. If the greatest heat is applied near the carburetor, much of the fuel recondenses to a liquid while passing through the manifold.

The Wilmo delivers the fuel completely vaporized right into the cylinders because the heat is applied in increasing intensity, the least amount at the carburetor and the greatest amount just before the mixture enters the cylinders. There is positively no chance to re-condense to a liquid.

Thousands of WILMO users are getting a mileage increase of over 35 per cent—one of the many direct advantages of the Wilmo Manifold. Write for these testimonials.

You can apply the Wilmo in a few minutes. Once installed, it becomes a permanent part of the engine. No holes to bore. No loose parts. Nothing to watch.

## For Fords and Simple as ABC



The Wilmo Manifold is a simple casting, combining in one piece the exhaust pipe and intake manifold.

- (1) Air and gas pass into mixing chamber in regular way.
- (2) Exhaust from cylinders heats dividing wall (3).
- (3) Hot dividing wall between exhaust and intake chamber of manifold.
- (4) One of intake portholes at which gasoline is superheated and completely vaporized by heat from hot dividing wall (3).

- (5) Outlet to muffler through which exhaust gas passes, free from carbon.

- (6) One of bolt holes, for quick installing.

With a Wilmo you will experience a new riding comfort and a new pocket economy. In a single season it will pay for itself many times over in increased mileage alone. Thousands have proved it.

With a Wilmo your engine will become wonderfully flexible. You will get a quicker, snappier start, especially in cold weather. Every drop of gasoline will do full duty because VAPORIZED.

Order now. If your dealer is not supplied, order direct, giving his name. Having a Wilmo means securing all the mileage that is now doubly yours by right of price and cost of waste.

The Wilmo Manifold for Ford Model T Cars west of the Rockies, sells for \$10.00. With special Imperial Primer so that you can use distillate, the price is \$16.00.

## Automobile Necessities Co.

Syndicate Building

Oakland, California

# WILMO-IZE YOUR FORD

lem of car conservation this resolution on the part of the shippers comes as an absolute blow, and as expressed above, seems to annihilate all the work that we have accomplished in the past.

"While the citrus growers and shippers of California have valuable interests, they should certainly appreciate the fact that their product is not an essential to the winning of the war and they should therefore be only too willing to aid the government in the conservation of cars by paying the increased freight rate per box rather than through lessening the weight throw difficulties in the way."

### Flat Pack

The reasons for the return of the flat as given by one of the packers, A. M. Pratt of the Mutual Orange Distributors, are as follows:

### A. M. Pratt

Time and again, growers as well as the Eastern tourists, and practically everyone that has gone into a packing house for the first time, have expressed their surprise at seeing oranges come up to the press with the last layer almost entirely above the sides of the box. The usual comment is, "You are not going to nail a cover on that box, are you?" But this box slides along to the press, the man jumps on the lever and pulls the oranges down somewhat in the center, but way down in the ends, enough so that the covers which are sprung over the oranges are held in place at the ends, with a big bulge in the center. The visitor and the grower usually say, "Doesn't that hurt the oranges? Doesn't it make them all misshaped? Why on earth do you want to jam the oranges into a box like that?" We have all been trained to smile and explain that the oranges are not hurt very much, that creasing an orange and slightly bruising the top layer isn't so very serious, that we don't like to handle the orange this way, but that we are compelled to on account of competition. The visitor again asks why, and suggests that he is sure that anyone who buys oranges doesn't want to get square, pinched up oranges like that, and we again explain that the good Italian and Greek peddlers take the square, misshaped oranges and manipulate them enough to make them round again before putting them in their pyramids on display; that we wouldn't have to do such things with the oranges if other packers weren't putting up such high packs that we had to do it or else allow ten to 25 per cents per box because of the prejudice of the trade against a flat package.

When you come to analyze the problem, the chief reason that the carload buyer, the wholesaler, and the retailer have requested this high bulged package is due to the natural jealousy and envy of a competitor. Every man is afraid the other buyer will get more weight in a box and a bigger package, and he is mighty jealous about seeing that he gets as big a package and as much weight as the other fellow or he raises a great hue and cry about it.

Several years ago I spent ten days in New York analyzing the packing and selling problem of the Elephant orange, of which house I was then manager. Talking with Westfall, our representative at that time, his first complaint was that the Elephant orange was not packed high enough. I knew that we had gone to the extreme limit in not only squeezing every orange into the box, layer by layer as it was packed, but by putting the last big squeeze on at the press; and

that we couldn't get any more oranges into the box unless we started a marmalade factory. I systematically followed up what happened to the Elephant orange and got to talking with a lot of the little dealers who commended very highly the flavor of the orange and said that no other orange was like it, this being the quality that Redlands can certainly boast of over any other district, but I was surprised and pleased to have a good number of these fruit men suggest, in a courteous way, that our oranges should not be squeezed so much and that they were "too square" and that they didn't want the box so full. These are facts and not imaginations.

The bulged package has gone to a ridiculous extreme where no one gets the benefit. It has done no one any good—it has caused all kinds of breakage in the cars due to the strain on the boxes, and it doubtless has had much to do with the decay. On my trips I have frequently observed that the end oranges and the oranges that were bruised by the press were nearly always the ones that were showing blue mold at the other end. If one or two shippers controlled the peculiar knack of putting up this high pack and using it as a grandstand play for their own benefit, those few shippers would get the benefit, if the rest of the packers put up a flat pack, and providing these few shippers could get the same flat rate and appeal to the trade as giving them something which they could put over on their competitors. But the facts are that when the auction markets showed the high prices that this bulged pack brought to those that first initiated the idea, everybody finally got to doing it and nobody got the benefit, and it has simply been a vicious practice which unintelligent competition has brought about.

### Fundamentally Correct

Fundamentally, a standardized package of anything is correct in an industry. If the seller and the buyer both know that the package has well-defined measurements and weight, it does away with the distrust of the competitor and the playing in an unfair way of one competitor against another by making false claims of differences in measurement, weight or height. The orange business has supposedly had a standardized package, but until this new ruling goes into effect it has never been actually standardized. With shippers using a bulge of from one inch to eight inches at the center of the cover, there was and always will be a wrangling due to "undersized" oranges because a buyer thinks that someone else is going to get a bigger bulge on his box than himself, and he wants to have the bulge on him.

A straight line package, nailed all round to the center, will do away with this wide variation—more than this, with the railroads having advanced their rate to 78 pounds, instead of 72, there would seem naturally a tendency to go to greater extremes than have been practiced, so as to try and get the full benefit of the higher freight rate, and if there was no means of standardizing such a package it would necessarily result that the railroads would again advance their estimated weights and the freight be still higher.

This common sense attitude of standardization is not an effort to take advantage of the trade or to be cunning and give the trade less fruit for the money, or to be "penny wise and pound foolish." The buying trade as a whole will naturally rise in protest at first but I am confident after

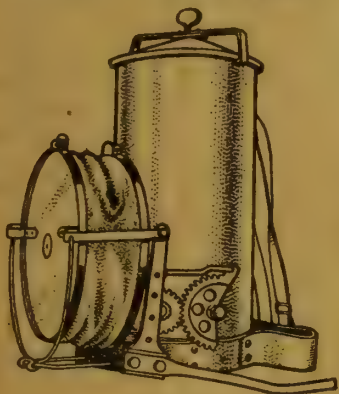


the new box has established itself, every buyer will say that the thing was the best for the industry and the trade as a whole. The circular statement we are sending to our agents is as follows:

#### Military Front Soon Necessary

At a meeting in Los Angeles Monday, May 6, shippers representing at least 90 per cent of the citrus industry, after a thorough discussion of the problem voted favorably adopting a positive standardized package of

## AMERICAN BEAUTY DUST SPRAYERS



### Red Spider

Is Getting YOU—Get HIM

with extra fine dry sulphur—applied thinly and evenly—at proper intervals.

Send for our Book

NO WASTE. Costs less than one cent per tree when done with the

American Beauty Dust Sprayer

At Your Dealers

or we will send it to you for

Standard size .....\$16.00

Junior size .....\$13.50

The California Sprayer Co.

6029 Pasadena Avenue

Los Angeles.

Reedley, Calif.

known cubical contents by requiring not only the ends but the centers of the tops to orange boxes to be nailed to the box, the cleats to be on top in all instances. This came about as the result of the bulged pack data that the railroads have been gathering proving that the pack averages 78 pounds, whereas the oranges have been taken at an estimated weight of 72 pounds. By the tariff heretofore, technically, the railroads could have required this cubical package, as the description of the measurements of the box does not provide for the bellied top. Instead of doing this, however, they advanced the estimated weight to 78 pounds, thereby increasing the rate per box.

It was felt that a standardized package was fundamentally correct. A buyer would know that his competitors were not getting more oranges in a box than himself. After the trade becomes accustomed to it, it is believed that they will prefer it because of it doing away with the constantly increasing demand made to deliver a bigger and bigger bulged box, and the uncertainty and demoralization resulting from irregular weight and sizes. Breakage should be less, decay should be less and ventilation better in cars. If a smaller dimension box were considered, the automatic box making and nailing machines could hardly be changed to conform to the reduced dimensions; and in box factories it would mean changes that would be necessarily slow in action and getting into common use. It was also felt that if we continued packing the swelled top, that in order to get our money's worth, the bulge would be carried to ridiculous extremes.

The idea will not be adopted until the railroads officially advise when the former rate on the 72 pound basis will become effective on this standardized straight line package. All of our oranges will be the full bulged package until we advise you to the contrary.

#### IMPORTANT FEDERAL CONFERENCE OF CITRUS INTERESTS



THE UNITED STATES tariff commission will hold a conference in the rooms of the Los Angeles Chamber of commerce on June 17 and 18.

The meeting is for the purpose of conferring personally with all who are interested in the citrus fruit and olive industries. A similar conference with those interested in the raisin industry will be held in Fresno on June 20, and with those interested in eggs at the San Francisco Chamber of Commerce, June 25. All of these conferences will begin at 10 a. m.

It is the purpose of the commission to confer, not only with the producers, but with dealers, importers, and in fact all who are identified with the various products. We hope that the meeting will be representative, and that the commission will be able to obtain information that will be of assistance in compiling the tariff information catalog. This catalog will be at the disposal of congress when it again considers tariff legislation.

#### Information Desired

Present condition of the industry and developments since tariff act of October 3, 1913.

Extent to which the American production can supply domestic requirements.

Comparison of competitive foreign with domestic products in prices.

Continued on Page 694

## TEAGUE QUALITY CITRUS TREES

AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

### The R. M. Teague Citrus Nurseries

Box 67, SAN DIMAS  
CALIFORNIA

FOUNDED IN 1889  
AT IT 29 YEARS



## W. J. Bush Citrus Products Co., Inc.

National City, Cal.

Manufacturers of

ESSENTIAL OILS AND  
CHEMICALS

Citrus By-Products  
a Specialty

We are always in the Market  
for Lemon Culls

## Citrus Seed Bed Stock

Bour Orange Seed Bed Stock, strong, thrifty, one year plants 10 inches and up. Absolutely free of scale.

Walker-Hubbard Nursery Co.

San Fernando, Cal. Office First National Bank Bldg.

Plant Your Potato Land When Crop is off to

## Rhubarb

If planted then you can expect BIG PROFITS by fall or early winter.

OTHERS MAKING \$1,000 PER ACRE ANNUALLY

—SO CAN YOU. Don't put it off any longer. June positively the best month to plant. Write

J. B. WAGNER, "Rhubarb Specialist"

Pasadena California



## Insure Yourself Against Loss

Have  
Plenty  
of  
Water

INSTALL A HERCULES GASOLINE ENGINE on your property. These wonderfully efficient engines are daily demonstrating their dependability in delivering water to the surface of the ground or forcing it to an elevated position.

High prices for farm products make it necessary to see that your pumping facilities are RIGHT. Is your present plant delivering all of the water you require and at a low enough cost?

DEALERS:—Write for Unoccupied Territory

### Smith-Booth-Usher Co.

The Pump and Engine House of the Pacific Coast

Exclusive  
Distributors

LOS ANGELES

## Early Amber Sorghum

Makes the best Silage and produces the greatest tonnage per acre

Recleaned Seed 9 cents per pound  
F.O.B. Stockton

### Aurora Seed Mill

48 North Aurora St.

Stockton, Cal.

When writing advertisers, mention The Cultivator.





**"I bought 5 boxes"**

of Eureka Stumping Powder and now I want to sell a lot of other powder that I have," writes Rudolph Stadel, Silverton, Ore. "The other powder makes me terribly sick when I try to use it, but Eureka does not give me the least headache."

Eureka Stumping Powder is one of the two

**GIANT FARM POWDERS**  
STUMPING — AGRICULTURAL

Eureka goes further and costs less for all agricultural blasting than ordinary powder or dynamite.

Eureka and Giant Farm Powders are made especially to meet western farm conditions. They are made by a Pacific Coast Company, with more than a half a century of experience—the company that originated all "giant powders." Your dealer can supply you. If he does not, write us and we will see that you get the genuine, which has the Giant brand on every box.

Save money on farm work. Send this coupon for our big free book, "Better Farming." It tells you how to do scores of farm jobs cheaper and better.

**THE GIANT POWDER CO., Con.**  
"Everything for Blasting"  
Home Office: San Francisco  
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## SEND for THIS FREE BOOK

THE GIANT POWDER CO., Con., First National Bank Bldg., San Francisco  
Send me the 52-page illustrated book "Better Farming." I am especially interested in (please check) 212

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## This Saw Cuts 25 Cords of Wood in One Day

It is absolutely guaranteed—hundreds in daily use.

Write for our booklet "How Dan Ross Cuts 40 Cords a Day".

Stocks  
Carried in  
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**Wade's**  
**Gasoline Wood Saw**  
4 H. P. Engine (Portable)

This wonderful invention does TEN TIMES the work of TWO MEN in the woods.

With it you can make money out of your wood simply through the immense saving in time and labor. One man can handle it on a log and two can move it from log to log. Will cut a 40 inch log in five minutes. Write us today.

**REWADE & CO.**  
SINCE 1865

339 Hawthorne Av., Portland, Ore.  
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### Perforated Tree Protectors

Why use anything but a PERFORATED PROTECTOR, which allows free circulation of air and sunshine to gradually harden the tender bark. Practically a small LATH HOUSE ABOUT EACH TREE. Protects from Squirrels—Rabbits—Goats—Hot Sun—Sand Storms—Barking in Cultivation, etc.

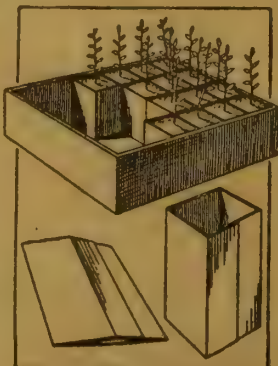
We make a number of kinds. TELL US YOUR PEST, and we will tell you what kind to buy. Get our prices. We can save you money.

#### COLLAPSIBLE PLANTING POTS

Why not raise your early Tomatoes, cabbage, chili and egg plant for home use or for market. Do you know that you can start

Cucumbers, cantaloupes, melons of all kinds in these pots in flats until they have three and four leaves then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.

Write for samples and prices of both Pots and Protectors. State which you are interested in. THE EXPAN CO., 935 E. Central Ave., Redlands, Cal.



## Prune Prices

Shippers of California fruit have at times fixed minimum price of their product in the endeavor to prevent loss to themselves and, in fact, secure as big return as possible. War times have changed all these conditions, and now the daily press reports:

"For the first time in the history of the prune industry in California growers are to fix a maximum price to themselves.

This action was agreed upon recently at a conference between more than 50 independent growers for the different sections of the state, and representatives of the Prune and Apricot Growers' Association, Inc., with Federal Food Commissioner Ralph P. Merritt. Merritt later will appoint a

commission of nine members, consisting of independent growers of various sections and a delegate who will have full authority to act for the Prune Growers' Association, to determine the base price to the producer.

"The price determined upon must bear the indorsement of the United States food administration for California and will be based solely upon the present cost of production.

"The status of contracts now existing between packers and growers will be determined later by the food administration, it was announced.

"The price to the growers will be fixed within the next 30 days, after crop and labor conditions have been determined more fully, it was announced."

## Labor Situation in Placer County

Placer County's Farm Labor Committee reports: After extended deliberation the committee arranged a schedule of wages in fruit work, considered just and equitable to employers and employees. The figures are intended for work under normal conditions. It is possible there may be rare cases in which the wages should be more or less than here given, but it is very important that the schedule be adhered to just as closely as possible. It should be generally understood that these are the going wages and any changes to be made only by the farm labor committee, which will meet from time to time.

General farm work, 30 cents per hour.

Picking cherries, two cents per pound.

Packing cherries, 15 cents for 12 rows or less.

Packing cherries, 18 cents for over 12 rows.

Packing plums, six cents per box.

Packing peaches, three cents per box.

Packing pears, seven cents per box.

F. H. Howell is county labor agent and has an office at Newcastle. J. W. Barry at the County Exhibit Building, is listing all available help down there.

Employers who furnish sleeping and eating quarters, bath, and other necessary conveniences, can secure all necessary help.

Fifty school teachers from Sacramento want to help us in the fruit harvest after June 7.

## Increase in Production of Potash

THE output of all potash materials produced and marketed in the United States in 1917, as reported by the manufacturers to the United States Geological Survey, Department of the Interior, was 126,577 short tons, which contained 32,366 short tons, or an average of 26.4 per cent, of pure potash. This is more than three times the quantity produced in 1916 and corresponds very closely with the output predicted for 1917 by H. S. Gale, of the United States geological survey, from a review of the mid-year statistics. The approximate average selling price of these potash materials at the points of shipment was \$4.26 a unit—that is, \$4.26 a ton for every one per cent of pure potash in the material marketed. This price corresponds to \$426 a ton of pure potash. The total value of the potash produced in the United States in 1917 was \$13,791,922.

In the following preliminary summary by Mr. Gale the production in 1917 is classified with as much detail as is consistent with the survey's obligation to hold individual reports of production confidential.

#### Output from Brines

The output of one of the four plants producing potash from brines in western Nebraska considerably exceeded that from any other one source or district, and the combined output of these plants represents about 45 per cent of the total for the entire country. Searles Lake, California, was the other source of large production from brines.

#### Potash from Kelp and Alunite

The potash produced from kelp rep-

resents about ten per cent of the total. A large part of this was high grade potassium chloride produced by two companies and the rest was divided among eight other producers, who manufactured kelp char or ash carrying 16 to 36 per cent of potash, used as an ingredient of fertilizer. An unexpected shortage of the kelp crop curtailed the production from this source in 1917.

The production from alunite was not so great as had been expected, though two additional producers from this source entered the field during the year. The plant of the original producer was destroyed by fire in October, and, though the work of reconstructing it has been pushed rapidly, it had not been put into operation by the end of the year. In addition to the high grade potassium sulphate produced from alunite a considerable quantity of calcined alunite carrying 16 per cent of available potash was marketed for incorporation into fertilizers, and raw alunite was shipped to Eastern reduction works to be treated for the recovery of potash.

#### Potash from Sugar Manufacture

A fairly high grade potash produced from the residue of charred molasses at alcohol distilleries, representing nearly nine per cent of the total output, was, like kelp char, used in fertilizer mixtures.

The quantity of potash recovered from the waste liquors produced by the Steffens process of beet sugar manufacture was somewhat augmented in 1917, and many experiments designed to increase the output from this source are being made at beet sugar factories throughout the country.

#### Cement and Blast Furnace Dusts

Eight cement mills reported produc-



tion of potash salts or of potash rich dusts sold as fertilizer during the year, the quantity marketed from this source reaching a total of 13,582 short tons, representing 1621 tons of actual potash. The recovery of potash from cement dusts, which is being rapidly extended, seems to offer large promise for a greater domestic potash industry, and it is expected that the production from this source may take second place in the summary by sources for 1918.

The dust collected from blast furnaces is a significant though still a minor item in the total for 1917. The production of potash from this source may eventually be large, but in view of the stress under which the steel plants are now operating this process may receive but little attention during the war.

#### Ashes Still a Factor

Crude potash is still produced by the old methods of leaching from wood ashes in the hardwood lumber districts, chiefly in Wisconsin and Michigan. Complete statistics of this output are difficult to obtain. Many of the producers keep no exact records of their operations and do not always know the quality of their product, so that exact interpretation of the figures they furnish is impossible. Reports from 36 producers in 1917 show a gross output marketed of 700 short tons, having a value of \$406,856. This is assumed to be about 424 short tons of actual potash.

Refined potash salts were produced from wool washings in 1917 by at least two plants, and some potash was produced from the ash of char obtained by burning other waste organic matter at several industrial establishments.

#### Production One-Seventh Normal Consumption

Potash was produced in 1917 by 82 firms, including 36 wood-ash leachers, most of them operating small works. The total production is about 13 per cent of the normal consumption of potash in the country during the years immediately preceding the war. There is now no crisis as regards the potash supply of the country, though the prices paid for what is obtained are about ten times the normal prices before the war.

All firms have been seriously handicapped by shortage of labor and fuel, difficulties of transportation and inability to get needed equipment. Potash producing plants have been generally included among the industries that are necessary to win the war, and there is a widespread sentiment in favor of assisting, so far as possible, the operations of these plants by giving special consideration to their actual needs. It is exceedingly unlikely, however, that government operation or any direct government financial aid to new enterprises for producing potash will now be considered necessary in view of the successful results obtained from the many privately conducted projects.

#### CROP REPORT

E. S. Kellogg, Horticultural Commissioner, Santa Barbara County

Walnuts will run about 75 to 80 per cent. There has been little blight or aphid injury to date. Peaches have set rather light, about 75 per cent. Apricots are very light, being much heavier in the northern end of the county. We expect about 50 per cent of a crop. Lemons are 100 per cent and better. Apples and pears are showing up good, about 85 per cent.

## The Drying of Tomatoes

By W. V. Cruess and J. R. Zion



VERY convenient way of preserving tomatoes is in the dried state. There are two forms of dried tomatoes, the dried whole fruit and the dried pulp or paste. Both of these products may be dried by solar heat or by artificial driers. The method used will depend on the locality and the amount of sunlight available.

#### Dried Tomatoes

Tomatoes for drying should be firm in texture and not very juicy. Cut the tomatoes in half and spread on trays with the cut surfaces upward. Place the trays of cut tomatoes in a sulfur box and sulfur them for one and one-half hours. A convenient sulfur box can be made by covering a frame with building paper, the frame being large enough to be set down over a stack of trays. An ordinary fruit sulfuring box or house can be used to advantage. The sulfuring is to prevent molding during the drying process and to prevent darkening of the color. Spread the trays in the sun and leave until the tomatoes are leathery in texture, but not brittle;

or the tomatoes may be dried by placing them on the floor of a hop kiln or in an ordinary apple evaporator. The best products are made by artificial evaporation, but very attractive and palatable dried tomatoes can be made by drying in the sun. This, of course, is the cheaper method of drying. Dried tomatoes are subject to attack by insects. If they have been dried in an artificial drier they will contain no insect eggs, but if they have been dried in the sun there is danger of their having been infested with insects. If sun dried they should, after drying, be heated in an oven long enough to kill insect eggs. The tomatoes should then be packed in containers that are insect proof. This may be done by wrapping them in paper and storing them in sacks. Sacks alone are not proof against insects.

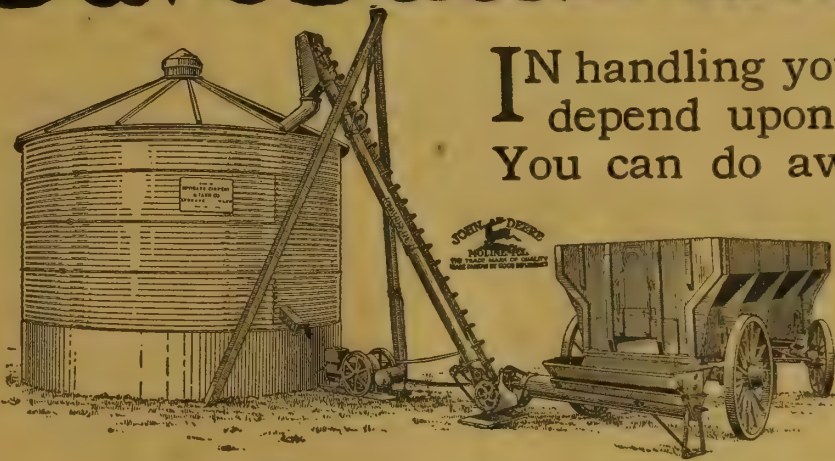
#### Tomato Paste

Dip the tomatoes in boiling water for half to one minute to loosen the skins. Peel them and break up into a fine pulp or puree. Special machines are available for this for commercial production or a small household pulp machine may be obtained through

a hardware store. An ordinary food chopper fitted with fine cutting knives will answer the purpose. A better product is made if the seeds are eliminated by passing the pulp through a fine screen. Boil down the pulp until it gets very thick. Frequent or constant stirring will be necessary to prevent scorching. When the tomatoes have been concentrated in this way as far as possible on the stove, the concentrated product should be poured out on trays and left in the sun until it has reached the consistency of thick peanut butter, or it may be dried in an artificial drier in a similar way. The paste may be seasoned during the boiling down process by the addition of suitable spices. Mrs. Jessica Hazzard of Los Angeles recommends the addition of two sliced onions, two buttons of garlic, one bay leaf and two or three chili peppers to each gallon of the tomato pulp before concentration. The Italian method also involves the addition of olive oil and a considerable quantity of salt. If dried sufficiently the paste will keep in jars or cans without sterilization. The yield is about one pound of paste to every ten or twelve pounds of tomatoes. To insure keeping of the paste it may be placed in jars and the jars sterilized for one hour after the water has reached the boiling point. An ordinary wash boiler sterilizer can be used for this purpose.

The paste is excellent for flavoring soups, rice, macaroni, stews, etc.

# Save Sacks and Backs



IN handling your grain crop, don't depend upon expensive sacks. You can do away with this big yearly expense item for all time to come. Make the change now. Handle your grain in bulk with a

## JOHN DEERE

### TUBULAR STEEL ELEVATOR

The saving you can effect in sacks, time and labor, will soon pay for this equipment. The John Deere Elevator is not a temporary means of meeting the present shortage of sacks—it is permanent equipment that will continue to save you money for years to come.

### Ease of Operation—Low Operating Cost—Years of Satisfactory Service Absolutely Assured

**It handles all small grains**—wheat, oats, rye, barley, shelled corn, flax, rice. It has big capacity—it elevates 15 to 20 bushels per minute—handles the biggest load in six to ten minutes time.

It elevates from the wagon into tanks, granaries or cars. It elevates from tanks or storage bins into wagons. Operated by a team of horses or 2½ H. P. gas engine or larger.

The hopper can be folded up out of the way when the load is driven up. Backing the wagon is unnecessary. Hopper is provided with an adjustable feed—you can quickly adapt the capacity of the elevator to the power you apply.

**Built of steel almost entirely**, it will not warp or decay. The elevator proper is made of ½ in. steel well-casing, 6½ in. in diameter. It will never wear out. Portable outfit furnished for large ranches where quick transportation is required.

Because of the many years it will serve you and its extremely low maintenance cost, the John Deere Tubular Pony Elevator is decidedly the most economical elevator to purchase. It is a real solution of your grain handling problem. Buy now, while your dealer is in position to supply your needs. Save money by getting the best—the John Deere. Elevators carried in stock by John Deere Houses at Portland, Spokane, Seattle, Boise and San Francisco.

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Elevator in position for elevating from the tank into the wagon

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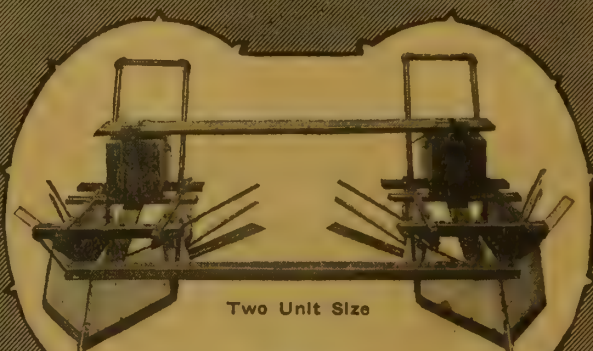
The pointed guide at front separates the vines and prepares them for the knives while the guards above knives gently roll the vines in rows outside the harvester, saving fully 10 per cent of shattered beans.

Knives easily removed for sharpening or replacing.

Prices will be advanced after July 1st, 1918.

Get information from your implement dealer or write for new folder to

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Two Unit Size

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Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

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will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

## HAUSER PACKING COMPANY

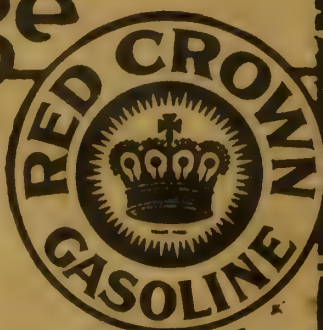
9th and Mateo Sts. **PHONE** 10336-Bdwy. 5600 Los Angeles, Cal.

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## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Turkeys Rheumatic

Some of my turkeys seem to have sore legs, swollen and red about the joints. The skin seems to turn white and the turkeys peck at them and sometimes in walking they lift them up quite high and step as though tied. One of them seems quite dumpy, separates from the flock and doesn't eat, but stands with head down.—R. C. N., San Dimas.

This is rheumatism and is due to dampness somewhere in the environment of the birds. Do they sleep in houses where moisture has collected on the floor or that are so closely shut up that the turkeys breathe and rebreathe the warm, moist air? Perhaps they have been running on wet alfalfa or grass. Young turkeys especially are quite susceptible to moisture underfoot. Roosting out in fog or even rain, such as we have in this climate, ought not to hurt turkeys that are past their infancy, but confinement in damp houses or running in the wet often gives them rheumatism. Painting the legs lightly with tincture of iodine is useful in controlling the inflammation, and the birds should have all the green feed they will eat, but the disease can be cured only by removing the cause. See that they are in a dry, warm, well ventilated coop if they are too young to roost out, and that they do not run on wet ground.—J. A. K.

### "Fuller's Rose Beetle"

Is the "Fuller's Rose Beetle" sometimes called "Florida Dog?"—Subscriber, Chula Vista.

We have never heard of the term "Florida Dog" being used in place of "Fuller's Rose Beetle" (*Armigus fulleri*), and find no reference to it in the entomological books in our library.

### Native Grasses

May I ask you to write me the names of the grasses I enclose, both the common and scientific names if possible. Several of them seem to grow so easily that I have wondered whether they might not be grown for hay instead of barley, more like the Eastern grasses that are sown and cut for hay?—Subscriber, Long Beach.

No. 1, *Phalaris minor*. One of the Canary grasses; No. 2, *Polypogon monspeliensis* (Beard grass); No. 3, *Bromus unioloides*; No. 4, *Bromus villosus*; No. 5, *Bromus hordageus*. The Brome grasses are used in Europe for thickening the grass crops but their food value is low on account of the coarse quality. It may be different here especially in silo so you had better consult the University of California Publications.—A. D.

### Tomatoes Dropping

Why do first crop of blossoms fall off tomato vines? Flowers bloom out full and later stem falls off.—Subscriber, Del Mar.

This fault of tomatoes has been perplexing to many gardeners. It is in part due to the cold weather and will disappear when hot weather comes. Prof. Stanley Rogers in Bulletin No. 239 suggests: "If unfavorable weather conditions cause the blossoms to fall, the time of planting might be changed. Unless the soil is very deficient in nitrogen it is generally better to apply stable manure at least one year before growing tomatoes. Soil which is naturally too rich in nitrogen for the fruit to set well should be avoided.

Do not overirrigate when the blossoms are opening."

### Loquats Dropping

Every year my loquat trees are full of flowers and then they drop off. Do I water them too much or not enough?—Subscriber, Owensmouth.

I do not think irrigation has anything to do with the dropping of the blossoms on your loquats. It may be a case of thrips and I would advise you to have your horticultural commissioner investigate. We know that this insect caused a heavy dropping of bloom in other fruits. If the loquats in your locality are not affected by thrips it might be that this is due to the variety, or that the soil is not suited to them.—J. W. M.

### Sudan—Alfalfa

In the last issue of the Cultivator you state that Sudan hay is not equal to alfalfa. Some few years ago I saw a government analysis comparing Sudan with alfalfa which placed Sudan very little below alfalfa—practically about the same. I was not much interested in Sudan then and the bare comparison is about all that I remember now. I know however, from experience that cattle and horses relish and do well on Sudan hay, consuming most of the rank growth that comes from sparse seeding on rich soil. Sowing more freely would no doubt make better hay. Some say five pounds drilled is enough but I would prefer eight or ten where there is considerable moisture or it can be irrigated.—Subscriber, Arlington.

Without question Sudan is a very valuable addition to our hays or fodders. Henry & Morrison's "Feeds and Feeding" says regarding this close relative of the sorghums: "The hay is equal or even superior to millet and can be fed to all classes of stock without injury" and "in composition it closely resembles timothy and Johnson grass." The same book does not give the analysis of Sudan but it does of timothy, which it says it closely resembles in analysis. The average of various analyses shows water, 11.6; ash 4.9; crude protein, 6.2; fiber, 29.9; nitrogen free extract, 45.0; fat, 2.5. From the same table average analyses of alfalfa show it to contain: water, 8.6; ash, 8.6; crude protein, 14.9; fiber, 28.3; nitrogen free extract, 37.3; fat, 2.3. Bear in mind in saying that Sudan is about the equal of timothy or millet we mean pound for pound. The acreage yield of Sudan is more than double that of either of those crops.

### CITRUS TARIFF CONFERENCE

Continued from Page 691

quality, methods of packing and shipping, demand.

War disturbances—effect on production, labor, shipping, markets, expansion of growing areas, supplies of commercial fertilizer and other essential materials.

Costs of production and distribution in 1918 as compared with 1913 and 1914: Land values, labor, materials, shipping, marketing and other items of cost specified. Comparison of costs with those of foreign countries.

Foreign competition: Conditions in the industry in other countries that may affect competition with domestic products; extent to which foreign organizations control prices, production and distribution, and stimulate trade. Description of internal and export taxes in other countries and their effect on the trade.

Division of domestic markets be-



# Protecting -food, -Stock -and human life

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Losses that are irreplaceable may easily occur from defective roofs.

Repairs to buildings should be made while it is possible before costs mount too high.

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tween domestic and foreign crops: To what extent has there been such a division. Comparison of rates to the Eastern states with ocean freights from foreign sources of supply in 1913, 1914 and 1918.

Panama Canal: Shipments via canal, effect upon transportation costs to the East under normal shipping conditions.

Adaptability of producing areas to other crops.

Prospects for by-product industries.

Export markets: Prospects of increasing exports; restrictions; plant quarantines and inspection requirements of other countries.

The effect, if any, of the activities of the federal and state governments in stimulating industry—such items as standard grades, standard containers, quarantines and inspection, control of insect pests and fungous diseases.

### CONFERENCE ON THE RAISIN INDUSTRY

Outline of information desired at conference in Fresno, June 20:

Present condition of the industry and development since tariff act of October 3, 1913.

Extent to which the American production can supply domestic requirements.

Comparison of competitive foreign with domestic products in price, quality, methods of grading, packing and shipping, demand.

What raisin varieties are imported and to what extent are imported varieties produced in the United States?

War disturbances—effect on production, labor, shipping and markets, essential materials.

What part of the recent increase in production and exports of raisins is due to demands for military and naval establishments of this and other countries? How much of this increase may be considered as other than of a temporary character?

Costs of production and distribution in 1918 as compared with 1913 and 1914: Land values, labor, materials, shipping, marketing and other items of cost, specified. Comparison of costs with those of foreign countries.

Foreign competition: Conditions in the industry in other countries that may affect competition with domestic products; extent to which foreign organizations control prices, production and distribution, and stimulate trade. Description of internal and export taxes in other countries and their effect on the trade.

Freight rates and ocean freights: Comparison of freight rates to the Eastern states with ocean freights from foreign sources of supply in 1913, 1914 and 1918. Panama Canal: Shipments via canal, effect upon transportation costs to the East under normal shipping conditions.

Domestic production: Competition with other states. Chief varieties of table, wine, and raisin grapes and their relative importance. Effect of excise taxes and spread of prohibition upon production of raisins and table grapes, and in the trend towards table, wine, and raisin varieties. Measures taken to develop markets and increase consumption.

Export markets: Prospects of increasing exports; restrictions; plant quarantines and inspection requirements of other countries.

Activities of the federal and state governments—such items as quarantines and inspection, control of insect pests and fungous diseases, standard grades and containers.

Organizations: Name, executive officer, proportion of crop controlled.

## Cleveland Tractors

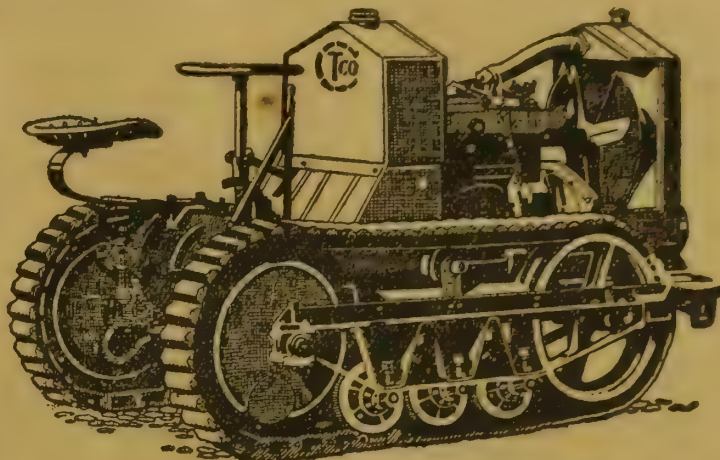
Buy Now

Save \$105

The price of the Cleveland Tractor now is \$1495, F. O. B., Berkeley—July 1st it will be \$1600. We have purchased 100 Cleveland Tractors, which we can deliver at \$1495, F. O. B., Berkeley. It is a case of first come first served.

We have sold over 200 tractors in Northern California since last fall. A number of large users have given us their second and third orders.

The consumption of fuel is 8½ gallons of distillate and 1½ pints of good grade lubricating oil in nine working hours.



### SPECIFICATIONS IN BRIEF:

Motor: Four-cylinder, 3¼-in. bore by 5½-in. stroke. Protected overhead valves. Horsepower: 12 at drawbar, 20 at belt-pulley. Length: 96 inches. Width: 50 inches. Weight: Less than 3200 pounds. Turning Circle: 12 feet. Track: Length (each side) 50 inches, width 6½ inches. Traction surface: More than 600 square inches. Center to center of tracks: 38 inches. Clearance: 12 inches. Belt Pulley: Diameter 8 inches, face 6 inches. Suspension: Three-point. Heavy duty roller bearings throughout. 1800 pound drawbar pull.

The Cleveland Tractor not only saves time and labor—it does work cheaper and better. It makes possible larger and better crops. It enables you to do your part for the government and make money for yourself.

Does not pack the soil: Works on all kinds of farm land. Pulls a six horse load and moves 50 per cent faster. Operates successfully on 20 to 25 per cent grades.

Present Price  
**\$1495**

F.O.B. Berkeley

July 1st Price  
**\$1600**

### DEALERS:

W. E. Barker, Fortuna.

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White and  
Yellow Dent

Carefully Selected and  
Acclimated Five years  
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Send for Samples and Prices

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## LIME

Pulverized Limestone ..... \$3.35 Per ton  
Ground Limestone.....\$2.50 Per ton

This is the One Element Lacking in  
Most California Soils. Write for Booklet  
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## Ornamental June Planting Calendar for Northern California

Written for California Cultivator By A. R. Gould

**S**OME may still be late in planting out a few of the late summer flowering subjects, and in that case it is essential to complete the planting out of asters, zinnias, cosmos, etc. It is also time to plan for a late fall or early winter display of sweet peas, and the soil should be well prepared by deep trenching with manure. Various climbers will need attention now such as roses, wistaria, etc.; the long shoots of these should be tied in.

### Bulbs

Where it was found absolutely necessary to dig these up from the beds,

and we refer here to daffodils, hyacinths, tulips, etc., they should be stored in a dark place where they will not dry up too quickly as when they are allowed to shrivel they are very little good for future planting. Where they are being naturalized the plot should be given very little water for a time at least as they require a resting period. However, if they are being grown in a flower bed which is required for growing some deep rooting subject which needs considerable water it will not be practical to leave the bulbs in until the next season, but if a good dressing of rich soil is applied, say six inches thick, a few subjects may be grown for the summer

in the same bed and the bulbs will be the better for being undisturbed.

### Lilliums

The varieties such as *L. auratum*, *L. speciosum album* and *rubrum*, etc., will now need stakes, and a sharp watch must be kept for aphids. Use nicotine solution on these. If you wish to have large blooms you should dig in a little quick acting fertilizer or water with liquid manure weekly. They will reward you for extra care.

### Sweet Peas for Late Fall

If you wish to have some choice blooms in October and November, and lasting through Christmas sow the following in well prepared soil as advised above. Early Snowflake, Early Morning Star, Early Spring Maid, Early Song Bird and Early Melody. These are of the Spencer waved type.

### Stocks for Winter Blooming

Sow the following choice varieties

of nice stocks to secure bloom throughout the winter. Beauty of Nice, Crimson King, Almond Blossom, Nice Purple, Mont Blanc and Monte Carlo. The seed of these should be sown in boxes or on a well prepared seed bed in semi-shade.

### Begonias

The tuberous types of these should be planted out this month in their flowering quarters. They thrive best in soil to which leaf soil has been added. They must be grown in partial shade.

### Dahlias

These will need stakes this month, and if too many "eyes" were left on the tuber before planting they will throw too many shoots and may be reduced to three. They will need plenty of water during the growing season.

### Rhododendrons and Azaleas

These should be well supplied with water as if allowed to become at all dry the new growth which they usually make for future flowering will become stunted. Some of the choice hybrids should still be in flower.

### Hydrangeas

These will now be showing flower and need plenty of water. They will also be improved by liquid manure or a quick acting fertilizer dug in.

### Lilacs, etc.

These and other early flowering shrubs should now be pruned back to encourage fresh growth.

### Violas and Pansies

Feed these with liquid manure or dig in a fertilizer which will help these to carry on and increase the size of the blooms.

## June Vegetable Planting in Northern California

Written for California Cultivator

By A. R. Gould

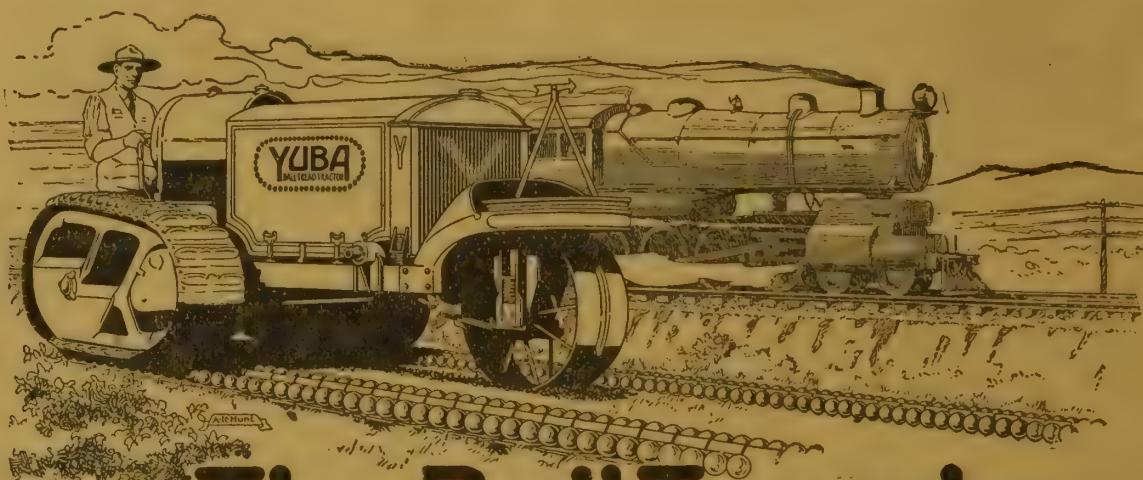
**T**HIS month we must practice "Weeding and Watering" very thoroughly, and although our planting list is very much shorter this month we can make a few more successional sowings and thus add considerably to the bumper crops which we hope to harvest at the end of the season. Our Allies are looking toward California to supply the urgent need for food supplies and as the season advances we must see that we have done our part. Remember the gospel of food production is quite as important as food conservation and it is up to us who form the land army to strengthen our lines and put forth our greatest efforts. Look your war garden over and see what you can still furnish, and get busy now.

### Seed Saving

This year there is likely to be a scarcity of seed, and it will be a wise plan to collect as much seed as possible from the crops which are producing good types and a few of our earlier sown subjects may be gathered in. We refer to peas, broad beans and radish. Others will produce seed pods no doubt later on and it will be as well to allow a few of the best types to run to seed. Care should be taken to see that seed is only secured from the most vigorous types and that they are absolutely free from disease. Make a selection of a few of the best now and mark them out for seed production.

### Beets

For fall and winter use sow Improved Blood Turnip and Detroit Dark



## The Ball Tread

The weight of the machine rests on the polished steel balls—they roll easily—requiring little power—leaving the most of the energy generated by the engine for hauling the load.

Solid, well-built road-beds, with heavy steel rails, enable the modern railroad engines to haul freight trains of more cars, and heavier loads than ever before.

It's the same with the Ball Tread Tractor gliding on its steel balls—big loads are easy to haul.

Every part of the Yuba is accurately machined, and made from the quality of steel best suited for the hard usage; for plowing deep, turning up new, fresh soil to give greater fertility; for working day and night, in all kinds of weather, in all kinds of soil; for economy in labor and time.



## Yuba Manufacturing Company

Department B

433 California Street

San Francisco

Factories at  
Marysville  
and Benicia

Model 12-20  
Model 20-35  
Model 40-70



Red. A fairly good supply of water is necessary and frequent cultivation between the rows. Never crowd them in the row. They will need thinning four to six inches apart in the rows to develop fine roots.

There is yet time to make another sowing of that excellent spinach, Sea Kale beet, of great use for table or poultry. The root is of no value but the large broad leaves can be cut again and again.

Beans

Make successional sowing of Kentucky Wonder, Stringless green pod and Golden Wax. You might also sow the Davis White Wax for a good shelled bean for winter use. If you have not sown the small white Tepary yet get some of these in at once; it is gaining in favor every season. Cultivate frequently through the rows of existing crops which should be now making sturdy plants. Keep a lookout for aphids which may be troubling the young tender tips.

Corn

Make a further sowing of Country Gentleman and Golden Bantam. Keep this crop well cultivated. Conservation of moisture is absolutely essential. Where irrigation can be practiced you may still extend your field crop planting.

Turnips

Sow Early Snowball and White Egg as thinly as possible and keep well watered. As the young seedlings develop a dusting of soot will prove beneficial.

Leeks and Celery

The seedlings of these should have been planted ere this in trenches and will now need careful watering and cultivating. Keep a lookout for slugs



Thorough Tilling Saves Moisture

and collect these up at night when they get busy.

Potatoes

These should be thoroughly well cultivated and the soil drawn up in rows toward the plants, thus supporting the plant and protecting the tuber. Watch for any signs of diseased plants, as sometimes a fungus develops and any so attacked should be removed from the row. Where enough water is available on a small plot there is still a chance to plant a main crop variety which will prove useful for late winter use.

Squash, Musk and Watermelons

Supply these with plenty of water and keep the hoe busy. The success of the crop will depend on the start they get now.

Tomatoes

Where the training method is to be adopted, stakes should be given the plants for support and if one single stem only is required all axil shoots must be removed by pinching out, however three main stems may be run up if desired and three bunches of fruit allowed to each stem. Splendid results are however also obtained by allowing the plants to ramble, if good cultivation is given at the start. Black



Handy Tool for War Garden

fly is showing up in some districts and you should spray with Black Leaf 40.

Parsnip

This vegetable is noted for its high food value and will also prove a very fine winter crop to put in storage. Seed may now be sown of Hollow Crown variety in fairly sandy soil in rows 18 inches apart. One quarter of

an ounce will sow a 100 foot row.

Onions

Keep the hoe or cultivator moving throughout this plot and see that they do not suffer through lack of moisture. It will also be helpful if a good dressing of soot or wood ashes is applied.

Carrots

Keep up the supply of these by sowing towards the end of the month Ox-

heart and Danvers Half-long. These are easily stored for winter use and will keep for many months. Sow the seed thinly and do not attempt to grow these on impoverished soil.

Cauliflower

Sow the variety known as Early Snowball for the early crop and to succeed this later grow California Wonder. A small seed bed should be made up in a semi-shaded position and the seeds sown in rows or broadcast in well prepared soil. Begin to get your plot for this crop into shape this month and have it well trenched with manure.

Strawberries

These will need considerable irrigation.

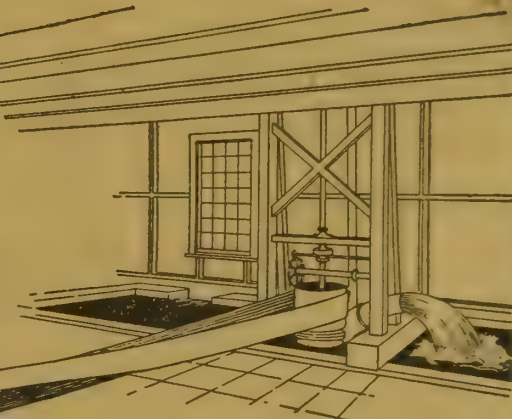
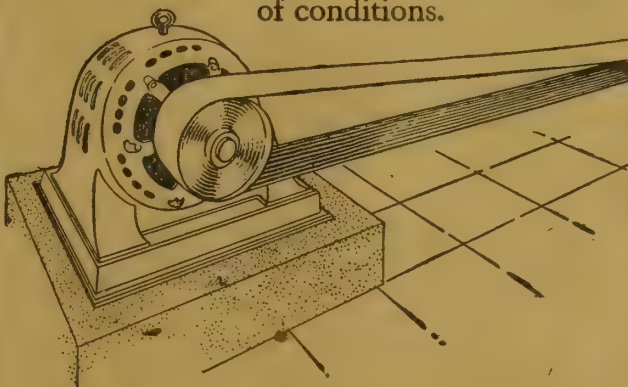
MORE CARE IN HANDLING CANTALOUPE

The United States bureau of markets has just issued a publication, "More Care is Needed in Handling Western Cantaloupes," Market Document 9, containing report of investigations into losses caused by improper handling and directions for securing better results. The summary of the bulletin gives the following points:

The annual production of cantal-

# Here is a Test Special Belt

—run under ideal conditions (all belts should be covered.) The sun, rain and weather shorten the life of any belt—though **Test Special** last longer than any other belt under the severest of conditions.



Quarter turn centrifugal pump-driving is easy work for

## Test Special Belts

They run 3,500 feet per minute—many run 5,000 feet per minute—and do it for years.

# —Tell us your belt troubles

In these advertisements we are telling you that we are belt engineers—that all you have to do is to tell us your belt troubles, and we'll help you solve them—*free, of course*—just write us as fully as possible what is wrong.

Send a rough drawing to show location and how operated. We'll reply as fully and completely as possible, giving advice as to how to adjust and arrange your belt so that it will do your work.

Try it—*write us*—put it up to us to make good on this offer—*do it as soon as you have read this.*

### Fill Out This Coupon—Mail It TODAY

New York Belting and Packing Co.  
519 Mission St., San Francisco —Dep't 6-C  
Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

..... Station.

Horse Power	Diameter in Inches
{ Elec. Motor.....	{ Driving Pulley.....
{ Steam Engine.....	{ Driven Pulley.....
{ Gas Engine.....	

#### Kind of Drive

Cross.....  
Straight.....  
Perpendicular.....  
Width of Belt..... Ply.....  
Distance between centers of Pulleys.....  
Rev. per minute of Driving Pulley.....  
Kind of Machinery Driven.....  
My dealer's name.....  
My name.....  
Address.....

A pocket memo, booklet giving speed and power tables will be sent FREE to all who mail this coupon.

**New York Belting and Packing Company**  
519 Mission Street : : : : : San Francisco

Home Office: New York City. Branches in all principal cities



loupes in New Mexico, Arizona, California, Nevada, and Colorado is approximately 4,000,000 standard crates of 45 melons each.

More than ten per cent of these melons reach the consumer so green that they are practically worthless for food.

To insure desirable eating and keeping quality, western cantaloupes for long distance shipment should be picked just before they reach the full-slip stage of maturity.

The carrying and keeping quality of cantaloupes is directly dependent upon the care exercised in harvesting and preparing them for shipment.

Many weaknesses in present commercial practices can be corrected readily, and serious losses from deterioration or spoilage prevented.

The most careful handling of can-

taloupes is as essential in all operations of distribution to dealers and consumers as in preparing the melon for shipment.

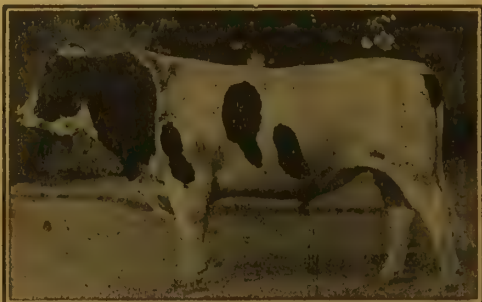
The time which elapses between picking and loading of cantaloupes into iced refrigerator cars determines very largely the amount of overripe and decayed melons delivered at the markets.

After picking, cantaloupes should be loaded as soon as possible into iced refrigerator cars for shipment.

Cantaloupes should not be wrapped. Wrapped cantaloupes do not refrigerate as well in transit nor do they reach consumers in as good condition as do cantaloupes not wrapped.

This bulletin may be secured free by request to United States Department of Agriculture, Bureau of Markets, Washington, D. C.

## Prince Alcartra Korndyke



IS a 40 pound bull, but that doesn't begin to tell the story. His sire is Korndyke De Kol's Prince, whose offspring rank with the offspring of any bull that ever lived in combined production and individuality. His dam is the one and only Tilly Alcartra, the cow that made a 40 pound record as an incident, not as a real objective, for she did it after five straight years of yearly test during which she produced a volume of milk and butter unapproached by any other cow of any age or breed. And today at past nine years of age she is making the greatest record for milk and butter of her whole career. We have only a few sons of Prince Alcartra on hand. We know if you could see them and find how moderately we price them that you would want one to head your herd. Come and see us, or write your wants.

**The J. S. Gibson Co.**

Williams

California

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT

Hauser Packing Co.

Los Angeles

### HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

### THE SELF-OILING WINDMILL

has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aeromotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

Write AERMOTOR CO., 2500 Twelfth St., Chicago

For Sale by  
VAN-SHAW-PALMER CO.,  
421 E. Third St., Los Angeles.

### ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the Lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. \$2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse Book 2R Free.

W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

No more farm furloughs will be granted from the army.

### Dutchland Sir

### Pieterje Creamelle

is a name that is becoming firmly entrenched in the story of high producing Holsteins in California.

By a grandson of the great transmitting cow Changeling, and out of a daughter of the former world's record cow Creamelle Vale, he is bred to great production and has already proven his worth with 18 A. R. O. daughters in our herd, records up to over 30 pounds butter in seven days.

We enjoy a steady sale of good bulls to dairymen, many of them coming back for their second and third bull. We believe we can fill your requirements in the bull line. Write us or visit our farm.

**F. STENZEL**

San Lorenzo

California

### HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

### Whittier State School

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### Kero-Oil Engines

Twice the Power at Half the Cost  
Sizes 2 to 30 H.P. — Select Your Own Terms — Direct from Factory prices. Immediate Factory Shipment. Write for big new catalog. "How to Judge Engines" FREE by return mail. Postpaid.

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Write Your  
Own Order  
Save from \$15  
to \$200

## Tractor Service



ANY of our tractor troubles have been eradicated or at least greatly diminished because the manufacturers have used the lessons of the past year or two in eliminating many weaker parts and making readjustments until there is far less need of tractor service than a year ago. But even with a perfect and standardized tractor there is still need of a service which will make possible greater accomplishment and less loss at a critical time because the tractor has not proved 100 per cent efficient. It must be made more efficient, and tractor schools, books on traction engineering and the technical and farm press are uniting to render this service. Also every tractor selling force has capable demonstrators and instructors. The Cultivator hopes to aid in securing efficiency by this department in which we ask our subscribers to tell their troubles and we will give from qualified mechanics helpful suggestions.

### TRACTOR QUERIES

#### Preventing Fire from Tractor

How may the tractor be cared for, that is, kept free from carbon, or can you give me other hint which will help me to make tractor in harvest field safer?—Subscriber, Los Angeles County.

Your motor can be kept free from carbon by using a good grade of lubricating oil and not using excessively. A little kerosene poured in the top of your cylinders, allowing it to soak over night, will also help to dispose of carbon. A good water jet that is fed automatically, feeding from two to three gallons of water in a 4 1/4 by 5 1/4

engine during a period of ten hours operation will keep your motor entirely free from carbon.

Regarding the successful operating of your tractor in the harvest field, in regard to fire, a good screen over your exhaust pipe, of not too fine a mesh, drawn to a cone taper will keep all carbon deposit from being exhausted into the air, which mostly is the cause of fires. Using a water jet and putting water into your manifold with a mixture of distillate will also be a great help. There are also manifolds now on the market showing covering with a water jacket which will keep chaff and straw from lying against the exhaust manifold, which is also the cause of fire. This can be operated without any danger of fire if a little judgment is used in the operation of your motor.

#### Not Jack of all Trades

Will a tractor take the place of a horse in orcharding or diversified farming?—Subscriber.

Presumably not in all cases. We take it every tractor man will admit that ages of training which have been given to horses and man's long association with them has developed a service which no tractor as built at present can hope to render. A grain farmer can use an ordinary type of tractor, doing all of his work in the grain field with one machine, as they can now plow the ground, disk, harrow, pack it or pull the seeder, also the binder or binders, for which there are special hitches built, or can even handle his header with special attachments. There has not yet been a successful tractor of one type that would displace horses in the cultivation of beets, beans or corn, but there are motor cultivators on the ground which will successfully cultivate any of the above crops, but they are not heavy enough to do the plowing and harrowing.

## A Farm Bureau Meeting.



ONE of the strongest features of rural life is the neighborhood and cooperative spirit which prevails, — or should.

The farmer's first questions when selecting a home are: "What is the soil? Is the water right secure? What can I grow that the market will demand?" But later, and before reaching a definite decision: "Who are the people? What are their likes and dislikes as indicated by churches, schools, clubs? What is their attitude toward movements which call for cooperative effort?" These questions which are asked last are the ones which determine the answer, especially if the farmer be one who has a family, and wishes for that family the best advancement.

War conditions have greatly increased the cooperative spirit in all sections of the country, and in none more than Ventura County which has been filled with people with a desire for the best socially and in every other way. The apricot growers have organized in marketing; the bean growers have pooled their interests; farm-

ers of all kinds have united in cooperative insurance; some of the oldest farmers' clubs in the state are still maintained. Hence the ground was prepared for that latest in cooperative effort, the farm bureau.

Amongst the first in the state to organize its quota, more than one-fifth of the farmers was readily secured, and a farm adviser or county agent was appointed. Later the work was discontinued, but only for a short time. At the beginning of the war period, when conserve and produce more become the slogan, the farm bureau, which had continued its active work even in the absence of its adviser, appealed to county and state authorities for a renewal of the work. Prof. E. O. Essig, who years ago was horticultural commissioner of the county and later secretary of the state horticultural commissioner, from which work he was transferred to the department of entomology at the state university, was appointed farm adviser.

The annual meeting of this bureau was held last Saturday at Foster's Park, a beautiful spot of a few hun-



Farm Bureau Officers and Directors

Ventura County has a live farm bureau. Here is a Cultivator photo of officers and directors elected at the annual at Ventura Saturday. From reader's left they are: James D. Culbertson, Aratus Everett, J. N. Thille, Henry H. Neel, Mrs. Henry H. Neel, W. H. Stiles, Walter R. Sexton, J. N. Frocter, G. N. King, County Farm Adviser E. O. Essig, Prof. J. W. Gilmore, Prof. Walter E. Packard.





Ventura County Farm Bureau

Annual barbecue and picnic held at Foster's Park on the Ventura River, June 1.

dred acres some five miles out of the city of Ventura on the banks of the Ventura River. This was the annual meeting, and after the barbecue and picnic lunch officers as named below were elected for the coming year: President, Henry H. Neel; vice president, L. Mills; director home department, Mrs. Henry H. Neel. The directors at large are: A. Everett, J. W. Hitch, J. N. Procter, Wayne Montgomery, A. C. Hardison, Geo. Hume, E. S. Thatcher, Walter Sexton. Other directors are: W. F. Goodyear, Somis; R. E. Harrington, Simi; Thos. McCormick, Camarillo; Henry H. Neel, Ventura; E. W. Gerry, Mound; J. N. Thille, Santa Paula; Clarence Hawley, Saticoy; G. N. King, Bardsdale; J. M. Horton, Fillmore; Rudolph Beck, Oxnard; Geo. Willett, Wheeler Canyon; A. Everett, Moorpark.

This being the annual and special occasion, Prof. J. W. Gilmore of the University of California was present and told several stories and more truths as to soil conditions, especially as influenced by various field crops. One crop in California, which for many years was grown continuously on the same land, is wheat. This continual cropping reduced production, which in turn reduced acreage until instead of producing around 40,000,000 bushels on 2,800,000 acres as the

state did in 1890, we are producing today only about 5,000,000 on 350,000 acres. Prof. Gilmore maintained that no matter what crop, what soil, nor in what part of the world, the continual one crop method could not be followed without loss of productivity. As "the most successful farmer is the one tied to a cow's tail," so the live stock industry and rotation are necessary to highest success.

Prof. Packard, assistant in agricultural extension, also brought a message from the university. Adviser Essig reported as to the number of visits made and other activities of the adviser's office. The board of supervisors of the county has been appealed to to increase the efficiency of the farm bureau by increasing the appropriation for necessary expense to at least \$6000.

The women's work of the Ventura farm bureau is under the direction of Mrs. Henry Neel who gave an outline of the work expected to be taken up by her department which has just been organized. Crop production in war gardens, land army work, canning and drying, and other activities will be engaged in by Ventura County women.

If there is a farm bureau picnic anywhere in reach every farmer's family should be there. There may be a barbecue.

## Butter Problems in Summer

It is essential to have good milk to begin with. If a centrifugal separator is used it is not difficult to obtain cream of good quality. The cream should be cooled to 50 degrees Fahrenheit before being mixed with the cream from previous milkings. When sufficient cream has been gathered for a churning, it should stand about 12 hours in a temperature of 65 to 75 degrees to ripen. The cream should become thicker and assume a glossy appearance. It should be only mildly sour. Cool to churning temperature 52 to 60 degrees Fahrenheit in summer) and hold for two hours before

churning. Too much care cannot be taken to clean churn and utensils and free them from odors. Stop churning when the butter granules are the size of a wheat kernel and drain off the buttermilk. Then thoroughly wash the butter, using water of about the same temperature as the buttermilk.

If the butter becomes too soft, the wash water may be a few degrees below the churning temperature. Use about three-fourths ounce of salt per pound of butter. Work sufficiently to dissolve the salt and remove the water, but guard against overworking which gives the butter a salty texture.

## History Making Jersey Cattle Sale

A New York breeder pushed the price of Jersey cows up another notch when, after a few moments of spirited bidding, he offered \$10,000 for the Jersey cow Oxford's Briar Flower at Edmond Butler's sale of imported Jerseys at Mount Kisco, New York, May 2. The price leader is a daughter of the bull Oxford Majesty, made famous by achievements of his progeny in the show ring and at the milk pail.

The sale ring was the scene of the wildest excitement and the greatest outburst of enthusiasm that ever prevailed at a Jersey gathering. The sale was held on the day following the fiftieth annual meeting of the American Jersey Cattle Club, on which occasion the officers announced that the club had just ended the greatest year in its history in spite of war conditions.

The greatest price ever paid for a Jersey cow previous to the Butler sale was paid at the time that Lady Viola sold at public auction for \$7000 in 1911. The Butler importations, numbering 95 head of Jerseys, were re-

duced somewhat by the sinking of a ship by which 35 animals were lost. Those arriving on this side brought the greatest average price ever obtained at a public auction. Sixty head were sold for \$60,115, an average of over \$1000 per head. There were 19 animals sold at more than \$1000 per head.

### MORE CATTLE GRAZING

On the Trinity National Forest 14,000 head of cattle are grazing this season. This is an increase of 1000 head over the allotment of last season.

### TRUE WILL JUDGE IN HONOLULU

Prof. True of the University Farm at Davis has accepted an invitation to judge livestock at the First Territorial Fair to be held at Honolulu, June 10-15.

A Tehama County rancher has been arrested, charged with selling tubercular stock.

72 page catalog  
mailed upon request

## Waste Nothing

This is no time for "cream slacker" separators or wasteful methods of skimming milk.

With butter-fat at present prices and the Food Administration begging every one to stop waste, "cream slacker" methods of skimming milk must go.

Whether you are trying to get along without any cream separator or using an inferior or partly worn-out machine, you are wasting butter-fat and losing money.

## Get a De Laval and save ALL your cream

Viewed from every standpoint—clean skimming, ample capacity, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

## THE DE LAVAL SEPARATOR COMPANY

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.  
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

61 BEALE STREET, SAN FRANCISCO

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

### Pelandale Holsteins

Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.

J. A. Pelanda, Rt. B, Modesto, Cal.

### Segis Pontiac De Kol Dutch

Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale.

E. E. Freeman, Rt. B, Modesto

### Registered Holsteins

Young sons of Prince Hiske Walker out of A. R. O. dams for sale.

H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.

### HOLMES STOCK FARM

Registered Holsteins of best breeding. Young bulls for sale.

R. L. Holmes, Modesto, Cal.

### White House Holsteins

A well bred proven herd sire for sale. also a few bull calves.

A. M. Bibens, Rt. 1, Box 307, Modesto, Cal.

### Thompson's Registered Holsteins

Young bull calves for sale with yearly record backing.

Luther Thompson, Rt. A, Box 351, Modesto, Cal.



Our Senior Herd Sire is KING KORNDYKE HENGVERELD ORMSBY 7th Five of his sisters sold at public auction for \$23,800, an average of \$4760.

This blood has made some of the world's greatest producers. Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.25 pound daughter of King Hengerveld Aaggie Fayne. Young bulls for sale. No females.

REGISTERED BERKSHIRE BOARS, sons of the \$1500 boar Star Leader, for sale.

Kounias Registered Stock Farms, Modesto, Cal.

## Creamcup Holsteins

Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

When writing advertisers, mention The Cultivator.







him. Tags, bucks, black, and other recognized discount fleeces will be paid for at prices fixed by the government. Bags will be paid for in the same manner.

#### Payments to Growers

Growers shall be entitled to payment on a basis of the date of the arrival of the wool, as shown by the railroad receipt. However, as it would be impossible for obvious reasons to make settlement on each clip on the date of its arrival, in order that the grower may lose nothing by any delay in settlement he shall be entitled to draw interest on the selling price of his wool, less freight, from the date of the wool's arrival until the date of final settlement.

Final returns will be made as promptly as possible in all cases.

#### Commissions

The grower does not pay the commission or compensation for handling wools in the designated distributing centers. This commission or compensation for handling will be added to selling price of the wool and paid by the buyer.

If sold in the original bags the commission or compensation shall be 3 per cent of the selling price. If the wool is graded the commission or compensation shall be three and one-half per cent of the selling price. This commission or compensation includes drayage, storage, and insurance for a period not exceeding on any lot six months after arrival. On any lot remaining unsold in his possession for a longer period than six months the dealer shall be entitled to charge storage and insurance at the market rate, and this additional charge shall be added to the price of the wool.

#### Mills

In order that the government may have full control of the wool situation with a view to conserving, as far as may be necessary, the wool supply for military purposes it is considered necessary to prohibit manufacturers from buying wool except in the designated distributing centers, and then only with the permission and consent of the government, under such regulations as the government may hereafter make.

However, mills located in wool-growing districts not near to the designated centers of distribution, and which are working on government orders, will be given permits through the wool division of the war industries board to buy certain amounts of wool in their immediate neighborhood. In making applications for such permits, the manufacturer applying should state the number of his government order, the amount of goods yet to be delivered against such order, the amount and class of wool required to complete said order. The manufacturer receiving such a permit will be required to report to the wool division of the war industries board all purchases made against permit issued to him.

#### Permits to Dealers

All dealers in approved centers desiring a permit to operate should apply to the wool division of the war industries board, stating their capacity for storing and grading.

All country dealers should apply for a permit to operate by writing to the wool division of the war industries board, giving name and address.

In order to expedite movement of wool, dealers in country districts and distributing centers may operate immediately in accordance with the above regulations, pending application for and granting of permit.—Lewis Penwell, Chief of Wool Division, War Industries Board, Washington, D. C.

## Northern California Notes

Written for California Cultivator By W. S. Guilford

### BIG WHEAT CROP IN SHASTA AND ADJOINING COUNTIES



SOME of the best wheat ever grown in the state will be harvested during the next three or four weeks in Shasta and the other northern counties of California. There is much agricultural activity in all of this rich section.

The Northern California Counties Association is one of the most active and most efficient organizations in the state. Dudley V. Saltzer is the president, Walter H. Chase secretary. The principal office is Redding, but meetings of the board of directors are held each month in a different county. Five counties are included

in the organization, Trinity, Modoc, Lassen, Shasta and Plumas.

With the solid support of such an organization the work of the Shasta County farm adviser, Guy Talbot, is made easy. Pig clubs and pure bred bull calf clubs are among the progressive agricultural things in prospect.

The range cattle interests in these counties produced a large revenue and a large supply of beef and leather for the army. The recent meeting of the Northern California Cattlemen's Association at Redding was attended by President L. A. Nares of the California Cattlemen's Association. President Wm. Judkins, Secretary M. T. Lack and E. A. Null were appointed

to represent the northern association at the conference to be held at Davis June 26 to 27.

State Forester G. M. Homans was also in attendance in the interest of fire protection to the forest ranges, pastures and grain fields. He is doing great work in the organization of fire companies for the protection of local areas.

There are splendid crops on the Anderson irrigation project, and water is now being delivered everywhere. The diversion is made from the Sacramento River through a tunnel that runs under a part of the town of Redding.

### VALUE OF GOOD BLOOD ILLUSTRATED

I have seen many illustrations of the value of good blood in live stock, but none more striking than one recently observed.

With A. H. Culver, a prominent



## How the Armies' need for meat was answered

IN a fighting man's ration, meat is the important item. Twenty ounces of fresh beef, or its equivalent, is called for daily.

To supply the meat needs of an army that was suddenly expanded from 100,000 to 1,500,000 is a tremendous task. Added to the needs of the Allies, it is a staggering one.

The American stockman and the American packer may justly take pride in the way they have met these needs.

During 1917, stockmen sent to market nearly 2,000,000 more cattle than during 1916. Yet at the end of 1917, the Department of Agriculture reports more cattle remaining on American farms than at the beginning of the year. The production of hogs has also been increasing. All of this in spite of high feed prices, and scarcity of labor.

How the packers have done their part is shown by the fact that in one week, Swift & Company was called upon to supply the Allies and the American Armies abroad 24,000,000 pounds of meat and fat—enough to

have fed America's peace-time army for more than six months.

An order of this size means the dressing of 13,000 cattle and 200,000 hogs.

To move the finished products, 800 freight cars were needed. Of these 650 were from the Swift refrigerator fleet.

Three days after the order was received by Swift & Company, shipments began, and the entire amount was rolling seaward within a week.

Since January 1, 1918, over 400 carloads of our products per week have been shipped abroad on war requirements.

The nation's meat supply machinery has stood the test.

Not once has there been a failure on the part of the American farmer or the American packer to supply the government's needs.

On their part, Swift & Company performs their service without governmental guarantee of profit and with a limit of 9% return on capital employed in the Meat Departments, which means about 2 cents on every dollar of sales.

Swift & Company, U.S.A.





Glenn County sheep grower and farmer, I was watching a flock pass down a road at Butte City Ranch. We bought a lot of old ewes last fall and bred some of them to Shropshire rams from our registered flock. The others had been bred to a common lot of rams.

As far as you could see these lambs the Shropshires could be easily recognized. They are blockier, fatter, have more meat over the back and in the leg of mutton. If you could not see their black faces you would know they were far superior to anything else in the flock. They have more bone, stronger legs, and more vigor and vitality.

Since mother has taken to knitting for soldiers the titular head of the house says that many of his socks celebrate feetless day.

## Conserve Stock Feed

Anticipating a critical shortage of both cultivated and natural feedstuffs for stock cattle in California after August 1, the federal live stock commission of the United States food administration for California has issued an appeal to farmers to conserve straw of all kinds which can be used as a base for cattle feed.

Prof. Gordon True, chairman of the federal livestock commission of the United States food administration for California, issued the following statement:

"The range cattle situation for the year 1918 is critical.

"The rains of the past season came too late to put the ranges of the state into anything like normal condition. The result is an unprecedented shortage of cattle feed.

"It is too late to extend irrigated crop areas for this year. The situation must be met by saving where there has formerly been waste. This means that every pound of straw from beans and all the grains must be most religiously stored for feed.

"The food administration is taking the stand that the burning of any straw will be regarded as wasteful practice and the man who does it may expect to be prosecuted under the federal law.

"On account of the needs of the cattlemen the citrus and deciduous fruit growers are urged for this year to abstain from the use of bean straw and alfalfa as fertilizer or mulch. The cattlemen on the other hand are as strongly urged to conserve every pos-

sible pound of manure for the use of the fruit growers in lieu of the straw usually taken by them.

"The destruction or waste of anything that can be used as a stock feed or as a fertilizer at this time is a national calamity."

### NEW DAIRY COW CLASS AT THE STATE FAIR

At the request of the California Jersey Breeders' Association, the board of directors of the State Agricultural Society has consented to add another class to the regular classification of the dairy breeds in the premium list for the coming state fair, August 31 to September 8. This class will be for five cows in milk, with first, second and third money.

It is the intention of Jersey breeders to offer a handsome cup in connection with this class in the Jersey classification, this cup to be awarded annually to the first prize winner, and the breeder winning it the greatest number of times in five years to own it permanently. The name of the winner each year will be engraved on the cup, with the date of his winning it.

The state fair management has also assured the Jersey breeders in compliance with their request that they will make every effort to provide some kind of living accommodations for the men in charge of stock at the fair this year. This is a much needed improvement that will be greatly appreciated by the live stock exhibitors.

### GOVERNMENT SETS WHEAT FEED MILL PRICES

Decided reduction in prices for wheat mill feeds have been ordered by the United States food administration, which calls attention to the fact that the price of mill feeds is a decided factor in the ultimate cost of many feed commodities. Although it has brought about a general downward movement in mill feed prices, the food administration points out that the amount of wheat mill feeds to be obtained is small in proportion to the demand and that the most practicable means of reducing feeding costs lies in a more general use of the coarse grain by-products which may now be had in abundance. Hominy feeds have lately declined about \$25 a ton, and rye and barley feeds have fallen in proportion.

#### Based on Wheat Price

Under the new schedule prices are still based on the price of wheat. The maximum bulk price of bran bears the same relation to wheat as formerly—38 per cent of the average cost to the mill. The price of flour middlings, which was \$9.00 per ton above the price of bran, has been reduced to a differential of \$2.00. Red dog, which bore a differential of \$15, has also been reduced to \$2.00.

Mixed wheat feed prices, which were \$4.00 per ton above bran, must now be no more than \$1.25 higher. Shorts, standard middlings, gray shorts, and gray middlings now bear a bulk price that must not exceed bran by more than \$2.00 per ton.

### HOLSTEIN AWARD FOR CALIFORNIA

Two of California's fairs, the state fair at Sacramento and the liberty fair at Los Angeles, have been honored by the following awards from the Holstein-Friesian Association of America.

#### State Fair

Twenty-five per cent cash to be paid on the general classification. In the three-day butter fat test, in each class, a silver cup to the first prize winner, if a registered Holstein.

#### Liberty Fair

Twenty-five per cent cash to be paid in the general classification.

# The Opportunity of a Lifetime

It is not likely that within the span of life of most of us will so large a herd of registered Jerseys of such outstanding quality as that of the N. H. Locke Company herd, be dispersed again at public auction in California, and their sale is indeed the opportunity of a lifetime.

The herd has been a member of a cow testing association for a long time and only the best producers have been retained as workers and breeding females, with the result that this herd is admittedly one of the highest producing large herds in the country, and it has been handled strictly under ordinary dairy conditions.

The records of the cows will be shown in the catalog, now in preparation, and everyone who wants some real producers should study it carefully.

Every cow in salable condition in the herd will be sold, including all the famous show winners and their sons and daughters, from Empress Lass right down to winners in the calf classes, the entire sale numbering

**85 Registered Jersey Cows in Milk**

**20 Registered Jersey Bulls of Service Age**

**25 Registered Jersey Heifers and Young Bulls**

The great herd sires King's Valet, Borello's Golden Laddie, Grace's Fox of Venadera, and Norma's Gertie Son of L, will be in the sale which will be held on the farm of

# N. H. LOCKE CO.

Lockeford, California

## Thursday, June 27, 1918

THIRTY-FIVE DAUGHTERS OF KING'S VALET, are without a single exception the greatest group of daughters of a Jersey sire ever sold in one sale in the west. Twenty-eight of them are now in milk and making money every day. ALL OF THE DAUGHTERS OF BORELLO'S GOLDEN LADDIE will be sold, and most of them are in milk. They are a wonderfully good lot with great, deep bodies, good udders and teats, strong rugged individuals and regular dairy workers.

FOURTEEN DAUGHTERS OF VALET'S KING OF L are a choice group of young cows, most of them with first calf, and they are GOOD.

THREE DAUGHTERS OF GERTIE'S LAD are top notchers, and nothing more need be said about them to those who know Jerseys.

And do not overlook the fact that this sale will be conducted under the regular sales contract of this company, every animal positively guaranteed to be a breeder, every animal pledged to absolute sale, every animal tuberculin tested and SOLD SUBJECT TO TUBERCULIN RETEST BY THE BUYERS.

MAKE YOUR PLANS NOW to be at the sale early in the morning, for the large number of cattle to sell makes it imperative for us to begin the sale promptly at 9 o'clock in the morning, Thursday, June 27.

There are limited hotel accommodations at Lockeford, but to be safe it is well for buyers from a distance to make hotel arrangements at Lodi which is only 7½ miles from Lockeford on the main line of the Southern Pacific, and a jitney service will be arranged between there and the farm.

Catalog of the sale will be ready for distribution about June 20. Make your request for one as early as possible as inquiries already on hand indicate that there will be a very large number to mail out.

### MANAGEMENT

## California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., Pres.

C. L. Hughes, Sales Manager

Sacramento, California

**LONE STAR**  
Registered Herd



**HEREFORDS**  
Unregistered Herds

800 Cows and 50 Bulls Best of Breeding Show Winners

4000 Head Both Sexes Same Breeding as Registered Herd

All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.

Scharbaur & Eldson, Midland, Texas

Elevation 3000 Feet



## GRAIN FOR SKIM MILK CALVES

In substituting skim milk for whole milk in calf feeding, the change should be made gradually, and at about the same time a small quantity of grain can be placed before the calf to offset the loss of nutriment contained in the butter fat of whole milk. The substitution of skim for whole milk may be started after the calf is three weeks old, depending upon the size and vigor of the animal, and the transition period extended over a week or two.

For the average farmer or dairyman, perhaps the most convenient grain to feed is ground corn, and this serves as a very good supplement to the skim milk, says M. H. Fohrman of the University of Missouri college of agriculture. At first a small handful is all the calf will take, but the amount can be increased gradually. Corn is palatable and overfeeding should be avoided.

While corn is palatable, and an excellent feed for supplying energy, it is deficient in protein and lacks growth producing materials. Because protein is so essential to growth of young animals, it is well, when the calf grows large enough to eat a pound or more of grain per day, to supplement the corn with other grains and alfalfa hay.

A good grain mixture to feed to growing calves is made up of 500 pounds ground corn, 300 pounds ground or whole oats, and 100 pounds linseed oil meal. Where oats are high in price or off the market, the amount can be reduced or oats may be left out entirely. However, they make this mixture more bulky and also add to its palatability.

To assist in the development of the digestive organs, the young animals should have some hay. Nothing fills this requirement quite so well as alfalfa hay, which is not only palatable, but high in protein and a carrier of growth essentials. Caution is again required in feeding this hay as calves may eat too much.

## USE PUBLIC WEIGHMASTERS

State Superintendent of Weights and Measures Johnson urges that all farmers making shipments secure the services of public weigh masters, either at point of origin or at point of destination of shipment.

It is stated that through use of these public weigh masters the farmer will avoid any question of fraud in connection with his shipments.

Johnson recommends that where there is a public weighmaster at point of origin the sale of farm products should be made subject to point of origin weight. If, however, shipment is subject to point of destination weight, the farmer may in all instances rely upon such weights being accurate. Under all circumstances public weighmaster's certificate of weight should accompany shipment and such record of weight should form the basis of settlement.

## SWINE MORTALITY FROM DISEASE

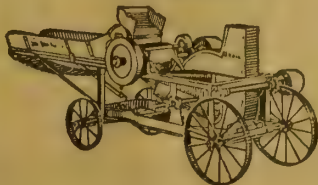
The death rate in swine from all diseases for the year ending March, 1918, announced by the United States department of agriculture as 42.1 per 1000, is the lowest in 35 years, according to the records kept during that period.

This unprecedentedly low rate of mortality presents a great contrast with those of earlier periods, particularly with the losses of 133.8 per 1000 in 1887, 144 per 1000 in 1897, and 118.9 per 1000 in 1914, years

marked by severe outbreaks of hog cholera. This is even a remarkable reduction from the normal low rate of losses which has remained slightly above 50 per 1000 when the disease was least prevalent.

The Bolsheviks are now eating bread made of straw. All they need now is to learn how to bray and the transformation will be complete. — Macon Daily Telegraph.

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The same Acme Cutter that fills your silo can be used to your profit at all seasons of the year in cutting dry feed and making alfalfa meal.

A great many dairymen and stockmen are saving an average of \$4.00 per ton running their alfalfa through an Acme Cutter.

Buy your Acme Cutter now for dry feed cutting—have it on hand when it is time to fill the silo.

Built in seven sizes. Catalog and sample of alfalfa meal sent on request.

**De Laval Dairy Supply Co.**  
61 Beale St., San Francisco

# Cushion Drive Takes the Shock

## -- adds long life to This Cutter

Anyone who has seen the corn "shooting" into a silo-filler or heard the crash on the gears as the loaded carrier is started, stopped or reversed at full speed, knows what this Cushion of coil springs will do! It absorbs the shocks of operation, prevents breakage of parts, and cushions the machine against undue wear and tear. This is one of the exclusive features of

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FOR DAD"

## Safe Silage Cutters

Another great Money-Maker idea is the patented Safety Yoke. This makes it impossible for the operator to get his hands in the feeding rolls without reversing the machine and throwing himself out. After investigating all Cutters, we selected the Money-Maker as best fitted to the needs of the Pacific Coast. Advancing prices, shortage of materials and freight delays make this a year when it is wise to order early.

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Money-Maker Hay Balers bring big profits! You ought to have one this year. Check Coupon for FREE Baler Catalog.

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# 100 Registered Holstein Cows

## 25 Registered Holstein Heifers and Bulls

will be sold at Public Auction to the highest bidder for

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Woodland, California

to be held at State Fair Grounds

Sacramento, Thursday, July 11, 1918

The cattle in this sale will offer an unique and most unusual opportunity to secure a large number of wonderfully well bred and high record females in calf to sires who are making Holstein history today. Just consider this partial list of the offering:  
THREE 30 POUND COWS with records up to over 33 pounds.

THREE COWS with yearly records above 1000 pounds butter in one year.

FOUR DAUGHTERS OF IGNARO DE KOL with yearly records up to over 900 pounds butter.

FOUR DAUGHTERS OF DE KOL BURKE, all with good records, one of them a 32 pound four year old.

FOUR DAUGHTERS OF PRINCE GELSCHKE WALKER, including Miss Gelschke Walker Korndyke, former state record junior two year old.

THREE DAUGHTERS OF SEGIS PONTIAC DE KOL BURKE, including a 19 pound junior two year old and a 20 pound first calf junior three year old.

TWO 29 POUND COWS.

TWO 28 POUND COWS.

THIRTY-EIGHT YEARLY RECORD COWS with records up to over 1000 pounds butter.

TWENTY-FIVE COWS bred to King Mead of Riverside.

TWENTY COWS bred to Prince Gelschke Walker.

Among the great cows to be sold are such famous individuals and producers as Pet Salambo of Riverside, Luit Burke, Pauline Creamelle Mercedes, Leda Gerben Alcartra 2nd, Hartog Creamelle De Kol, Susie De Kol Canary Mercedes Burke, Laura Netherland Gerben 2nd, Pearl Beets 2nd, Lady Dione Walker, Lady Pontiac Mead, Miss Blaney Pondyke.

There will be about 15 fresh cows in the sale, and a very large number are five and six months along in calf. The entire 100 cows will be bred, most of them have been in calf several months now, and they are bred principally to King Mead of Riverside, Prince Gelschke Walker, and King Morco Alcartra. The balance are bred to Sir Aaggie De Kol Acme and King Korndyke Pontiac 20th.

Catalog now in preparation. Write for one.

## MANAGEMENT

## California Breeders Sales and Pedigree Company

J. M. Henderson Jr., Pres.

C. L. Hughes, Sales Manager

Sacramento, California



## Cutter's Refined Germ-Free Anti-Hog Cholera Serum

*Produced in the Most  
Up-to-date and Best  
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in the World.*

Does away with the risks that necessarily attend the use of a serum that is not germ-free.

It is 20% more efficient, measure for measure, than the old type, "bloody" serum, is much more quickly absorbed, does not discolor the flesh at point of injection, and carries no liability of producing abscesses.

80 c.c. of Cutter's Refined Germ Free Serum is just as efficient as 100 c.c. of the best old type "bloody" serum.

But we make the old type serum, and do the job so well that though we have sold several million c.c. since we started production in 1917, there has been not even one complaint of failure to protect, or of bad effects following its use.

So, whether you use the old or the new kind, insist on "Cutter's," for in either case you will be getting the best that can possibly be produced.

Remember, a serum may be "clarified," or "clean," and still not be germ free. Such a serum is almost as dangerous as a "bloody" serum. Cutter's Refined Serum is not only clear but it is Germ Free.

Write for our two new booklets, "Hog Cholera Prevention," and "Special and Detailed Information Concerning Hog Cholera Immunization." From the latter you will learn what constitutes good work and why a competent veterinarian should be employed.

### Prices.

Cutter's Refined, Germ-Free, Anti-Hog Cholera Serum is 2½ cents per c.c.

Cutter's Regular, or "old type" Serum, is 1½ cents per c.c.

Cutter's Hog Cholera Virus, for use with either type of serum, is supplied at 1½ cents per c.c. It is dependable.

We prepay shipping charges.

Let your veterinarian order for you and encourage him to be liberal in estimating the amount of serum to use; safety lies in giving more than may be needed rather than trying to figure too fine.

Should he be prejudiced in favor of some other serum, there is a reason that concerns him but not you, except insofar as it should make you more insistent that Cutter's Serum be used. In such case do your own ordering direct from us. You will get "Cutter's" promptly, prepaid.

The Cutter Laboratory, Berkeley, Calif.  
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"The Laboratory That Knows How"

**Brighton Farm Herds**  
Registered Shorthorns  
and  
Berkshires—Both Sexes  
**H. L. & E. H. Murphy**  
Perkins, Cal.

**The Papec Pneumatic**  
Ensilage Cutter Beats Them All  
If you have the best silo it is the Simplex—an all one piece stave silo.  
For particulars write  
**Santa Fe Lumber Co.**  
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## Care of Brood Sow

By William Hislop



THE brood sow is the foundation of our future pork supply. Her importance is not appreciated until we stop to consider that all the future porkers produced on the farm must be under her care for almost six months of the year. From the time of breeding to the time of farrowing there are 114 days. From birth to weaning there are from 42 to 60 days.

The essential points of brood sow management are as follows:

Provide suitable food, but do not overfeed.

Keep the sow growing thriftily but do not fatten.

Devise schemes to make the sow take exercise.

Provide a warm, dry, well bedded, well ventilated and sun lit house.

Feed and exercise so as to avoid constipation.

Avoid radical changes in the rations.

Kill off lice with crude oil and drive out worms.

Practice gentleness at all times.

You can not afford to neglect any one of these points. Lice, worms, constipation, and no exercise will cause much trouble before, during, and after farrowing, if not given attention and remedied. Insist that the sow take plenty of exercise. Shut her from the house in the middle of the day, rather than have her huddle up and snooze peaceably. Feed her on that side of the yard or field opposite the sleeping house. Provide hay in racks, the eating of which compels her to take exercise. If the proper kind of feed and exercise do not keep her bowels in good order, give her, in slop, one ounce of epsom salts per 100 pounds of live weight. For worms, give six grains of Santonin and four grains of calomel per 100 pounds live weight after 18 hours off feed. Give it in a thin short slop. A little crude oil rubbed on her back will kill all the lice and nits that cause so much uneasiness.

### Before Farrowing

For 60 days before farrowing the sow should get from one-half to three-fourths more grain than she received during the winter months, because nine-tenths of the weight of the unborn young is deposited during that time. However, do not overload the sow with fat, for the very fat sow is apt to be clumsy with her pigs, and sometimes her pigs are few in number and lacking in strength and vigor. On the other hand, the very thin sow will either not do justice to her pigs, or will become a wreck herself during the time she is nursing her litter.

### Ration

1. Fifty pounds ground oats, 50 pounds middlings, alfalfa or clover hay in rack; or

2. Seventy-five pounds barley meal, 10 pounds tankage, 15 pounds chopped alfalfa hay; or

3. Forty-five pounds ground oats, 45 pounds barley meal, 10 pounds tankage, alfalfa or clover hay in rack.

In cold weather, when fed out of doors, very little water should be used in mixing the feed. It will be better to furnish water separately. Feed a few rutabagas or carrots in addition to above rations.

A record should be kept of the date of service of the sow so that the date of farrowing will be known in ad-

vance. A week or ten days before farrowing, the sow should be placed in the farrowing pen so as to become accustomed to her surroundings before the pigs are born. In the farrowing pen there should be a rail set eight inches from the floor and eight inches from the wall, to prevent the sow from lying on her pigs. Use only a small amount of bedding, preferably cut straw.

### At Farrowing

It pays to keep the sow quiet. If the sow is restless, place the pigs in a well warmed basket until all are born. Place the pigs at a teat to suck as soon after as possible. Hogs never fail to respond to good care. Good treatment always means contentment, with its corresponding profits.

### After Farrowing

For a few hours after farrowing give the sow nothing but a drink of water that has been warmed to remove the chill. After 18 to 24 hours, give her a warm feed of thin shorts slop. During the next three days exercise great care not to overfeed. Make the slop a little thicker each day. After that gradually increase the feed, taking ten days to reach full feed of either of the following:

### Rations for Nursing Sows

1. Thirty pounds barley, 30 pounds oats, 20 pounds middlings, 12 pounds bran, eight pounds tankage.

2. Fifty pounds barley, 20 pounds shorts, 15 pounds bran, ten pounds oil meal, five pounds tankage.

3. Fifty pounds ground oats, 50 pounds wheat middlings soaked between feeds. If sweet skim milk can be added to the mixture, it is almost ideal.

If possible, provide roots and green feed; they keep the sow healthy. Encourage pigs to eat grain after they are three weeks old, and build a creep for them to feed along.

Castrate boar pigs one week before weaning. After weaning cut down feed of sow, to check milk flow. Feed sow dry oats for a few days after weaning. If her udder gets full turn her in with pigs once a day for a few days.

### Ration for Pigs After Weaning

1. Sixty pounds barley meal, 32 pounds shorts, eight pounds tankage; or

2. Seventy-seven pounds shorts, 23 pounds skim milk.

Give them rape, rye, clover or alfalfa pasture; and market from 175 to 200 pounds, provided they have the finish and quality that the butcher wants.

### EAT COTTAGE CHEESE INSTEAD OF MEAT

Cottage cheese should be eaten in generous quantities, not as a relish, but as a food. It is a satisfactory substitute, pound for pound, for lean meat and for eggs, if the iron that it lacks is provided elsewhere in the meal in the form of salad, pot greens, vegetables, whole cereal breads, or breakfast foods. The consumer who uses cottage cheese instead of meat performs a war service. In any meal in which cottage cheese is used, therefore, it should take the place of the more expensive meat or eggs. Circular 109, Office of the Secretary, United States Department of Agriculture, Washington, D. C., offers helpful suggestions on ways of serving cottage cheese.

## TAGUS Duroc Jerseys

Home of California  
Defender, World's  
Champion Boar.

**Special offer:**  
**\$100 each for his  
Sons**

(Swine Dept.)

**Pacific States Corp.**

**TULARE, CAL.**

H. C. MERRITT, Jr., Manager



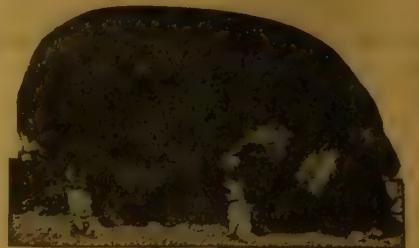
Pure and Cross-Bred Rambouillet Range  
Sheep. Also Breed Hampshires.

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### Large Type Poland Chinas



**W. H. Browning**  
Woodland, Yolo County, Calif.

### Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count  
Glory 126982, Grand Champion at  
the California State Fair, 1916.  
Berkshire herd won Premier Ex-  
hibitor's banner at P. P. I. E.

**513 Hearst Bldg., San Francisco**  
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## SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals.

Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

**California Breeders Sales and  
Pedigree Company**

C. L. Hughes, Sales Mgr.

**Sacramento - - - - - Cal.**

### Prize Winning Berkshires

Two High Class Jr. Boars, choice  
\$65.00. Six Fall Boars, choice \$50.00.

Sired by Ames Rival.

**F. P. Hall**

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Expert Live Stock Auctioneers  
Pure Bred Stock Sales a Specialty  
Sales conducted in all parts of California  
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Years' Experience.

**BEN. A. RHOADES, Auctioneer**  
**1501-3-5 So. Main St., Los Angeles, Cal.**

When Writing Advertisers, Mention The Cultivator.



## Field Notes from the Live Stock Men

"Food will win the war," and in the first line trenches of the battle of producing the food that is going on in the country are found Holstein cows. Steadily they are increasing their already enormous capabilities to produce milk and butter fat in vast quantities. The latest world's champion of the Black and White breed is Superba Palmyra 314141 (twin), who deserves a medal for breaking the record for butter fat production in the junior three year old class. She freshened at the age of three years, five days, and in seven consecutive days produced 655.1 pounds of milk yielding 38.35 pounds of butter. Superba Palmyra's sire is King Segis Pontiac Columbo 105152; her dam is Bloomingdale Hengerveld Palmyra 98725. She was bred and is now owned by Oliver Cabana, Jr., Elma Center, New York.

Cornell University has one of the greatest cows the Holstein breed boasts. She is named Glista Ernestine and was bred and developed by the university. In seven days this remarkable cow made 35.96 pounds of butter from 823 pounds of milk and for 30 days made 149.86 pounds of butter from 3285.9 pounds of milk. This record is most remarkable when it is considered she made this record immediately after the completion of the yearly test of 1042.5 pounds of butter from over 23,000 pounds of milk. Freshening as a four year old, Glista Ernestine made 30.51 pounds of butter, and for each of her four lactation periods since that date she has crossed the 30 pound mark, and each time has increased her record considerably.

The Jack London Ranch of Sonoma County recently sold six Shorthorns to the Rogue River Valley Canal Company, Oregon. Lady Sunshine, shown at the San Francisco Land Show, was one of the animals, and the consignment included the prize bull, Chardon, and the heifer, Wildeye Princess, first prize at the land show.

A consignment of 200 head cattle, owned by U. B. "Butte" Tyler, and 75 head from Ramsay & King, were shipped from Red Bluff last week.

A Red Cross auction sale will be held at Davis at the time of the beef cattlemen's conference June 27-29. The calf selected is to be called Red Cross Calf and is the great grandson of the Shorthorn bull Whithall Sultan, one of the most noted animals of the breed. He was donated to the California Cattlemen's Association for the sale by Butte City Ranch of Glenn County, of which W. B. Dwyer and W. S. Guilford are the proprietors. He is sired by Victor Stamford.

The La Conner Flats Stock Farm Dispersal Sale of registered Holsteins, owned by J. H. Hulbert and conducted on his farm at Mount Vernon, Washington, May 25, was one of the most successful sales ever held in the Northwest. Out of a total of 81 animals sold 58 head were young things including bred and unbred heifers, heifer and bull calves, and quite a number of the cows were over 11 years old and some of them with lost quarters. The star of the sale proved to be the great world's record heifer Ormsby Segis Marie, who fetched the highest price ever paid for a cow on the Pacific Coast, going to Toyon Farm Association, San Jose, for \$12,500. She is one of the outstanding young matrons of the breed and Toyon Farm Association is to be compli-


mented upon their success in bringing her to California. The next highest price of the sale was realized on Lannoner Pontiac Segis, the young son of Ormsby Segis Marie, who goes to head the registered herd owned by Youngquist Brothers, Mount Vernon, Washington. A feature of the sale was the fact that outside of the animals that came to California practically the entire herd went into the hands of dairymen who are just starting pure bred herds, not a few of them right in Skagit County. One of the heaviest buyers was Elmer Axelsson, Mount Vernon, who secured a beautiful string of heifers including a 26 pound three year old and some two year olds with good records. J. P. Hayton, Mount Vernon bought a number of the best of the younger heifers and made unusually keen selections. Toyon Farm Association, San Jose, were contenders for the tops throughout the entire sale and could not be stopped on the animals they really wanted. Besides Ormsby Segis Marie, they bought the two times 30 pound cow Ferndale Countess De Kol and her two daughters, the 23 pound cow Albina De Kol Hartog and her three daughters, securing all of the top females from Mr. Hulbert's show herd that won throughout the Northwest last year. J. E. Peck of Imperial County, was another frequent bidder on the good ones and he was fortunate in securing six choice heifers. At the close of the sale a bull donated by Mr. Hulbert was sold for the benefit of the Red Cross and netted just over \$700. The sale was conducted by California Breeders' Sales and Pedigree Company, Sacramento, with C. L. Hughes in the box, Col. Ben A. Rhoades, Los Angeles, on the block, and Col. J. W. Hughes, Oregon and Col. Harry C. Cranke, Idaho, in the ring. The 81 head sold for a total of \$37,085 averaging as follows: 23 cows sold for \$20,675 average \$899; 36 heifers sold for \$11,680 average \$324; seven heifer calves sold for \$1375 average \$196; 12 bull calves and one yearling sold for \$3015 average \$232.

Toyon Farm Association, San Jose, secured the services of Charles Mac Donald to take charge of their breeding farm. Mr. Mac Donald has been in charge of J. H. Hulbert's La Conner Flats Stock Farm, Mount Vernon, Washington, and it was under his care that Ormsby Segis Marie made her world's record. With his successful experience and a good herd to develop at Toyon Mr. Mac Donald is quite sure to be heard from later on.

H. E. Cornwell, Modesto, recently shipped a fine registered Holstein bull by express to Ivy Condrion, Coos County, Oregon. This young fellow, De Kol Ciruela, is out of Abbie De Kol of East Bank 2nd, the great cow that won third place in California Dairy Cow Competition with a production of 656.61 pounds butter fat in ten months. She has an official record of 26.50 pounds butter in seven days, and her record made in the competition was semi-official.

Grant A. Brown, El Monte, has completed two good Register of Merit records on registered Jersey females that he bought in the C. G. McFarland sale at Tulare last year. Jennie of Willowwood, a five year old, made Class AA record of 8620.4 pounds milk and 493.98 pounds 85 per cent butter. The junior two year old Lot-

Continued on Page 707



PURE BRED

REGISTERED HOLSTEIN

### Prince Gelsche Walker Korndyke

shown above, is a money maker right today for every man who is fortunate enough to secure one of his good young sons.

At the moderate prices at which we sell them, there is margin for a very substantial profit in the increased value that is sure to come just as soon as his daughters begin to go on official test, which will be within the next few months.

Remember that we are not selling any daughters of Prince Gelsche Walker Korndyke. We are developing what we think is a really high class herd, and we have not been able to find any females that we judge are superior to the daughters of this great sire as foundation females.

Why not take our tip and buy one of his young sons now, and join the ranks of the many dairymen who will benefit through our official test work? Remember that we extend liberal terms and sell at moderate prices.


### King Korndyke Pontiac

is shown below, and he is being bred to practically all of the daughters of Prince Gelsche Walker Korndyke.

### JANE GARDEN FARM

SACRAMENTO - CALIF.

FRED W. KIESEL PROP'R. C.W. YOUNG Supt.



## PRINCE RIVERSIDE WALKER

represents about the best combination of Walker-Mead breeding that we know of, and on top of the wonderful records made on both sides of his family, including several world's records, there is a big future ahead for the large number of his sisters and other near female relatives yet to be tested, and who are about to add further honors to already well proven families.



We have only a few bull calves by Prince Riverside Walker to offer. Dairymen who know take them away from us long before they reach service age. You might find one here that would just suit you. Give us a call or write your needs.

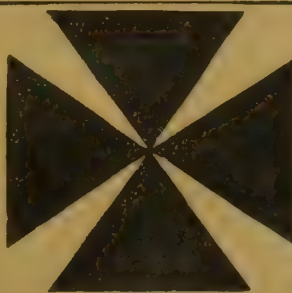
Our Entire Herd is  
Tuberculin Tested

## Tulare Holstein Farm

W. J. Higdon, Owner

TULARE, CAL.

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### Santa Anita Rancho Anoakia Breeding Farm Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

### Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce that amount of butter in one year.

We have a few of his sons, out of good record dams, for sale.

Inquiries or orders by mail will receive careful and prompt attention.

SANTA ANITA RANCHO

Anita M. Baldwin, Owner

Santa Anita, Cal.

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**For Sale to Nurseries or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by June 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

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**For Sale; Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencia and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedless grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F. 3110. Los Angeles.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Valencia Orange and Eureka Lemon trees** one year past, ½ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**For Sale**—Florida Sour Orange Seed Bed stock. Clean thrifty stocky. M. H. Howard, Fullerton, California. Sunset Phone 323W.

### SPECIAL

**SHARPLESS AVOCADO TREES**  
Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**Seedless Grapefruit**—Finest special type, cheap to close out. Fine trees. Also Eureka lemons. G. W. Sherwood, Fullerton, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, La-Manda Park, California.

**For Sale**—Citrus trees and Seed stock at your own price. Write or come. B. C. Dodson, Glendora, California.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### SEEDS AND PLANTS

**Bean Seed For Sale**—We have good seed beans on hand of following varieties: Limas, blackeyes, large white, small white, pinks, Teparys, Henderson bush, Mammoth bush. Now selling bean bags for fall delivery. C. C. Collins Company, Santa Ana, California. Sunset 71; Home 172.

**Tepary Bean Seed** for sale. Lots of 500 pounds or over 10 cents per pound f. o. b. Puente or Hartville. Twelve cents per pound, smaller lots.

Whittier Extension Co., Van Nuys Building, Los Angeles. Main 2606.

**Sudan Seed** for sale, 17½c, Amber cane 7½c; Feterita, Egyptian Wheat, Red and White Milo Maize, Dwarf White Milo Maize, yield 21 sacks per acre, S. Peruvian alfalfa. Large orders, wholesale prices. Hay in car loads. Write for circular. Box 501, Fowler, California.

**Sow Sudan Grass** in your thin alfalfa and double the yield this season, also all unoccupied moist or irrigated land. Hay equal to alfalfa by government test. Seven pounds pure seed for one acre postpaid \$2.35, quantity discount. Wm. Ritchie, Arlington, California.

**Plant a Few Acres of Dwarf Milo Maize** for seed. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Recleaned Sudan Grass** seed for sale. Prices 30c pound for all orders under 100 pounds; 25c pound for all orders over 100 pounds. A. W. Greathead, Box 270 R. C., San Jose, California.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Belladonna Seed** for sale in from 1 pound to 50 pound lots. Selected seed from strong thrifty plants. Prices reasonable. Address Belladonna Ranches, P. O. Box 1470, Los Angeles.

**Sweet Potato Plants**, Yellow, 500,000, \$2.00 per thousand, cash with order. Home Phone 833. A. T. Hooven, Anaheim.

**June Corn**—Squaw corn. Plant now. One pound 15c, 2 pounds 25c. \$10.00 per 100 pounds. Western Seed Company, 116 7th Street, Los Angeles.

**Red Jersey Sweet Potato Plants** 50c per hundred, \$3.00 per thousand. Post Paid. R. M. Plympton, Arroyo Grande, California.

**For Sale Yellow Sweet Potato plants** \$2.00 per 1000. Route 3, Santa Ana, W. L. Lutz.

### FERTILIZERS

Slacked lime corrects sour, heavy soils, prevents gum disease and by correcting your soil wrongs, you get better results from your fertilizers. Alfalfa, beans and peas are lime plants and need lime. Slacked lime acts quickly. Price low for immediate shipment. Gypsum supplied. H. B. Matthews, 495 Douglas St., Pasadena.

### MACHINERY

**FOR SALE—WHY BUY NEW? SAVE YOU HALF MATERIAL GUARANTEED**

**IRRIGATING PIPE**—1000 ft. 4-in. at 16½c; 300 ft. 3-in.; 500 ft. 8-in. at 38c; 400 ft. 10-in. 45c; 8-in. O. D. screw casing 95c; 4-in. riveted 16c.

**WINDMILLS**—8 ft. \$29; 10 ft. \$39; 12 ft. \$55 to \$65; 16 ft. \$95 cost \$280 new; costs nothing to run.

**DEEP WELL PUMP, BULLDOZER**, 20-in. stroke, with 7-in. cylinder, 100 ft. 8-in. casing, rods, all for \$225.

**HOW'S THIS?** 25,000 gal. redwood tank, \$95; 1500 gal., \$22; galv. drums, \$4; 30 gal. hot water boilers, \$3.50; 8000 gal. heavy corrugated galv. tank, \$135; 10,000 corrugated galv. tank, \$175; 900 gal. heavy riveted steel wagon tank, \$68; wagon tanks, \$28 to \$48; new, used redwood, galv. tanks, all sizes.

**ODDS, ENDS—CHEESE CUTTER**, \$5; automatic chicken feeders, \$2.50 capacity 50 chickens; large rendering kettle, \$10; alfalfa cutters, bone grinders, blower, cable; heavy log chain and drag hooks, \$10; big hay fork, \$6.75; low down tank pump, \$7.50; wheelbarrows.

**DEEP WELL PUMP, DOUBLE-ACTING AMES**, pumps more with less power, \$145, or complete with 7-cylinder 100-ft. 8-in. pipe and rods, \$375. Large Myers Bulldozer pump, \$78; small size, \$42.50. No. 4 vert. B. & J. two-step centrifugal pump complete for 50 to 75-ft. pit, \$195. Many others.

**USED PLOWS, MOWERS, RAKES**, cultivators, single disc riding plow, \$47.50; 14-in. Gilpin Deere riding plow, \$32.50; 4-gang Stockton, fine shape, \$27.50; spike harrows, \$16; mowers, rakes, \$35; corn cultivators, \$45; spring tooth harrow.

**BETT DRILLS**—Ready to ship, \$39. Sundries, cheapest in town; material guaranteed. Office DEMMITT CO., 120 No. Main, upstairs. Yards 816 Yale. Phones 15191, Bdwy. 1984, Los Angeles.

**REMANUFACTURED PIPE**  
All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

**WEISSBAUM PIPE WORKS**, 169 Eleventh St., San Francisco.

**Automobile Motors for Sale**—These used motors in fine condition; for stationary work, pumping or for tractor. Bargain prices. Big supply. Send for catalog. Economy Auto Parts Co., 490 Golden Gate Ave., San Francisco.

**For Sale**—1 Russell thresher, 30x50 fully equipped. 1 Rumely GasPull Tractor 15-30; both in first class condition and have had little use. Will sell cheap. L. A. Skiles, Neenach, L. A. County, California.

**Gasoline Engines**, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale**—Holt 1911 Sidehill combined harvester 16 ft. header 24 inch cylinder, \$500; cash or terms. B. Buckley, Berkeley.

**For Sale**—Stationary thresher complete outfit including engine. Ready for field. A real bargain will sell cheap. Route C, Box 82, Hanford, California.

### MISCELLANEOUS

**Car Owners**—Mark your auto all over with your name and address and no thief will take it if he knows it and we have a way of letting him know it night or day. Outfit for marking steel, brass and glass \$1.35 postpaid. Address Auto Protection Co., Arlington, California.

**Absentee Owners** find great difficulty in conduct of ranches. Owner's agent manages Tulare orchards and vineyards efficiently, economically. Land experted. Help in buying land RIGHT. D. J. Whitney, Route 1, Exeter, California.

**I have 20 cars** of hay to sell. Alfalfa at \$19.00, mixed barley and alfalfa at \$22.00, buyer to pay freight or will quote prepaid any station on application. Ernest Vince, Santa Barbara, California.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**Will Ship Box of lemons** (45), prepaid, any place in United States \$1.00. Ernest Vince, Santa Barbara, California.

### WANTED

**Wanted**—Motormen and conductors by Pacific Electric Railway. Age 18 to 35. Apply in person to Superintendent's office, 218 Pacific Electric Building, Los Angeles.

**Wanted**—2 row used corn cultivators, M. C. V., General Delivery, Hollister, California.

### LIVE STOCK

**D. E. Kellher**—Importer and Breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of yearling Hampshire rams sired by Walnut Hall and Butterfield Rams, purchased at Salt Lake, August, 1916, also a few yearling ewes of same breeding. Inspection and correspondence invited.

**Sheep for Sale**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

### GOATS

**Toggenburg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, California.

### FARM LANDS FOR SALE

#### HELP

We still need a few more settlers to finish our 6000 acres, which is being sold in 40 acre farms at \$25.00 per acre. Ten yearly payments at 6 per cent interest. By selecting your future home in this splendid tract at Bryant, Snohomish County, you are not alone buying a fertile and productive piece of land, but you are buying the best investment in the state today. Railways, paved roads, schools, churches, canneries, creameries and mills.

The best proposition on the market for the man who wants a farm. For further information address the owners, BROWN-ELL LAND CO., 904 Third Ave., Seattle, Washington.

**For Sale or Exchange**—60 acres rich, alluvial silt soil. Level. Irrigated, ready for crop. Real alfalfa land. Domestic water on place. Plenty of irrigation water. 1½ miles from town, churches, grammar and accredited high school. Half cash, half trade, anywhere. Make your proposition now. Chas. McNeely, Alpaugh, California.

**40 acres at \$375 per acre**—30 acres in alfalfa, 10 acres in beans, one-half mile from paved Sherman Way Boulevard and electric car line San Fernando Valley; water piped on to land, terms. R. D. Tinklepaugh, 638 Van Nuys Bldg., Los Angeles.

**For Sale**—160 acre relinquishment in Kern County. Level valley land all tillable. Near live railroad town. Some improvements, clearing, plowing, fencing, well. Valley grows delicious fruits, cotton, beans, alfalfa. Plenty of pumping water. Good prospects of gravity system. Electric power. Price \$10 per acre. Address J. Care Cultivator.

**Fine level farm land**, California, 160 acres, best of soil. Plenty of water. Near oil belt. Close to McKittrick. We had an offer from oil company six years ago of \$150 per acre. Price now for quick sale \$100 per acre. J. H. Rule, 415 Canal Ave., Wilmington.

**The Manteca Country**, rich, fertile, has been discovered. Bargains! Forty acres, alfalfa, dairy improvements. Sixty acres, dairy ranch. Forty acres highly improved. Inquire what you want. Walter Buchanan, Ripon, California.

**Manteca soil** produces twenty-five tons tomatoes per acre. That's why Manteca has four canneries with two more projected. How much land do you want? Walter Buchanan, Route 2, Ripon, California.

**For Sale**—Fine Paying Lemon and Orange grove. Upland district, none better; 10 acres, ample water stock; good improvements. C. W. Knapp, El Centro, California.

**Thirty-five sacks beans**, thirty sacks corn, twenty-eight tons beets, twelve tons alfalfa, per acre on Manteca land. Grapes, peaches, olives, berries. Walter Buchanan, Ripon, California.

### POULTRY

**Our Annual Sale**—Breeders, eggs, chicks. Make room for youngsters. Surplus offered at half what they cleared 1918. Pens, trios, pairs, hens, eggs, males below half. Chicks reduced. Leghorns, Wyandottes, Reds, White, Barred Rocks, Anconas, Minorcas, Ducks, Turkeys. Some greatest hens in California; trapped by government, 200-283 eggs yearly. Limited number. James Beeson, Pasadena, California.

**Model Poultry Farm**, White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

**Baby Chicks**—White Leghorn and R. I. Reds. Hatches every week. Any quantity, only first class chicks sent. Write for prices. E. W. Ohlen, Campbell, Cal.

**Book Your Orders** for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery, Watsonville, Cal.

**\$13.00 per 100 Barred Rox**, Reds, B. Minorcas, White Leghorns \$9.00. Terms \$2.00 with order, balance C. O. D. Ship Monday and Wednesday. A. G. Rowe, Inglewood, California.

**Black Orpingtons Lay**, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, Cal.

**For Sale**—Brown Leghorn pullets, seven, six and five dollars dozen. Mrs. J. B. Guerard, R. D. 2, Box 26, Merced, California.

**White Leghorn Chicks**—Only two more hatches. Order quickly. All strong youngsters. J. H. Stubbs, Campbell, California.

**Buff Orpingtons**, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

**Eastman's Bred-to-Lay Barred Plymouth Rocks**. Hatching eggs. Fairmead Poultry Farm, Fairmead, California.

### RABBITS

**Go into Business for Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**A Fortune in Rabbits**—Have raised the price we will pay to \$8.00 per pair. Want you to raise them for us. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

### LUMBER

**Lumber-Sash-Doors-Plumbing-Supplies**—Building materials of all kinds. New and second hand \*A.R.W. shingles 60c per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

### CATTLE

**Auction of a Complete Dairy**—75 grade Holsteins and 20 grade Jerseys. Herd in cow testing association for 3 years, records announced at sale; tuberculin tested regularly for the past 7 years, last test February 1, 1918, by a deputy state veterinarian, no reactors. Sold subject to tuberculin retest by the buyer. Holsteins mostly first, second and third calf granddaughters of King Segis Pontiac Emperor and Lorena Korndyke, both grand champion bulls at California State Fair. Jerseys bought as calves from the noted Mitchell herd that has been tested for butter fat regularly for ten years. All heifers in sale out of dams that made over 300 pounds butter fat in one year. The herd has been reduced half during the past year, retaining only the cows that made over 300 pounds butter fat in one year. Only two cows with blemished udders in the herd. Cattle loaded on cars free of charge. Will also sell one one ton Remington ice machine; brine tanks; pump; dairy equipment, including cans and jackets for shipping inspected milk; bottling machine; bottles, etc.; one fine saddle horse, weight 1200 pounds, and he is a beauty; six Percheron colts, growthy fellows with bone and substance. Owner donated heifer to be sold for benefit of Red Cross and Red Cross lunch will be served. Terms of sale \$100 and under, cash in hand; sums over \$100, six months time with bankable note at 7 per cent; a discount of 3 per cent for cash on sums over \$100 will be given. Sale will be held on Wm. Watt Ranch, 2½ miles northeast of Napa, California at junction of Napa Soda and Berryessa Roads, beginning promptly at 10 o'clock A. M., Saturday, June 16, 1918. Owner, Wm. Watt, Napa; auctioneer, Col. Cy. N. Clark, Modesto; sales manager, C. L. Hughes, Sacramento.

**For Sale**—Guernsey bull, Coras Reputation of the Rancho, 32102. Sire, Glenedette of Pinehurst; dam, Cora May. Born December 18, 1914. Bred by Knickerbocker Ice Co., Crystal Lake, Illinois. We are going out of the dairy business. This bull for sale at a sacrifice, price \$300. Floribel Farming and Cattle Co., Box 71, Hanford, California.

**SHORTHORN CATTLE, SHROPSHIRE SHEEP**, Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses, N. H. Locke Co., Lockeford, California.

**Shorthorns**—Several fine straight range bred bulls of high quality, ready for service, also some splendid yearling heifers. Fair Oaks Ranch, Willits, California.

**For Sale**—On account of dissolution of partnership will sell thirteen registered Guernsey cows. Choice individuals just in their prime. P. J. Weisel, Santa Fe Springs, California.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, Cal.

**Registered Holstein Bull**—Straight, strong constitution, well marked, good pedigree. Write to Sunnybrook Ranch, Willits, California.

**For Sale**—One of Tehama County's best dairy herds. All fine grade Jersey cows, also young stock. Will sell in part or all. John Risse, Los Molinos, California.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires** (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. E. E. Greenough, Merced.

**Five Fine Jerseys** for sale, three cows, two heifers, fresh and coming fresh, priced right. R. T. Waters, Box 68, Route 6, Bakersfield.

**For Sale**—One registered Guernsey bull four years old. Abram Marron, Jr., Box 10, Oceanide.

**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal.

**Registered Jerseys**—1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

### PATENT ATTORNEYS

**Patents** that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

**Patents**—Copyrights, trade marks and labels registered. Solicitor of American and foreign. James R. Townsend, 712 San Fernando Bldg., Los Angeles. Phones: Home A4619; Sunset Main 347.

### AGRICULTURAL IMPLEMENTS

**IMPLEMENTS AND RANCH SUPPLIES**. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC., The Yellow Front. Established 1892. 112-118 S. Los Angeles St., Los Angeles

### ENGINES

**Several New and Slightly Used Engines**, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

**For Sale**—One 15-30 Gas Pull Rumley engine, cost \$2000.00, will take \$1500.00. Abram Marron, Jr., Box 10, Oceanide.

### AUTOMOBILE ACCESSORIES

**Fords** can burn half coal oil, all distillate, or cheapest gasoline, using our 1918 Carburetor; 34 miles per gallon guaranteed. Easy starting. Great power increase. Attach it yourself. Big profit selling for us. 30 days trial Money back guarantee. Styles to fit any automobile. Air-Friction Carburetor Company, 313 Madison Street, Dayton, Ohio.



## HOGS

BERKSHIRES GUERNSEYS  
GRAPE WILD FARMS

A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.

A. B. HUMPHREY,  
Escalon, San Joaquin County, California.

**Make Big Money**—Pork prices jumping up. Breeding stock scarce. Next winter will see the greatest shortage of hogs and the highest prices ever known. Prepare now by getting some Whitten Ranch Poland-Chinas—the prolific, easy-feeding money-makers. Prices reasonable; satisfaction guaranteed; everything immune. Send for valuable free booklet, "Hogs for Profit." Ranch in Tulare County, but write R. H. Whitten, 519B Marsh-Strong Building, Los Angeles.

**Poland-Chinas**—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

**"Billiken" Chester Whites**—The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

**We Pay Cash for Hogs of All Sizes,** weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Rancho Rubio Durocs**—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for \$25.00. Elmer Lamb, Ceres, California.

**Mule Foot Hogs,** large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

**Duroc-Jerseys**—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Callstoga, Cal.

**Large Type Poland Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

**Duroc-Jerseys**—We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, California.

**HEWITT'S BIG TYPE POLAND-CHINA** gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Berkshires**—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

## GOVERNMENT LAND

**Be Patriotic**—Raise stock. Oregon, California openings. Valuable land marked plainly on County sectional map. \$2.50 any county. Booklet Free. Joseph Clark, Sacramento, California.

## FIELD NOTES

Continued from Page 705

tie of Willowood made 8482.5 pounds milk and 486.94 pounds 85 per cent butter. Both of the young cows are out of daughters of the good transmitting bull Philadelphia's Glory.

The announcement that A. W. Morris & Sons will sell 125 head of registered Holsteins from their big herd on July 11 will interest buyers from all over California. There are bound to be a great many real bargains in this sale, for the 100 head of cows offered are mostly all bred to the famous herd sires in the Morris herd and it will be an unparalleled opportunity to secure daughters and sons of these bulls at the modest prices the dams are sure to bring. The Morris herd numbers close to 500 head at the present time and after this sale they will still have the largest herd on the Pacific Coast.

W. C. Choisser, Riverdale, made his first purchase for the foundation of a registered Holstein herd at the North San Joaquin Breeders' First Consignment Sale at Modesto on May 9, and following the sale bought at private treaty from H. E. Cornwell, Modesto, the good heifer Mabel Ormsby Pietertje 3d, daughter of the butter fat winner at Fresno fair. Mr. Choisser is a Holstein enthusiast and plans gradually to build up a first class herd.

Wm. Lehfeldt, who is a newcomer in the San Joaquin Valley, secured an excellent start for a registered Holstein herd through his purchases at Modesto on May 9 where he was a consistent bidder on the good ones and succeeded in bidding last on several of them.

Dairymen all up and down the Pacific Coast are turning to pure bred registered dairy cattle in large numbers. It is the natural consequence of a little thought on the part of dairymen, and the feed and labor conditions that have prevailed for some time are certainly strong stimulant to thought. Good dairy practice means the keeping of good profitable cows, even in smaller numbers, and as an economic factor in dairying the pure bred registered cow is in a class by herself.

Leafy Veeman De Kol is the thirty-first 40 pound pure bred Holstein. She finished her test with a record to her credit of 589.7 pounds of milk yielding 40.10 pounds of butter produced in seven consecutive days. Her sire is Duke Wayne Veeman De Kol. Her dam is Leafy Dawn De Kol.

A fine boar which will show as a junior yearling, sired by Ames' Rival 100th, has been purchased by H. L. and E. H. Murphy from W. M. Carruthers.

RANGE CATTLEMEN'S MEETING  
AT UNIVERSITY FARM

The meeting of range cattlemen to be held at the University Farm on June 27 and 28 is a meeting to which the country organizations throughout the state are sending three or more delegates for the purpose of discussing a state wide organization of the beef cattlemen of California.

With the beef cattle industry of the state in a more or less critical condition on account of the inevitable feed shortage and the unusual range of prices due to war conditions, this is counted to be a most important meeting, the outcome of which may have a significant bearing on the future development of the cattle industry.

## BUTTE COUNTY CATTLEMEN

Men who have cattle or sheep ranging in Plumas forest reserve recently met at Oroville and organized that their interests might be better protected. Officers were elected as follows: President, Thomas Gianella of Honcut; vice president, Peter Carmichael of Table Rock; secretary and treasurer, George W. Ross of Wyandotte; members of advisory board, George Farnum of Palermo, W. M. Bills, John Bean and J. E. Rutherford, all of Wyandotte.

The president has issued a proclamation calling upon all to unite in celebration of Independence Day and to make it one of the most memorable since the birth of America's freedom on July 4th, 1776.

In commenting on the cruelties perpetrated by the Hun soldiers Harry Williams, a noted war correspondent in France, writes: "America must not expect civilized warfare; the only way to change the Hun heart is to put a bullet through it."



## Get Rid of Worms

Figure how much it's worth to you in dollars and cents to keep your hogs free from worms. Worms prevent thrift—retard growth—rob you of good, high-priced pork.

Dr. Hess Stock Tonic  
Drives Out the Worms

and at the same time tones and conditions the system. It enables your hogs to be at their best—to do their best. You take no chances. My Stock Tonic is guaranteed. You buy it at an honest price, from my dealer in your town who will return your money if it does not do as claimed.

Why Pay the Peddler Twice My Price?

25-lb. Pail, \$2.25; 100-lb. Drum, \$7.00

Smaller packages in proportion.

DR. HESS & CLARK, Ashland, Ohio

DR. HESS POULTRY PAN-A-CE-A  
will help your hens through the moult.

## Dr. Hess Dip and Disinfectant Kills Hog Lice

Kansas Germ Free Fluid Vaccine  
For BLACKLEG

This seal is our word of honor and your protection. If it is not on the label of every bottle don't use it. Only the original carries this signature.



DENVER, COLO. WICHITA, KANS.  
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401 Bryson Bld.  
Los Angeles, Cal. The Kansas Blackleg Serum Co.

Made by Dr. O. M. Franklin, Originator  
Holds the record of immunizing more than a Half Million Calves against Blackleg with

— only one handling of each calf — has stood the test of time—easy and safe to use—cannot give the disease to calves or spread it in pastures.

Leading cattlemen use it exclusively and recommend it to their friends—ask any of them or write to the nearest office for references and free Booklet on Blackleg.

## Guernsey Bull Calves

We are offering a number of bull calves from two to six months old carrying the greatest blood of the Guernsey breed. They are from our best cows—some of which have official records as high as 556 pounds of butter fat at three years, and are sired by the great King of Hollow-Hill 25876 and Cora's Glen 31541—Grand Champion at Riverside in 1916. If you will take them quick you can have them at prices that will surprise you.

## Hollow - Hill Farm

Box 212 R.R.1.

Colton, Cal.

## HOGS MEAN DOLLARS

More today than ever keep your hogs well and strong by using  
**Economy Powder**

Send For Free Sample and Stock Book

**Economy Hog & Cattle Powder Co.**

Hearst Bldg.

San Francisco, Cal.





## Egyptian Cotton for California

**R**ENEWED interest in the possibilities of cotton culture in the San Joaquin and Sacramento Valleys of California has resulted from favorable reports of experimental plantings in several localities last year. The danger of direct competition with the South can be avoided by growing a different kind of cotton. Instead of the short staple Upland type of cotton which is grown in the Southern cotton belt, it is now very distinctly to the advantage of the Southwestern farmers to plant Egyptian cotton, which is well adapted to the conditions of the irrigated valleys of Arizona and California. With cotton, as with every other crop, a failure to take into account the differences of the varieties may lead to costly mistakes.

### Results with Egyptian Cotton

The Egyptian cotton is very different from the Upland type, being a taller and more slender plant with narrower leaf-lobes and smaller bolls. This last feature often leads people from the South to suppose that the yield must be small, whereas, in reality the Egyptian cotton often yields very well, a 500-pound bale or more per acre having been obtained on many farms in the Salt River Valley of Arizona. Although some of the early

plantings of imported Egyptian seed gave very unsatisfactory results, much better behavior has been secured regularly for several years past from the varieties that have been bred in Arizona by the United States department of agriculture. About 30,000 acres of Egyptian cotton were grown in the Salt River Valley in 1917, with a return to the farmers estimated at \$5,000,000. Recent estimates from this and other valleys indicate that nearly 100,000 acres of Egyptian cotton will be planted this year in Arizona.

The Arizona varieties have been grown not only in the Yuma, Palo Verde, and Imperial Valleys of Southern California, but have been found well adapted to the southern part of the San Joaquin Valley, around Bakersfield and Fresno. Experiments have been conducted in this region for several years past. Further experience will be necessary before the Egyptian cotton may be considered as an assured crop in districts farther north, although the same varieties grew and ripened satisfactorily at several points in the San Joaquin and Sacramento Valleys last year. The season of 1917 may have been unusually favorable for the ripening of cotton in the Sacramento Valley, but even where rather low yields were se-

cured on account of late planting or other unfavorable cultural conditions, the results are considered profitable, and it is expected that more extensive plantings will be made this year, especially in some of the rice-growing districts.

### Farmers Must Work Together

Community organization of growers should be recognized as one of the chief requirements for establishing cotton culture in new districts. It is out of the question to produce adequate stocks of pure seed if different varieties are grown in adjacent fields or sent to the same gin. In addition to keeping the seed pure and thus maintaining the yield and quality of the crop, organized communities have an enormous advantage in relation to marketing, since they can offer commercial quantities of uniform, high class fiber.

### Advantages of Cotton in Cropping Systems

In some districts there is special need of such crop as cotton, that can be grown in rotation with rice, to rid the land of water grass or tules, which render continuous rice growing impracticable. Drainage will be a problem in some districts, but in others the water-table is at least three or four feet below the surface, and is not likely to interfere. Egyptian cotton is likely to be more useful than Upland cotton for shading out the grass, because the plants are larger.

Also there are many lands not now used, or yielding only small returns for grain or pasture, but likely to yield good crops of cotton, as recent experiments indicate. In many cases the food and fodder value of the seed alone might be much greater than that of crops now being raised for such purposes. The demand for cottonseed oil was increasing rapidly even before the war, and local supplies of cottonseed meal are needed by the live stock industry of California.

### GERMAN CIRCULAR DISTRIBUTED IN SPAIN TELLS WHAT TEUTON ARMIES HAVE ACCOMPLISHED

**T**HE department of state has received a copy of a circular which is being distributed by German propagandists in Spain setting forth claims as to what has been accomplished by the German armies. The authenticity of the document as being of German origin has been established.

The circular, which is in Spanish, states:

"Besides an untold amount of war material captured on the battle field, the Germans have taken possession of incalculable booty in France and Belgium, including:

High grade watches .....	417
Average watches .....	5,016
Underwear .....	18,073
Embroideries and women's handkerchiefs .....	15,132
Umbrellas and parasols .....	3,705
Silver spoons .....	1,876
Bottles of champagne .....	523,000

"These figures show a large increase over those of the campaign against France in 1870-71.

"In Belgium, besides many art treasures, they have confiscated old paintings valued at 3,000,000 pesetas.

### Forced to Teach Severe Lesson

"Due to the treachery of Cardinal Mercier and other priests, who did their utmost to stir the priests against the good hearted German soldiers, they were forced to teach a severe lesson to the Belgian and French Catholics.

Cathedrals destroyed .....	4
Rendered unserviceable .....	8
Churches destroyed .....	27
Rendered unserviceable .....	34

Total .....

"In Poland also a large number of churches have been destroyed for military reasons. The figures concerning these have not yet been published.

"As a result of the stupid stubbornness of the Belgian people in continuing the struggle after their bloody and final defeat on the battle field, the German officers were forced, against their will, to impose punishments on many rich individuals and wealthy cities. This has contributed the following amounts to the German treasury:

	Pesetas.
Punishments .....	87,000,000
Security .....	13,000,500
Reprisals .....	15,750,000
Forced contributions .....	4,320,850

Total .....

"This amount includes a fine of 15,000 pesetas imposed on the Alsatian children who insist on speaking the French language and refuse to study the beautiful German language. These statistics are a most useful warning to the neutral countries.

"If there are any still thinking of siding with the Allies, let them take warning from the fate of the others."

### Extent of Territory Occupied

In connection with claims of the extent of territory occupied by Ger-

## IHC Machines Best Substitutes For Scarce Hired Help

**T**HE American farmer produces more per man than any other farmer in the world. Using labor-saving machines, he produces record crops with less hired help than is required under any other system. Therefore, in the present crisis, with help so scarce, every farmer should use the most efficient farm machines he can get, the only kind that can be depended upon to make the necessary increase in production.

The International Harvester Company of America markets the full line of high-grade machines listed in this advertisement for disking and harrowing seed beds; planting and cultivating crops of all kinds; cutting, making and storing hay; cutting, binding and threshing small grains; harvesting, husking and shelling corn; shredding corn fodder, filling silos, fertilizing fields; skimming cream; and grinding feed. It sells efficient farm power machines, engines and tractors operating on the cheapest fuels a farmer can buy. It provides wagons and motor trucks for all kinds of farm hauling.

Many of these machines have been used by American farmers for close to seventy-five years. They have helped to establish the standing of the American farmer. They are better today, more efficient and more economical than ever before. In many cases, one or another of these machines will solve the hired help and farm power problems on individual farms.

International machines are sold through ninety branch houses and over thirty thousand local dealers. Any customer can place an order, or command the services of this organization, by a telephone call to the dealer, or a visit to the nearest town.

It is important this year that all orders for machines be placed as early as possible, preferably months in advance. See the local dealer, or write us about the machines you are going to need this year, and do it now.

### International Harvester Company of America

(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.  
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah  
San Francisco, Cal. Spokane, Wash.

CHAMPION DEERING MCCORMICK MILWAUKEE OSBORNE

### THE I H C LINE

#### GRAIN MACHINES

Binders Headers Reapers  
Rice Binders Push Binders  
Harvester-Threshers

#### HAY MACHINES

Mowers Rakes Tedders  
Combined Side-Delivery  
Rakes and Tedders  
Side-Delivery Rakes  
Hay Loaders  
Sweep Rakes  
Hay Stackers  
Combination Rakes and Stackers  
Hay Presses

#### CORN MACHINES

Planters Drills  
Cultivators  
Motor Cultivators  
Binders Pickers  
Ensilage Cutters  
Huskers and Shredders  
Shellers Stalk Rakes

#### TILLAGE

Disk Harrows  
Peg-Tooth Harrows  
Spring-Tooth Harrows  
Cultivators (One-horse)

#### GENERAL LINE

Kerosene Engines  
Gasoline Engines  
Kerosene Tractors  
Motor Trucks  
Farm Wagons  
Farm Trucks  
Manure Spreaders  
Cream Separators  
Grain Drills  
Fertilizer and Lime Sowers  
Feed Grinders  
Stone Burr Mills  
Threshers  
Stalk Cutters  
Knife Grinders  
Binder Twine



man troops, the following footnote appears:

"When it is held that the Germans have occupied no English territory and that on the contrary they have lost all their African colonies, amounting to some 3,000,000 square kilometers, it must be remembered that the English, according to the declaration of their ministers, are not intending to secure any extension of the British Empire; that they have entered the struggle with only the aim of helping the Belgians. That is to say, the English have practically pledged themselves to return the German colonies after the war in exchange for the evacuation and indemnification of Belgium. The Germans, therefore, are to recover all that they have lost in Africa."

British Prisoners Taken

It is claimed in this document that more than 50,000 British have been made prisoners, and in this connection the following statement is made: "Although to these figures the English oppose 124,806 German prisoners taken by them on the western front, it must be remembered the English treat their prisoners with notable kindness (blandura notoria), while the regime imposed on the English prisoners by the Germans is one of extreme rigor; so that the Germans, with a small number of prisoners, have secured a much superior moral effect. Besides, to the 2264 officers and 51,325 soldiers, must be added the several thousand English prisoners that have died in consequence of disease, scanty food, and other accidents in German concentration camps."

Note: The foregoing figures regarding British prisoners refer to the total prior to the recent offensive.

FEDERAL EXPLOSIVES LAW

Under the new federal explosives act approved by the president October 6, 1917, and effective November 15, 1917, every person is required to have a license for the purchase, possession, sale, or use of explosives, or ingredients of explosives.

Explosives are dynamites, blasting and shotgun powders, caps and many other commodities listed in the act, as well as the component parts of these materials, which under the act are classed as ingredients.

The bureau of mines of the interior department is charged with the enforcement of this law. The director of the bureau of mines has appointed licensing agents for the issuing of licenses in every hamlet, village, town and city in the United States. In California we have over 700 licensors equipped and commissioned to issue licenses. The county clerk of every county in California is appointed a licensor. In almost every instance justices of the peace are appointed licensors, as well as notaries public.

Location of licensors, or other information regarding the federal explosives act can be obtained by communicating with John M. Griffin, United States Explosives Inspector for California at Madera.

ALFALFA WEEVIL

Phytonomus posticus fab., or to speak in more intelligible language, the alfalfa weevil, is of enough importance to alfalfa growers of Utah that the Utah agricultural college experiment station has issued Circular No. 31, given entirely to discussion of the habits of this pest and to methods of control. The first sentence of the report is rather startling. It is: "The alfalfa weevil is rapidly spreading over the entire alfalfa areas of the Western states." California is free from this pest, but it is of vital interest to every alfalfa grower that he should keep himself posted as to the pest, its nature of work, and be prepared to give aid by every control measure if the pest should enter the state. The first step, however, is to join the state and county horticultural commissioners in the effort to prevent its entrance. The insect was first discovered in Salt Lake County in 1904. It has spread in all directions from this first infested section into Arizona, New Mexico, Western Wyoming, and Colorado.

Fire Control



IN THE effort to secure more thorough control of fires so prevalent in California grain fields, fire companies have been organized, patrols have been established and thorough watch kept to prevent as much as possible the action of this destructive force. The gas tractor has been charged with being responsible for many of these fires, tractor people have been investigating, and a committee has been appointed to determine as to responsibility, and further recommend methods which would give assurance that the tractor will be provided with safety devices. The committee consists of L. C. Gauthier, chairman; W. G. Crisswell, and Prof. J. B. Davidson, and reports as follows:

- The following five points were considered:
1. Spark arrester or water arrester.
  2. Protection to manifold and exhaust pipe.
  3. Air cleaner.
  4. Care of machine.
  5. Extinguishers in field.

In regard to No. 1, spark arrester, it was shown that the use of water device was very unsatisfactory because of its being very large and causing more heat on the operator, besides causing back pressure on the engine, causing it to heat and not allowing it to give its full power.

It was also shown that the different companies are all working to get a suitable spark arrester to put on their tractors before the 1918 harvest.

No. 2. It was admitted that the fires set in grain fields were not from a tail wind when the straw and chaff were blown against the manifold and exhaust pipe. It was also shown that a straw could not be placed against either when hot as the heat rays would carry it away. But it was shown that in peat land where the ground will burn that it has been known that this dust settled on the manifold before it was hot and caked there and sometimes burns off. It is, therefore, necessary to protect them when working in such soil.

No. 3. An air cleaner is a neces-

sity as the dirt and dust taken in from the carbureter mixes with oil and carbon, later loosening up and going out through exhaust, carrying along burning oil.

No. 4. It was recommended that the service men of each company be instructed to caution the operators of tractors in regard to carbon and keeping their engines clean, also in regard to throwing dirty and oily waste where it could start a fire.

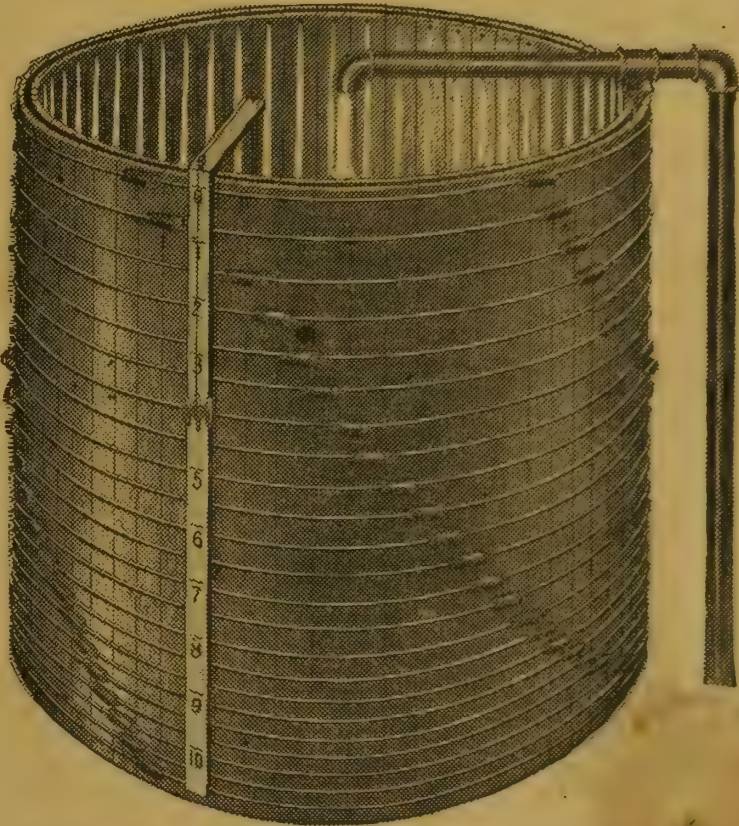
No. 5. All threshing rigs should carry fire extinguishers on the harvesters, for there is but one man on the tractor while there are four or five on a harvester, besides in case of fire it is impossible for tractor driver to leave his tractor as he must very often run to some safe place. Therefore, we would recommend that all farmers be advised to have fire extinguishers on their harvesters and to order them in time, for by waiting until the last minute they may not be able to procure them.

In regard to circulars to be sent to farmers concerning fires, the committee took exception to the gas tractor being considered the only fire demon and contended since it was not, it should not be so pictured for we had grain fires before there were gas tractors.

Therefore, all precautions should be taken for the prevention of fires.

Secret of their long life  
—special non-shrinking  
feature.

DURABLE  
REDWOOD  
  
PACIFIC  
REDWOOD  
TANKS



are holding water on three continents. Their remarkable long life is due to non-shrinking—the patent feature found only in PACIFIC TANKS.

Pacific Redwood pipe is scientifically built of seasoned lumber, clear, dried wood free from knots, splits or deadwood.

The staves are tongued and grooved, wound with galvanized wire, and rolled into a preservative to protect the wire from corrosion and rust.

Our engineers, with a world of experience, are at your service.

A PACIFIC Redwood tank and pipe outfit costs less to install than any other, and lasts twice as long. **INVESTIGATE.**

Redwood is the most durable of woods for exposure to all climates.

Water preserves redwood. Keep the channel filled with water. Joints are kept tight by water flowing down inside.



**PACIFIC TANK & PIPE CO.**  
THE STANDARD SINCE '88  
312 Market Street, San Francisco  
907 Trust and Savings Bldg., Los Angeles

Pacific Tank and Pipe Co.  
Address nearest office.

Gentlemen:  
Please send promptly your catalogue of Water Tanks.

I need a tank to hold..... gallons.

It should be mounted on a tower.....feet high.

The water to be delivered from.....

Pipe { Length.....  
Size.....

Name.....

Address.....





## Norwalk Tires

The master experience of the World's foremost tire builders has made possible the production of Norwalk Tires. A close comparison of these casings with other tires will reveal the superiority of Norwalks. The rubber is noticeably tougher, the fabric is more deftly laid, the tread is symmetrical, abounding with excellent features.

Factory Distributors:

**Lichtenberger-Ferguson Co.**

Los Angeles, Fresno, San Francisco

## Great Power at Small Cost West Coast Gas Engines

Operate with Small Fuel Consumption



Fuel is becoming more and more an important item in engine and pump operation. WEST COAST GAS AND DISTILLATE BURNING ENGINES are constructed to run economically. LOW FUEL CONSUMPTION IS GUARANTEED. We specialize in complete pumping plants. Write us in regard to your engine and pump requirements.

## West Coast Gas Engine Co.

420 East Third St., Los Angeles  
70 Fremont St., San Francisco

Factory—Union and Market Sts., San Diego

### TIRES 1/4 LESS

There's a way to obtain high-grade tires at manufacturers' prices. Write and we'll tell you. Freshly made tires, every one.

**GUARANTEED 6000 MILES**

(No seconds.) All sizes, non-skid or plain. Shipped prepaid on approval. This saving on guaranteed quality will open your eyes. State size tires used.

**SERVICE AUTO EQUIPMENT CO.**  
941 Traders Bldg., Kansas City, Mo.

## Reliance Irrigation Meter

For Open Ditches, Reservoirs and Gravity Pipe Lines

The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.

**Hydrometric Co.** 955 North Main St. Los Angeles, Cal.

## Los Angeles Market

Los Angeles, June 5, 1918.

### BUTTER

Produce Exc. Quotations.  
Prices to trade 1 1/2 to 2 1/2 c higher.  
California extra creamery ..... 40 1/2  
Dairy Exchange price past week on extras.  
May 29 30 31 June 1 3 4  
'18 ... 42 ... 42 41 40 1/2 40 1/2  
Rcts. wk. ending June 5, 324,700 lbs.

### CHEESE

Brokers prices:  
California fresh, lb. .... 23  
Eastern Daisies ..... 26  
Domestic Swiss ..... 36  
Oregon triplets ..... 26 @ 26 1/2

### EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.  
Fresh extras ..... 38  
Pullets ..... 33  
Case Count ..... 37  
Dairy Exchange prices past week on fresh extras.  
May 29 30 31 June 1 3 4  
'18 ... 39 ... 39 39 38 38  
Rcts. wk. ending June 5, 3337 cases.

### POULTRY

We quote to producers:  
Broilers ..... 23 @ 32  
Fryers ..... 32  
Hens, small, 24; heavy ..... 27  
Ducks, lb. .... 23 @ 26  
Roasters ..... 32  
Roosters, old ..... 14  
Turkeys ..... 28 @ 30  
Geese, young, lb. .... 25  
Rabbits, live, 17 @ 18; dr. .... 40

### LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, June 5, by the Cudahy Company.  
Cattle—  
Beef steers, av. 1000-1100 lbs.—11.50 @ 12.00  
Helfers, good ..... 8.50 @ 9.00  
Cows, good ..... 8.00 @ 8.50  
Canners ..... 5.00 @ 5.50

Hogs—  
Av. 125 lb. .... 16.00  
Av. 150 lbs. .... 16.50  
Av. 175-225 lbs. .... 17.00  
Rough, docked 20 lbs.; piggy sows, 40 lbs., stage, 40 per cent.  
Prime wethers ..... 11.00 @ 11.50  
Ewes ..... 10.50 @ 11.50  
Lambs ..... 14.50 @ 15.00  
Yearlings ..... 11.00 @ 11.50

### POTATOES

Wholesale selling price:  
Northern Burbank, cwt. .... 1.90  
Idaho Russets ..... 1.95 @ 2.00  
New, lug ..... .90  
Sweet, lug ..... 2.25

### ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. .... 1.10  
Brown ..... 1.50  
White ..... 2.50  
Crystal Wax, cr. .... 1.50  
Garlic ..... 1.0

### VEGETABLES

Wholesale prices:  
Artichokes, doz. .... 60 @ 85  
Jerusalem, lb. .... 7 1/2  
Asparagus ..... 9 @ 10  
Beans—Wax, lb. .... 5 @ 5 1/2  
Ky. Wonder ..... 6 @ 6 1/2  
Beets, sk. .... 2.00  
Cabbage, lb. 1 1/4; sk. .... 1.35  
Red, lb. .... .5  
Carrots, doz. .... 30  
Celery, doz. .... 2.00 @ 2.25  
Corn, field, 45; sugar ..... 60  
Cucumbers, bx. .... 1.00  
Egg Plant, ..... 10  
Horseradish, lb. .... 15  
Lettuce, doz. .... 40  
Leeks ..... 35  
Mint, doz. .... 40  
Onions, green, doz. .... 25 @ 30  
Peas, Tel. lb. .... 7 1/2 @ 8  
Peppers, Chili, lb., 22 1/2; Bell ..... 30  
Parsnips, doz. .... 40  
Parsley, doz. .... 20  
Radish, doz. .... 25  
Rhubarb, C. W. bx. .... 1.25 @ 1.35  
Strawberry ..... 1.50  
Romaine, doz. .... 40  
Spinach, doz. .... 30  
Squash—Summer, lug. .... 1.25  
Tomatoes, cr. .... 1.65  
Turnips, doz. .... 45  
Watercress, doz. .... 35 @ 40

### FRUITS

Wholesale prices:  
Apples—W. W. Pearmain ..... 1.85 @ 2.50  
Spitzenberg ..... 2.50 @ 3.00  
Y. Newton ..... 2.00 @ 2.50  
Apricots, cr. .... 2.50  
Bananas, lb. .... 6 1/2 @ 7  
Cantaloupes; Ponies, ..... 3.25  
Standard ..... 4.25  
Cherries, lb. .... 10 @ 12  
Figs, bx. .... 3.00  
Gooseberries, lb. .... 2  
Loquats, lb. .... 9  
Peaches, cr. .... 2.00 @ 2.25  
Strawberries, tray ..... 1.50

### CITRUS

Lemons, packed, 7.25; loose ..... 5.50  
Juice ..... 4.25  
Oranges—Valencias ..... 6.75  
Grapefruit ..... 3.50  
Limes, basket ..... 75

### DRIED FRUITS

Date for making contracts on 1918 crop postponed again by government order to July 15.

### BEANS

These are prices made by wholesaler to retailer.  
Lady Washington ..... 13.50  
Limas ..... 13.75  
Pinks ..... 8.50  
Manchurian Reds ..... 9.00

Baby Mex. .... 9.50  
Garbanzos ..... 9.50 @ 10.00  
Small Whites ..... 13.50  
Blackeyes ..... 9.00  
Tepary ..... 9.00 @ 10.00  
Lentils ..... 25.00  
Mex. Red. .... 9.00

### HONEY

Jobbers' prices:  
White extracted ..... 20 @ 22  
Light amber extracted ..... 15 @ 18  
Amber extracted ..... 12 @ 14  
White comb, per case ..... 4.50 @ 5.50  
L. amber comb, per case ..... 3.50 @ 4.00  
Beeswax ..... 36 @ 40

### HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A. carlots:  
Tame Oat ..... 26.00 @ 28.00  
Volunteer Oat ..... 14.00 @ 16.00  
Wheat ..... 23.00 @ 26.00  
Barley ..... 23.00 @ 26.00  
Alfalfa ..... 18.00 @ 21.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.  
Number 1 alfalfa hay is \$23.00 per ton f. o. b.; common shipping points take a \$1.50 carload rate to destination. Prices from points where a higher or lower rate applies to destination will be correspondingly lower or higher.

### GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:  
No. 1 bright feed barley ..... Bld Asked  
Milo maize, local ..... 3.50  
Oat middlings ..... 36.00

## San Francisco Markets

San Francisco, June 4, 1918.

### BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound, as follows:

Two-pound squares, parchment wrapped, 1/2 c; 1-pound squares, parchment wrapped, 1 c; 2-pound squares, in cartons, 1 1/2 c to 2 1/2 c; 1-pound squares, in cartons, 2 c to 3 c.

Dairy Exchange quotations, lb.:  
Extras ..... 44  
Firsts ..... 43  
Prices Extras past week and year ago.  
May 28 29 30 31 June 1 3  
'18 ... 45 44 ... 44 43 1/2 44  
'17 ... 37 1/2 38 ... 36 1/2 36 1/2  
Rcts. wk. ending June 3, 512,800 lbs.

### CHEESE

Dairy Exchange quotations:  
Cal. Flats ..... 21 1/2 @ 22 1/2  
Jack Cheese, full cream ..... 22 @ 23  
Ore. Y. Am. .... 24

### EGGS

Dairy Exchange Quotations:  
Extras ..... 40  
Firsts ..... 39 1/2  
Selected Pullets ..... 37 1/2  
Prices Extra past wk. and yr. ago:  
May 28 29 30 31 June 1 3  
'18 ... 41 1/2 40 1/2 ... 40 1/2 40 1/2 40  
'17 ... 34 34 1/2 ... 33 1/2 33 1/2  
Rcts. wk. ending June 3, 16,645 cases.

### POULTRY

We quote to producers, lb.:  
Large hens, 26 @ 27; small, do. 24 @ 25;  
broilers and fryers, 1/4 to 1 1/2 lbs., 30 @ 32;  
1 1/2 to 2 lbs., 33 @ 38; 2 to 3 lbs., 40 @ 41; old  
roosters, 19 @ 20; ducks, lb., 22 @ 23.  
Squabs, doz. .... 2.50 @ 4.00  
Belgian Hares, live, lb. .... 16 @ 17  
Jackrabbits, doz. .... 1.75 @ 2.50

### LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for grass fed stock. Hay fed brings 1/2 to 3/4 more.  
Steers, lb., 12 @ 12 1/2; thin, 8 @ 11; cows  
and heifers, 7 1/2 @ 8 1/2; thin, 4 1/2 @ 6; calves,  
7 @ 10 1/4.

Sheep—Lb. gross weight: Unshorn  
wethers, 11 1/2 @ 12; ewes, 10; lambs, year-  
lings, 12 @ 12 1/2; milk, 14 @ 14 1/2; shorn  
sheep, 1 1/2 @ 2 less.  
Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 16; 140 to 300 lbs., 16 1/2; 300 to  
400 lbs., 16.

### POTATOES

Wholesale selling prices at wharf, cwt.:  
River ..... 1.15 @ 1.40  
New, lb. .... 2 @ 2 1/2

### ONIONS

Wholesale selling price on wharf, cwt.  
Garlic, lb. .... 3 @ 4  
New Red sk. .... 90 @ 1.00

### VEGETABLES

Wholesale selling price.  
Artichokes, doz. .... 12 1/2 @ 40  
Asparagus, lb. .... 4 @ 7  
Beets, sk. .... 75 @ 1.00  
Beans, lb., String, 7 @ 8; Wax ..... 5 @ 6  
Cabbage ..... 1 1/4 @ 1 1/2  
Carrots, sk. .... 85  
Cauliflower, doz. .... 40 @ 60  
Celery, cr. .... 1.50 @ 2.00  
Cucumbers, bx. .... 1.35 @ 1.50  
Corn, green Imperial, doz. .... 35 @ 50  
Egg Plant, lb. .... 8 @ 10  
Lettuce, doz. .... 25 @ 30  
Onions, green, bx. .... 65 @ 75  
Parsnips, sk. .... 85 @ 1.00  
Okra, lb. .... 15 @ 17 1/2  
Peas, lb. .... 3 @ 4  
Peppers, Bell, lb., 20 @ 25; Chili ..... 10 @ 20  
Rhubarb, Straw, bx. .... 1.25 @ 1.50  
Squash, Summer, cr. .... 1.00 @ 1.25  
Italian, cr. .... 1.00 @ 1.25  
Spinach, cr. .... 50 @ 75  
Tomatoes, cr. .... 1.75 @ 2.00  
Turnips, sk. .... 75 @ 1.00

### FRESH FRUITS

Apples—Newton Pippins ..... 2.75 @ 3.00  
Apricots, cr. .... 2.00 @ 2.50  
Bananas, lb. .... 7 @ 7 1/2  
Berries—Strawberries, ch. .... 7.00 @ 11.00

## BRENNEIS Two Row Riding BEAN CUTTER

IT SAVES ONE MAN'S  
TIME, DOES BEST WORK,  
SOON PAYS FOR ITSELF.



You cannot afford to lose time with old implements when labor is scarce and prices as high as they are this year. It's time to look ahead a little. If you order now you can get our fast TWO-ROW RIDING BEAN CUTTER made for California conditions in the great Ventura County bean fields. This machine has over 20 years successful experience behind it and our factory is here close at hand to back up every guarantee. This implement cuts two rows at once and draws the two rows of vines together. Each cutter is equipped with extra long blades, and convenient lever shifts to make the work accurate and easy. No bean ranch is complete without one of these economical labor saving bean cutters.

On account of the large crop the big demand for bean tools and the uncertainty of supply of steel, all orders should be placed at once, otherwise delivery is most uncertain.

**Brenneis Mfg. Co.** Manufacturer of Bean and Beet Tools  
Oxnard, California

Southern California Distributor:  
E. P. Bosbyshell & Co.  
125 North Los Angeles St., Los Angeles.  
Northern California Distributor:  
The Pacific Implement Co.  
131-153 Kansas St., San Francisco, Cal.

## SULPHUR



Fleur de  
Sulphur  
Anchor  
Brand  
Velvet  
Flowers of  
Sulphur  
and Eagle  
Brand.

Packed in barrels and double sacks are the fluffiest and purest Sulphur that money can buy; the best for vineyardists; the best for bleaching purposes. LEAVING NO ASH.

TRY OUR NEW BRAND OF VENTILATED SULPHUR. SUBLIMED 100 PER CENT PURE. FINE DRY DUSTING. SEND FOR ILLUSTRATED BROCHURE. ALSO PRICE LIST AND SAMPLES.

SAN FRANCISCO SULPHUR CO.,  
624 California Street, San Francisco, Cal.

## Order Your BEEMAN Garden and Orchard Tractor

Now

Price  
\$300

It will replace one horse

R. F. Davis, Disc and Cultivator  
Immediate deliveries. 1918 deliveries limited.  
Some Territory Still Open for Dealers

**Owen Magnetic Sales Corp.**  
118 West Pico Street  
Los Angeles, Cal.

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**F. T. Briles, S. Cal. Distributor**

214-216 No. Los Angeles St., Los Angeles, Cal.  
Branch House—110 Main St. Porterville, Cal.



Raspberries, cr. ....1.75@2.00  
 Gooseberries, lb. ....5@10  
 Logan, ch. ....9.00@12.00  
 Cantaloupes—Standard, cr. ....4.00@5.00  
 Cherries—Drawer, 1.00@1.50; loose, lb.  
 white, 5@8; black, 8@12½; Royal Anne,  
 8@11.  
 Currants, dr. ....1.00@1.15  
 Figs, bx. ....2.50@3.00  
 Peaches, cr. ....2.00@2.25  
 Pineapples, doz. ....5.00@6.00  
 Lemons, bx., according to size: fy,  
 6.00@7.50; lemonettes, 3.50@5.00; grape-  
 fruit, fy., 1.50@3.00; ch., 2.00@2.50. Or-  
 anges, bx.: Valencia, 6.00@6.50.

## DRIED FRUITS

(See Los Angeles markets.)

## HONEY

Jobbers' prices:  
 White extracted .....20@22  
 Light amber extracted .....15@18  
 Amber extracted .....10@11  
 Beeswax .....36@40

## BEANS

Jobbers' prices, cwt., recleaned:  
 Limas .....13.50@13.75  
 Bayous .....9.00@9.25  
 Small Whites .....Nominal  
 Large Whites .....Nominal  
 Mexican Reds .....9.00@9.25  
 Blackeyes .....8.25@8.40  
 Pinks .....7.75@7.90  
 Red Kidney .....12.50@13.00  
 Cranberry .....Nominal  
 Teparies .....10.25@10.50

## HAY

Fancy Wheat Hay  
 (light five wire bale) .....27.00@28.00  
 No. 1 Wheat or Wheat and  
 Oat Hay .....23.00@25.00  
 No. 2 Wheat or Wheat and  
 Oat Hay .....20.00@22.00  
 Choice Tame Oat Hay .....24.00@26.00  
 Other Tame Oat Hay .....21.00@23.00  
 Wild Oat Hay .....18.00@20.00  
 Barley Hay .....18.00@20.00  
 Alfalfa .....14.00@15.00  
 Stock Hay .....13.00@15.00  
 No. 1 Barley Straw, bale .....50@80

## GRAIN

As to grain and feed prices see note  
 under Los Angeles grain prices.

Wheat—Government prices: Common  
 white hard, base price, \$3.50 per cental,  
 or \$2.10 per bushel of 60 pounds deliver-  
 ed in terminal warehouses in bulk; soft  
 white, base prices, two cents per bushel  
 less, or \$2.08 per bushel; white club (in-  
 cluding Sonora), \$2.00 per bushel. If  
 wheat, after cleaning, weighs 60 pounds  
 or more to bushel, base price stands; if  
 58 to 60 pounds to bushel, three cents per  
 bushel reduction; if 56 to 57 pounds six  
 cents per bushel less; if less than 56  
 pounds, grain becomes sample grain and  
 sells on its merits up to within one cent  
 per bushel of 56-pound wheat. Addi-  
 tional charge made for sacks.

## SEEDS

Prices in round lots, lb.:  
 Millet, recleaned .....5@5½  
 Alfalfa, lb. ....20@21  
 Flax .....7@7½  
 Hemp .....5@5½  
 Rape .....2½@3

## Citrus Fruit Market

Los Angeles, June 5, 1918.

Some dealers have ceased to handle  
 Valencia owing to the high price, but  
 the limited supply will doubtless hold  
 prices up. Southern strawberries are  
 filling the market and even Georgia  
 peaches are becoming something of a  
 factor. California cantaloupes are also  
 coming through and are selling around  
 \$3.00 to \$5.00.

Lemons seem to be on a speculative  
 basis and are commanding exceptionally  
 long prices.

## Shipments

Shipments of citrus fruits to date since  
 November 1, 1917: Southern California;  
 oranges 10,390, lemons 3116, total 13,506.  
 To same date last season: oranges 27,153,  
 lemons 4824, total 31,977. Central Cali-  
 fornia this season: oranges 2512, lemons  
 115, total 2627. Last season to same  
 date: oranges 4094, lemons 164, total  
 4258. Northern California; oranges 203,  
 last year same date, 845.

## AT THE AUCTIONS

May 29  
 New York: 14 oranges, 1 lem. Val.  
 5.00-7.80, Sweets 6.20-6.90, Grapefruit  
 1.20-1.45, lem. 6.65-7.60, Mikes halves,  
 2.90-3.50.  
 St. Louis: 2 cars. Val. 4.55-6.80,  
 Seeds 5.80, lem. 4.25-8.90.

May 31  
 New York: 13 oranges, 3 lem. higher.  
 Val. 4.60-8.70, lem. 5.35-7.30.  
 Boston: 10 cars. Val. 4.15-7.90,  
 Sweets 6.20-6.85, Grapefruit 1.50-2.00, lem.  
 6.65-7.17.  
 Cleveland: 5 cars. Val. 5.25-7.15,  
 Sweets 6.60-7.00, lem. 9.45-10.45.  
 Philadelphia: 3 cars. Val. 5.80-7.45.  
 St. Louis: 2 cars. Val. 6.25-7.65, lem.  
 7.20-9.00.

June 3  
 New York: 29 oranges, 2 lem. Val.  
 4.45-8.15, lem. 6.75-8.90, Grapefruit 2.85-  
 3.40, Mikes 6.40-7.00, Sweets 5.30-6.15.  
 Pittsburgh: 6 cars. Val. 5.60-6.85, lem.  
 5.50-9.00, Sweets 2.95-5.40, Mikes 7.60,  
 Grapefruit 1.10-1.60.  
 Boston: 16 cars. Val. 4.50-7.80, lem.  
 7.25-8.25.  
 St. Louis: 2 cars lem. 1 Val. Val.  
 4.75-7.20, lem. 8.75-9.25.

PARTIAL LIST OF CALIFORNIA  
FRUIT AND VEGETABLE  
SHIPMENTS

From post card reports to the bureau  
 of markets, United States department of  
 agriculture, Miss Hoey makes report of  
 the following shipment of cars of pro-  
 ducts from California for the week end-  
 ing May 27: Artichokes, 3; asparagus,

7; beans, 14; cabbage, 48; cantaloupes,  
 29; cherries, 28; dried apricots, 1; dried  
 figs, 2; dried peaches, 3; dried prunes, 7;  
 fresh peaches, 1; fresh peas, 2; green  
 string beans, 4; lettuce, 19; mixed fruit,  
 17; mixed vegetables, 65; mixed fruit and  
 vegetables, 3; mixed dried fruit, 2;  
 onions, 76; potatoes, 37; raisins, 18;  
 strawberries, 9; tomatoes, 12.

## WEEKLY REVIEW

Receipts of old potatoes are slowing  
 up. The gain in the volume of new far  
 more than offsets the decline. The move-  
 ment of potatoes amounts to more than  
 300 cars daily. The last week's receipts  
 of new stock were 2226 cars, or a total of  
 3100 cars. Maine and other Eastern po-  
 tato centers are shipping more freely  
 than a year ago this date. At North-  
 western shipping points potatoes are  
 ranging around 80 and 90 cents for sack-  
 ed stuff.

Florida cantaloupes are selling around  
 \$3.00 and \$4.00 in New York and Chicago.  
 California green meats range from \$7.00  
 to \$10.00 in standard crates.

Nearly 1100 cars of strawberries have  
 been shipped during the past week. This  
 is a material falling off, the preceding  
 week having been 1936 cars. Atlantic  
 Coast prices have ranged around \$3.00  
 to \$4.50 per 32 quart crates.

Texas is approaching the end of its  
 onion shipping season. Much inferior  
 stock has been offered. The volume of  
 movement is 40 per cent under that of  
 last year. Total movement is 3672 cars.  
 Old onions practically out of the market.

California cabbage has ranged around  
 \$2.00 and \$2.25 in Minneapolis and St.  
 Paul. Eastern markets supplied by Vir-  
 ginia and other southern sections.

Potatoes are ranging around \$4.50 to  
 \$6.00 per barrel in most Eastern markets.

## CLAREMONT POMOLOGICAL

The Claremont Pomological Club  
 was organized in 1802 and is still do-  
 ing business at the old stand. Occas-  
 ionally it breaks away to a new  
 "stand," as was the case on a recent  
 Saturday when the regular May meet-  
 ing was held at the home of V. V.  
 Leroy, Los Angeles. The interest in  
 the transactions of this club was  
 shown by the number which drove in  
 from Claremont and near-by sections  
 to attend this meeting at the home of  
 the secretary who has moved from  
 Claremont where he lived for years.  
 Eighty-three people sat about the  
 "board" and partook of the repast.

Preceding and following the feast  
 was a program which will make more  
 thinking growers and producers of  
 larger crops. The most striking event  
 of the meeting was the address by Dr.  
 C. B. Lipman of the state university  
 because of the novel, almost startling,  
 propositions advanced by him. Dr.  
 Lipman has been making investiga-  
 tions as to soil fertility, and his de-  
 terminations are at wide variance  
 from ordinarily accepted beliefs. It  
 is not for the layman to explain, and  
 we hope to have from Dr. Lipman an  
 outline of his work. In a word, it up-  
 sets completely the theory of spoon-  
 ing out or giving a dose of a chemical  
 which will increase the plant growth,  
 but makes a laboratory of the soil  
 wherein the desired elements are  
 manufactured through the use of  
 stable manures or decaying vegetable  
 matter.

Others making addresses were  
 Messrs. Jas. D. Culbertson and C. C.  
 Chapman, with A. Rae Condit adding  
 interest to the program.

The officers elected for the coming  
 year are: President, C. E. Needham,  
 vice president, E. W. Olds; treasurer,  
 W. O. Fritz; and secretary, V. V.  
 Leroy.

## POTATO INSPECTION

In order to save all possible freight  
 car space a federal inspector will ex-  
 amine all potatoes billed out of Cali-  
 fornia to Seattle or other Northwest  
 points. Formerly all shipments of po-  
 tatoes offered were carried to the  
 Northwest, and if they got by the in-  
 spectors at that end, well and good;  
 if not, the car was held pending order  
 from the shipper, or destroyed as he  
 might direct. This meant serious loss  
 in the use of transportation facilities  
 without adding to the food supply.  
 The inspector will be located at Stock-  
 ton. Tuber moth is the pest feared by  
 the Northern states.

Stockton will ship about 400 cars of  
 onions, largely into the San Fran-  
 cisco market. In fact, the new crop  
 Reds now arriving in San Francisco  
 in boxes and small sack shipments are  
 being stored. There are about 12,000  
 sacks of old stock under refrigeration.  
 Fancy Australian Brown stock is now  
 sold as low as 75 cents.

The order restraining shipments of  
 white beans from California has been  
 rescinded. The notice lifting the em-  
 bargo referred to the fact that 30,000-  
 600 pounds of California white beans,  
 which were necessary for the needs of  
 the war department, have been se-  
 cured.

Raise a freight-saving, year-around  
 garden.

The Choice of  
Those Who Know

Manufacturers and leading mo-  
 tor car distributors recommend  
**ZEROLENE**. The majority of  
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**ZEROLENE** reduces wear and  
 gives more power because it  
 keeps its lubricating body at  
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 bon because, being refined from  
 selected California asphalt-base  
 crude, it burns clean and goes  
 out with exhaust.

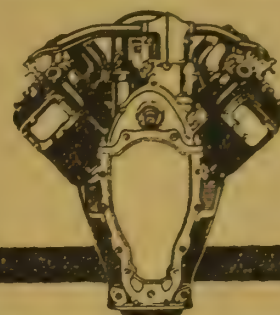
**ZEROLENE** is the correct oil  
 for all types of automobile en-  
 gines. It is the correct oil for  
 your automobile. Get our lubri-  
 cation chart showing the cor-  
 rect consistency for your car.

At dealers everywhere and  
 Standard Oil Service Stations.  
**STANDARD OIL COMPANY**  
 (California)

**ZEROLENE**  
 The Standard Oil for Motor Cars

Correct Lubrication for the  
"V"-Type Engine

This, the "V"-Type of au-  
 tomobile engine, like all internal  
 combustion engines, requires  
 an oil that holds its lubricating  
 qualities at cylinder heat, burns  
 clean in the combustion cham-  
 bers and goes out with exhaust.  
 Zerolene fills these require-  
 ments perfectly, because it is  
 correctly refined from selected  
 California asphalt-base crude.



## FOR VACATION OR WEEK-END TRIP → WHEELERS ←

WHEELERS GOLD SPRINGS—ELEVATION 3970 FT., LOCATED IN THE DESPER RIVER WHERE  
 FISHERMEN ALWAYS GET THE LIMIT OF TROUT.

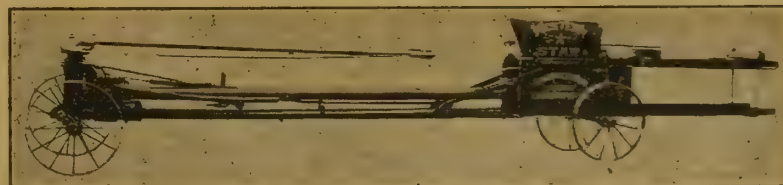
WHEELERS HOT SPRINGS—ELEVATION 1560 FT., LOCATED ON THE  
 BANKS OF A BEAUTIFUL MOUNTAIN  
 STREAM—HIGH ABOVE THE FOGS.

SUNDAY CHICKEN  
 DINNERS \$1.25

Map showing route from Los Angeles to Wheelers Hot Springs via Ventura, Santa Barbara, Fillmore, Pismo, Escondido, San Fernando, Chatsworth, Moorpark, Santa Paula, Northridge, Oxnard, Compton, Calabasas, Van Nuys, Hollywood, Pasadena, Monrovia, Covina, Pomona, Fullerton, Anaheim, Santa Ana, Long Beach, Redondo, and Venice.

4 Hour drive over  
 90 Miles of Good Roads from L. A. to  
 WHEELERS HOT SPRINGS  
 ALL YEAR ROUND  
 VENTURA COUNTY, CAL.  
 W. W. WILCOX, MGR.

**HOTEL-HOUSE KEEPING AND CAMP ACCOMMODATIONS**



**Make Quick Money** operating the quick set, fast haling, low priced WESTERN STAR  
 HAY PRESS, made in California. Light draft, big capacity, low  
 step. Only baler made offering special non-binding head block feature for side hill sets. Over 600 in use in  
 Southern California. Complete line heavy and light presses, horse, tractor and engine power. Did you ever  
 hear of a power baler for \$800? We have it. L. M. DAVENPORT CO., MFGRS., 110-112 NORTH LOS  
 ANGELES STREET, LOS ANGELES.

## ALFALFA LAND FOR DAIRYING

Also first-class Orchard, Bean and Sugar Beet land. Twenty acres and up with  
 easy terms of payment.

**BRENTWOOD IRRIGATED FARMS,** In Contra Costa Co., 63 Miles from San Francisco  
 For Price and Descriptive Matter Address

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Screw  
 Casing  
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## HORSE-SHOE-TIRES

DEALERS EVERYWHERE

Guaranteed for 5000 MILES  
 Pacific Rubber Co. Los Angeles



## Don't Pay for Ice



### ICELESS

Get a Stephenson patent COOLER and have your eatables fresh at all times.

NO ICE REQUIRED  
TEMPERATURE LOW.

Made in two regular sizes. (Special sizes made to order.)

Write today for prices and particulars to

L. ANDERSON CO., MFRS., Martinez, Cal.

## FRENCHGLOSS

### Is a Finishing Article for Home Use

It is used either with Starch or by itself for soft finish garments.

Its use gives all garments a smooth, pliable, lustrous wearing finish, that will keep fresh and clean from one-third to one-half longer than garments laundered without it.

You will find your ironing much easier and more satisfactory in every way when using FRENCHGLOSS. When used for starched garments you can save three-fourths of the amount of starch ordinarily used, besides having better looking clothes.

You will also find that when garments have once been laundered with FRENCHGLOSS they wash much easier. The reason for this is that FRENCHGLOSS keeps dirt from working into the garments. If you boil your clothes, try dropping a couple of FRENCHGLOSS tablets in the boiler. It will surprise you the good it does.

FRENCHGLOSS is sold on a money-back offer; if not pleased with results your grocer will return your money. Price, 10 cents for a package large enough for six large family washings. By mail, if your grocer does not keep it.

FRENCHGLOSS CO.

1157 E. 12th St.

Oakland, Cal.

## Household Department

### BLACK FRIDAY

Each Friday morning, sharp at eight,  
He watches at the garden gate—  
Our big black cat, so straight and grim  
He minds us, when we look at him,  
Of those tall andirons that grace  
With beauty stern our chimney-place.

As punctual as any clock  
We see him marching down the walk;  
Out to the gate, with footsteps spry  
And long before we hear the cry  
Of "Fish! Fresh fish!" upon the air  
We see Black Friday stationed there.

The reason why, you ask perhaps,  
He thus waits there. 'Tis for the scraps  
Of nice sweet fish saved up for him  
By our fishmonger, jolly Jim;  
Oh, is not ours a favored cat  
To have so kind a friend as that?

No other day does Friday wait  
Out there beside the garden gate.  
How keeps he tally of the day  
That Jim the fishman comes our way?  
Perhaps upon his ebon toes  
He counts the passing days, who knows?

Some method of arithmetic  
Is surely his—some mental trick  
By which the time he calculates  
And sits so patiently and waits  
The day for which he's named, you know—  
A name we think quite apropos.

—Louella C. Poole in Dumb Animals.

### BRING UP THE RESERVES

By Katherine Wicker, United States  
Food Administration

**A**S THIS is being written the world of safety and freedom is at death grips with the enemy. Stern, terrible facts are driving us to action; now the best qualities of the race and breed are seen; whatever happens we shall not fail—to the trumpet call of battle America is rising like a winged Victory.

In this great hour it is necessary that all women live greatly. At the battle front they have performed prodigies of valor and have been decorated with the cross of war for heroism under fire. You, too, would like to drive an ambulance and bring out the wounded under shell fire; but the work behind the lines is even more important. It is not the single act of heroism that will win the fight, but the steady sticking to the job.

Do not be confused; let nothing turn you aside. It is not a new task that you are called to, but the age-old task of feeding the family. Like the tribal women of old, we have sent forth our men-children to war, and we must take up the great first task of feeding for the family. But unlike that tribal woman whose horizon was bounded by the tribal hunting ground, our horizon is the world. Our family, that must be fed, is made up of great nations whose armies, united under a single leader, are facing the enemy. For those women who have eyes to see this is the coming back into a lost kingdom.

This years campaign is a struggle of reserve against reserve; America is the last reserve; in overwhelming numbers our forces are being moved to the front; and behind the lines the women are asked to bring up their last reserves of energy and intelligence in the practical carrying out of food orders.

The food situation must steadily degenerate as long as the war lasts. It is therefore of prime importance to add every item to the total production. No woman with a foot of growing space at her disposal can afford to be merely a destroyer of rations, a dependent on the food supplies of a starving world.

The Allied nations look to America for food. One object of the food administration is to bring as much food as possible under control and distribute these supplies where they are most needed. America is today the careful guardian of the needs of the world. As the food administration anxiously counts the dwindling bushels of wheat, it asks of every woman, "To what extent can you make your home independent of this common store?"

To make the home as independent as possible of the common food pool from which the hungry world must be fed is woman's great task. This one thing you must do; drop every mortal thing and "carry on."

The real work of woman since we entered the war has been conservation. We must hold every position we took last year and go forward to new ground this year. A food survey to determine the year's needs will help. Back up your gardening plan with a cellar and pantry plan.

How many potatoes and how many beans will you need? How many jars of tomatoes and how many of

peaches? Sit down with pencil and paper and make a definite plan, remembering that every woman's real war work is to make the home pantry as independent as possible of the world pantry. Take stock of what you need during the winter and of what you have left on hand. Make an estimate of your grocery orders for the past winter and plan this year to reduce these to a minimum by substituting your own products. For instance for sugar, substitute sorghum syrup and honey if they are available; for candy, homemade crystallized fruits and fruit pastes; for tropical fruits, native fruits; for Brazil nuts, walnuts and hickory nuts; for canned meats, home canned meats; for shipped breadstuffs, neighborhood meals and flours.

To sum it all up — stop eating freight. Transportation is the greatest problem of the war and shipping space the most precious thing in all the world. Above all, don't eat from the pantry of the hungry allies. With a little planning and much hard work you can fill your own pantry with home grown foods.

Before giving up this survey exhaust all home resources, then extend your survey to the neighborhood in a five, ten or 15 mile circuit, according to circumstances, and plan to eat home products.

Last fall one woman who made a survey of a five mile circuit found she could get corn meal, buckwheat, and whole wheat flour from a neighboring mill. She canvassed the farmers and contracted for a winter supply of chickens, ducks, turkeys, guineas, and rabbits, a small quantity of bacon and sausage, and even fresh fish. When neighboring farmers killed a beef she bought a quarter, treated the family to fresh beef and canned and corned the rest. The sugar supply of her family of six she cut down to ten pounds a month and pieced out this allowance with neighborhood sorghum and honey.

During the winter her only call on the overburdened railroad was for a little sugar, coffee, vegetable fats, and seasonings. This was practical conservation. She relieved the railroads of useless transportation, saved the labor of many hands, developed the resources of her own community, and fed her family better than usual.

Patriotism, let us remember, is not the fanfare of trumpets nor the high sound of noble words, but the steady day-by-day work that springs from intelligent insight and a lofty spirit.



Here's a regular, bang-up, man-fashioned over-all that takes to rough play like a duck to water. Easy-breezy, loose-cut overalls that stand for rough treatment—and, like Oliver Twist, come back for more.

Tell mother to get you Boss of the Road Overalls—the kind dad wears. Tell her we make 'em of the toughest, fast-color denim; double-stitched, can't-rip seams; hold-fast, patent buttons; roomy, swinging pockets; reinforced at all points where lively youngsters' clothes first show trouble.

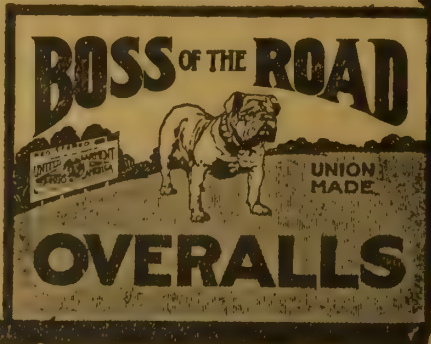
San Francisco

NEUSTADTER BROS.

Portland

Buy them from your local dealer—he will gladly show you what we mean by swinging pockets.

Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today.



### TO THE POTATO

Written for California Cultivator  
By Ida M. Mowry

O, you dear old spud,  
I love you very dearly  
With your hide incased in mud,  
Which washes off so clearly.

Three times a day I meet you.  
I know you every time.  
With a knowing wink I greet you,  
And with Hoover fall in line.

Every day we eat you,  
Mashed, boiled or fried,  
In a salad or in a stew,  
No matter where you hide.

Potatoes on the table,  
Potatoes everywhere,  
Raise them while we're able,  
And help to win the war.

Irish stew and chicken,  
Scotch and Southern bread,  
Oat meal, too, no kickin'  
For Hoover is at the head.

Potatoes reign as king,  
Let's eat 'em, you and me,  
Then soon we all can sing,  
'Rah, 'rah, for Victory.

Plant 'em, raise 'em, eat 'em,  
Eat 'em every meal,  
'T will help the war to win,  
And make the kaiser squeal.  
—Yours for Victory—"Soldier of the Soil."

### Egg Potato Hash

Chop cold boiled potatoes, one medium sized, one to a person. Boil half as many eggs, as you use potatoes. When hard, mince fine. Place one tablespoon of fat in skillet, add sufficient milk to moisten potatoes well, add potatoes and seasoning, boil till milk is taken up by potatoes. Set back on stove, add eggs, stir with fork. Line dish with lettuce leaves, place potatoes in dish; add minced onion sprinkled over top. A nice toothsome lunch dish.

### Hot Potato Salad

Boil potatoes in jackets till tender, sufficient in number for persons to be served. Peel and mash, add seasoning and cream or milk, beat well. Stir in one or two onions minced fine, place dots of butter over top and serve.

### Cream Potato Gravy

Make cream gravy by usual recipe, then add half cup strained cooked tomato, and half a cup seasoned mashed potato. Serve hot.



## The Cultivator Patterns



8873—Ladies' Corset Cover. Cut in sizes 38, 38, 40, 42 and 44 inches bust measure. The corset cover fastens on each shoulder by means of a tab which buttons over on the front.

8880—Girls' Jumper Dress. Cut in sizes 2, 4, 6, 8 and 10 years. The one-piece skirt with straight lower edge is gathered to the short-waisted jumper.

8859—Boys' Blouse. Cut in sizes 6, 8, 10, 12 and 14 years. The blouse has a simple hem closing at center front.

8640—Ladies' House Dress. Cut in sizes 36, 38, 40, 42, 44 and 46 inches bust measure. The waist is in shirtwaist style, and the skirt has three gores.

8862—Ladies' One Piece Apron. Cut in sizes 36, 40 and 44 inches bust measure. The neck of the apron is cut square at the front, and wide straps are joined at the shoulders.

8854—Boys' Dutch Suit. Cut in sizes 2, 4, 6 and 8 years. The straight trousers are buttoned all around to the waist.

8633—Ladies' Two Gored Plaited Skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. The pleating begins at the side seams and it is shorter at the back.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

### HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT

California Cultivator  
Los Angeles

## WHEATLESS BREAD, CAKE AND PIE

Recipes for bread, cake and pie made without wheat flour are published by the Sperry Flour Company as supplement No. 3 of the Sperry Cook Book. This may be secured free by writing the Sperry Flour Company, San Francisco. The following pointers on making bread without wheat flour will be extremely valuable. They are taken from this supplement.

### Pointers Concerning Wheatless Breads

In handling doughs and forming into loaves, sprinkle the board and dough with barley flour thus keeping it from sticking. Care should be taken not to make the doughs too stiff.

Bake the bread in pans turned upside down on a piece of tin or the bottom of a large pan. This enables one to make a loaf with a soft crust, and insures a more thorough baking. Use about one and one-half times the usual amount of dough in the pan.

Wheatless breads are best when more than 12 hours old. Cut into thin slices for toast.

Do not expect a light loaf of bread from substitutes. Thus far it is not possible. The loaf will be small and have close texture, but if carefully made, it is nourishing and wholesome.

Do not permit yeast action to continue long as the bread will get sour. Substitutes require no softening of the dough as is necessary with wheat flour.

Using substitutes requires more careful work than does wheat flour, but the wheat saved thereby makes the effort well worth while.

### Wheatless Bread No. 1

One cup cooked and mashed potatoes, one cup milk (lukewarm) one cup water (lukewarm) one yeast cake, two tablespoons sugar, one tablespoon salt, three cups barley flour, one cup corn starch, one cup white Egyptian corn flour.

Dissolve the yeast cake in the lukewarm milk and water, add the sugar and salt, then add barley flour, corn starch and white Egyptian corn flour. Allow this to stand about 20 minutes, then add: Two eggs, one tablespoon baking powder, sufficient barley flour to make a medium stiff dough.

Form into loaves, proof as large as possible, turn upside down on a tin sheet and bake in moderately hot oven 50 minutes to one hour. Slice thin for toast.

### Wheatless Bread No. 2

Two cups flour, one-half cup corn starch, one-third cup White Egyptian corn flour, one cup milk and water (lukewarm) one tablespoon sugar one-half teaspoon salt, one tablespoon shortening, one egg, one yeast cake.

Dissolve the yeast in the lukewarm milk and water, add sugar, salt and egg, then add flours and corn starch, lastly add shortening. Sprinkle well with barley flour on the bread board, fold together and form into loaves. Proof and bake as for Wheatless Bread No. 1. Slice thin for toast.

### Corn Bread and Muffins

One and one-quarter cups yellow corn meal, one-half cup barley flour, one tablespoon baking powder, one-half teaspoon salt, two tablespoons shortening, two tablespoons sugar, one egg (omit if desired) use a little milk instead, one and one-quarter cups milk.

All materials for use in cooking should be measured by level spoon or cup. All dry materials should be sifted before being measured.

Measure the corn meal and barley flour into the mixing bowl, add the baking powder. Make a well and place therein the sugar, egg and salt, add the milk and lastly melted shortening. Spoon into well greased muffin pans and bake in a moderately hot oven.

### HOMINY

Hominy may be used instead wherever a recipe says macaroni, spaghetti or vermicelli.

Use hominy in making muffins and quick breads.

Use hominy as a vegetable for dinner and serve no bread.

### Scalloped with Cheese

Arrange alternate layers of boiled coarse hominy and grated cheese. Pour over all a cup of white sauce, made with corn starch, and bake for 30 minutes. Cooked fish or meat may be used instead of cheese.

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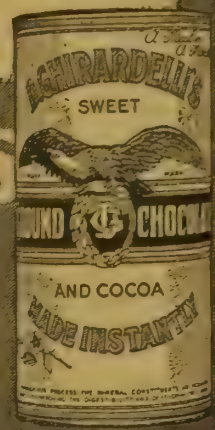
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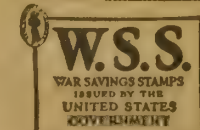
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## The U. C. Poultry School

Written for California Cultivator By Jean A. Koethen



IF ALL the help the agricultural department of the University of California stands ready to extend to farmers and poultry specialists none is more to the point than the school of poultry husbandry which is held in Southern California during each spring vacation by Professor Dougherty. This school was held one year in Riverside and another in Pomona. Last year, just at the beginning of our big June hot wave it met in Van Nuys and was well attended in spite of the heat. This year both time and place were auspicious, for Gardena in the middle of May is an ideal spot, and each day's attendance ran from one to two hundred.

In giving these lectures Professor Dougherty has but one aim—to help poultry producers increase the efficiency of their flocks. To this end there must be more economical feeding, more intelligent culling out of non-producers, a more persistent effort to "breed up," less loss in raising young stock.

One of the most interesting sessions was that in which culling and breeding were discussed. Culling must of necessity precede breeding, for there can be no improvement unless the best layers and most vigorous birds are used as breeders. Constant selection and breeding within your own flock will in time build up a prolific strain without bringing in outside blood if correct principles of selection are employed.

The high producer is of a definite type. As a rule her comb and wattles are large—for her breed, for there is a distinct correlation between size of head appendages and egg production. She must not be too small, but must be as large as she can be without requiring extra food for body maintenance. The more nearly her body, exclusive of head and tail, approaches a parallelogram, the more likely is she to be a high producer. She is a nervous, alert, and always vigorous bird, always a large eater, and her toenails are apt to be worn off by much scratching.

Professor Dougherty laid down these rules for breeding:

Select for vigor.

Breed from good-sized hens, not from pullets.

Breed from the best layers and then line breed.

Breed from late molters.

Breed from sons of high producers.

If a high producing hen is mated to the son of a low producer, the male offspring will inherit from their mothers, the females from their sire. When the males from this mating are mated to the best hens in the flock we may expect in their daughters better layers than the mothers. The daughters of high producing hens are likely to average lower than their mothers, but there will be some exceptional birds. Mating these exceptional birds to the sons of high producers gives a foundation for the high producing strain we are looking for.

At the University Farm hens are culled in July, August or September according to color of shanks and vent, condition of toe nails, color of comb and earlobes and condition of plumage. This is on the principle that the best layers will be shabby in plumage and dull in coloring, while the poor layers will have already molted.

Tuesday afternoon the subject of war rations was discussed, the main point brought out being that we must use what we have but balance the ration. Until recently the dry mash used at Davis consisted of five pounds each of bran, shorts and ground barley; two pounds soy bean meal; three pounds beef scrap; one-half pound charcoal; one-tenth pound salt. This was really a war ration, for there was no wheat in the scratch feed and no corn meal in the mash, but it has now been reduced to a mixture of ground milo and barley, with cocoanut meal instead of soy bean meal. The proportion of beef scrap remains unchanged, for experiments have proved that a mash must contain about seven per cent of some animal meal to secure the best results. A combination of seven per cent beef scrap and 15 per cent linseed or soy bean meal was found to be excellent. Green feed, and cooked vegetables, are very important in helping out the ration. A hen should have all the greens she can consume, not a little once a day.

On Thursday the members of the Gardena Poultry Association acted as hosts to the visitors and served a delicious lunch in the dining room of the high school. To say that their hospitality was appreciated is putting it mildly, for the Gardena women are wonderful cooks, and two hours of lectures, following the ride in the morning fog, had given their guests appetites adequate to the spread.

## Rabbits in Summer

Written for California Cultivator By H. E. Gibson



RABBITS are easily affected by heat, and beginners in the business often lose heavily by not knowing this fact. The writer has known of breeders losing their whole stock in a single day on account of the heat.

In the first place, one should have a good thermometer, and during the extra hot weather watch it carefully, and when the mercury runs up to 95 or 100 degrees Fahrenheit, look after your rabbit stock. There are many little ways in which you can relieve them when suffering with heat, and you must study and think out some plans for yourself which you can adopt to your own particular situation. However, I can offer a few suggestions.

**Shade**

Be sure and locate your hutches in

the shade, under a large tree, or in the shade of a building, or if that is impossible, make some artificial shade to protect your hutches from the direct rays of the sun. Plant vines and have them cover a rough fence of some kind on the south and west side of your hutches, or erect some simple shade covered with canvass or old rugs or anything you may happen to have around that will break the intense heat. Of course, if you can possibly afford it, the best thing to do is to have a double roof 18 inches or more higher than the roof of the hutches. See that they have plenty of fresh air and a bowl of clean, fresh water in their hutches all the time.

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is an underground hutch, but for most countries in the temperate zone we believe, if it can be arranged, the rabbits should be on the ground, and if the ground is sprinkled freely with cold water there will be very little trouble on account of the heat. Of course, one must be careful not to make the ground under the rabbits too wet, as they may catch cold. Put wire netting on the ground so they cannot burrow out of their hutch. The rabbit is primarily a ground animal and will do better on the ground than anywhere, especially the large, heavy variety.

A wet sack put into the hutch will be a great relief to your rabbits suffering with heat. Sometimes during the hottest part of the day you may turn the hose or sprinkler over the hutches and all around them, which will at once bring relief.

### TARIFF CONFERENCE OF POULTRY MEN

The United States Tariff Commission will hold a conference of poultry interests in San Francisco at chamber of commerce rooms on June 25 to discuss with producers, dealers and importers vital questions affecting their business. The information secured by this commission will be placed before congress when it takes up tariff legislation. The commission is out after information on the following lines:

Poultry and egg production in Pacific states: Chief producing regions, their relative importance, poultry and egg production as a regular business in Petaluma distinguished from the by-product character of production that is more general in other sections.

Present condition of the industry and developments since the tariff act of October 3, 1913.

The egg trade of the Pacific states and especially of California—the competitive conditions, distribution, trade channels, markets, prices and the seasonal movement.

Imports: Reason for, character of, and future outlook. Proportion of the imports of shell eggs as well as of the egg products (dried and frozen eggs, egg yolk, egg albumen) that is consumed in California and the proportion shipped East.

Foreign and especially Chinese competition: Character of the competition; probable post-war conditions insofar as this competition is concerned.

Do imported egg products (dried and frozen eggs, yolk of eggs, dried and frozen egg albumen) come into competition with eggs produced on the Coast—in price, quality and uses?

Chinese shell eggs: Methods of preserving and shipping, losses in transit; uses of. To what grade of domestic eggs can they be compared, and are they used for the same purposes as domestic shell eggs?

Adequacy of egg production in California to requirements; the extent to which the state relies upon outside sources for egg supplies; the sources of such supplemental supplies.

Costs of operation in 1918 compared with 1913 and 1914: Land values, labor, feedstuffs and other items of cost specified.

The egg-breaking industry on the Pacific Coast — its status and prospects.

The manner in which words change their meaning has always been interesting. The word pacifist has reversed itself within the observation of a single generation. It now means habitual trouble maker.

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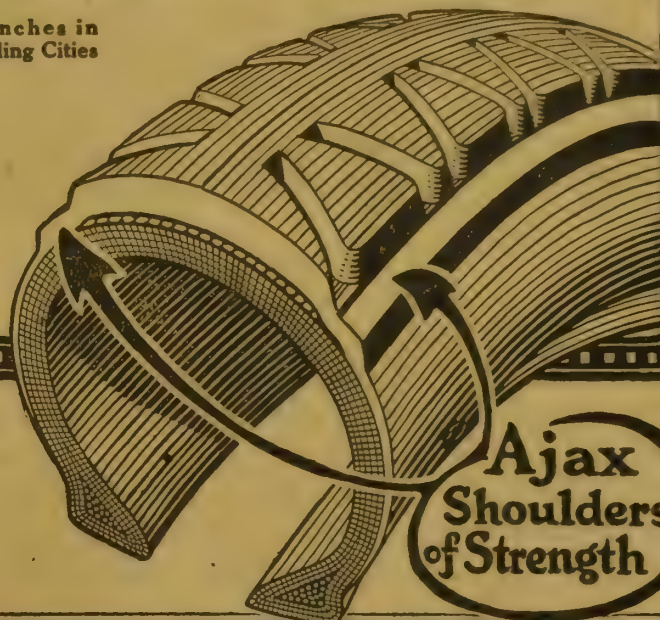
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# Spies and Lies

German agents are everywhere, eager to gather scraps of news about our men, our ships, our munitions. It is still possible to get such information through to Germany, where thousands of these fragments—often individually harmless—are patiently pieced together into a whole which spells death to American soldiers and danger to American homes.

But while the enemy is most industrious in trying to collect information, and his systems elaborate, he is *not* superhuman—indeed he is often very stupid, and would fail to get what he wants were it not deliberately handed to him by the carelessness of loyal Americans.

Do not discuss in public, or with strangers, any news of troop and transport movements, or bits of gossip as to our military preparations, which come into your possession.

Do not permit your friends in service to tell you—or write you—"inside" facts about where they are, what they are doing and seeing.

Do not become a tool of the Hun by passing on the malicious, disheartening rumors which he so eagerly sows. Remember he asks no better service than to have you spread his lies of disasters to our soldiers and sailors, gross scandals in the Red Cross, cruelties, neglect and wholesale executions in our camps, drunkenness and vice in the Expeditionary Force, and other tales certain to disturb American patriots and to bring anxiety and grief to American parents.

And do not wait until you catch someone putting a bomb under a factory. Report the man who spreads pessimistic stories, divulges—or seeks—confidential military information, cries for peace, or belittles our efforts to win the war.

Send the names of such persons, even if they are in uniform, to the Department of Justice, Washington. Give all the details you can, with names of witnesses if possible—show the Hun that we can beat him at his own game of collecting scattered information and putting it to work. The fact that you made the report will not become public.

You are in contact with the enemy *today*, just as truly as if you faced him across No Man's Land. In your hands are two powerful weapons with which to meet him—discretion and vigilance. *Use them.*

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# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

*Los Angeles*

*An Illustrated Weekly for the Rural Home and Ranch*

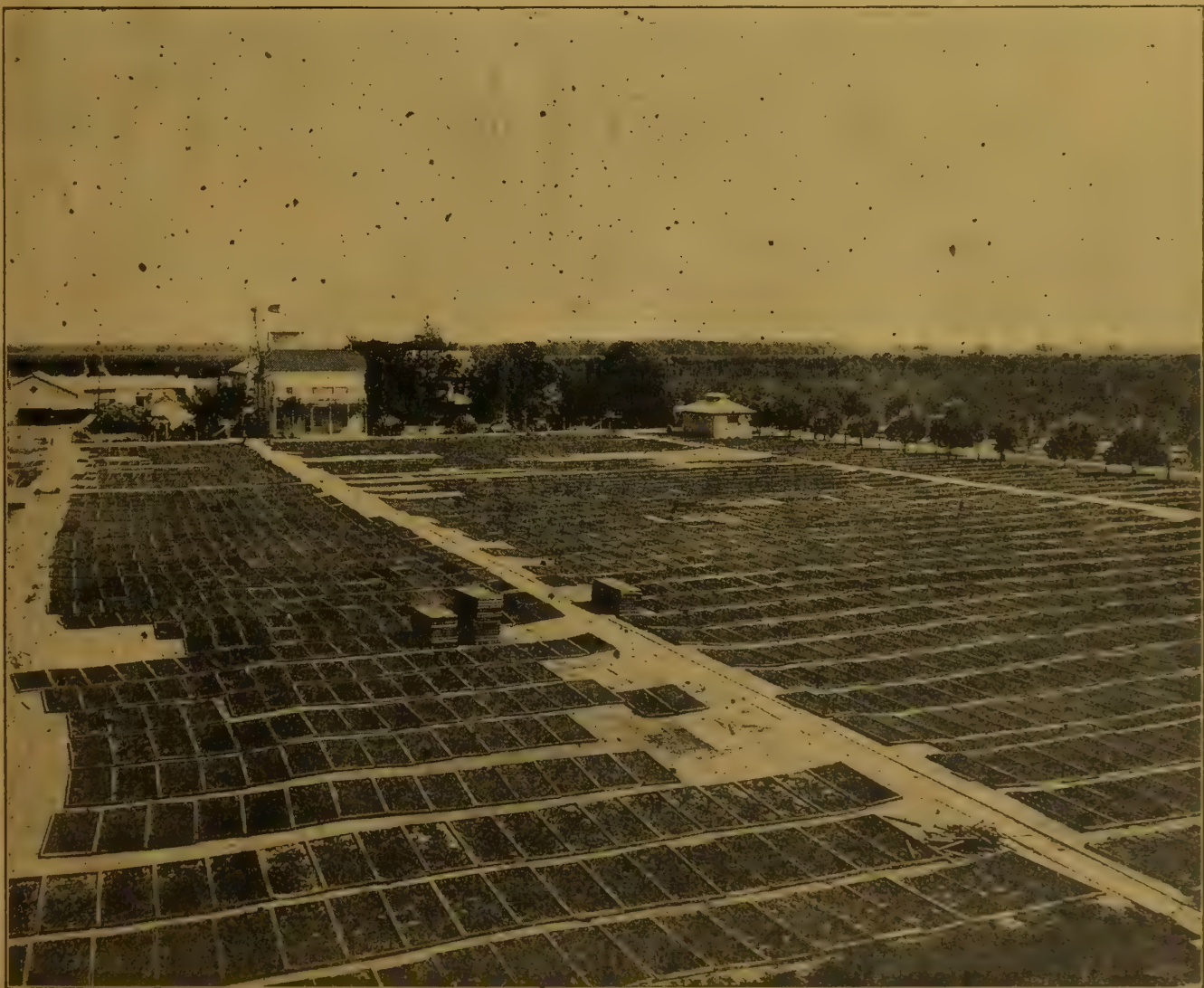
*San Francisco*

Vol. L.

June 15, 1918

No. 24

## Yolo Fruit Ranch Dry Yard



California's Cured Fruit Production, 1917: 157,500 Tons Raisins; 109,000 Prunes; 38,000 Peaches; 16,000 Apricots; 8,000 Each Apples, Figs; 341,000 Tons All Told.



# National War Savings Day June 28<sup>th</sup>

That's the day we sign up.

That's the day we tell Uncle Sam just how hard we want to win this war. That's the day our government has officially set for us to purchase War Savings Stamps.

On June 28th every man, woman and child in the United States will be called upon to pledge his or her full quota of War Savings Stamp purchases for 1918.

You will be expected to pledge the **full** amount that you can afford—no more—but by the same token, no less.

In every state, county, city, town and village the War Savings Committees are preparing for this big patriotic rally of June 28th. Unless you have already bought War Savings Stamps to the \$1,000 limit, get busy with paper and pencil and figure out the **utmost** you can do.

Remember this. You take no chances when you go the limit on War Savings Stamps. They are the best and safest investment in the world.

They pay you 4% interest compounded quarterly. They can't go below par. You can get back every dollar you put into War Savings Stamps **any time** you need it. You can turn them in at the Post Office **any time** for their full value plus interest.

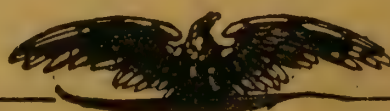
Uncle Sam is asking hundreds of thousands of men to give their lives to their country. He is asking you only to lend your money.

What are you lending?

## National War Savings Committee, Washington



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# California Cultivator

Published Weekly

Los Angeles: June 15, 1918

One Dollar Per Year

## Home Drying of Fruits and Vegetables



**T**HIS is not a learned or extended treatise. Here are only a few hints which may inspire to a bit more of saving, a bit more of efficiency, and much more to our prosperity as individuals. These hints are given by Prof. W. V. Cruess of the University of California. We

may call it "curing," "evaporating," "drying," "desiccating," or "dehydrating," or simply saving food; we are still rendering service in following out these pictorial hints. Dried fruit is hardly the equal of the canned, and certainly not of the fresh, product, but the greater economy, the greater ease of transportation, and the keeping quality make it a most desirable practice.

### Drying Vegetables

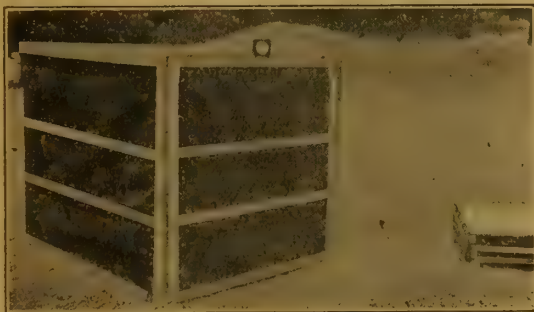
**1. Preparation of Vegetables.**—Shell peas; string and cut beans; peel and slice potatoes, carrots, beets, turnips, pumpkins, onions; cut tomatoes in half; husk corn; slice cauliflower and cabbage.



**2. Parboiling.**—Drying is facilitated by dipping in boiling water: pumpkin slices, three minutes; beans, onions, corn, cauliflower, five minutes; cabbage, ten minutes; potatoes, beets, turnips (before peeling) until nearly cooked.



**3. Sulphuring.**—With potatoes, carrots and turnips parboiling may be replaced by sulphuring. Place the prepared vegetables on trays, cover with a tight box under which sulphur is burning for 20 minutes. Peas, peppers, and most greens require neither parboiling nor sulphuring.



**4. Exposure to the sun.**—Place in a sunny place on the trays or on sheets of cloth or paper. Stir or turn once a day. Remove from sun as soon as thoroughly dry. They may also be dried on racks above the kitchen stove. Peas, string beans and spinach will have better color if dried in the shade.



**5. Sterilizing.**—Insect eggs may be deposited on the vegetables, especially in the open air. These can be destroyed by dipping the dried vegetables in boiling water for one minute or heating to 140 degrees Fahrenheit for about two minutes in an oven.



**6. Final drying.**—After sterilizing in boiling water the vegetables should be spread on trays again for a few hours until quite dry again. If insufficiently dry they will mold after packing.



**7. Packing.**—The dried vegetables must be protected from insects and moisture. They may be packed in cans or jars or in paper bags which are placed in boxes or cloth sacks. Examine 48 hours after packing for mold and re-dry if necessary.



### Drying Fruit

**1. Preparation of the fruit.**—Cut in two and pit peaches, apricots, and large plums; cut pears in two; peel and slice apples and quinces; small fruits are dried whole. Many fruits can be dried without further preparation but most are better in color, flavor, and keeping qualities if dipped or sulphured.



**2. Dipping**—French prunes and some grapes are dipped in a boiling solution of five ounces of lye to ten gallons of water for a few seconds and then rinsed. For sugar and Imperial prunes use less lye. Five ounces of lye per ten gallons is approximately two tablespoons per gallon.



**3. Sulphuring.**—The prepared fruit, placed on trays, is sulphured by covering with a tight box and burning sulphur. Apples require about 30 minutes, apricots and peaches three hours; pears and silver prunes a little longer. Dipped fruit does not require sulphuring; Adriatic figs and some grapes are sulphured.



Continued on Page 723



# Agricultural News Notes of the Pacific Coast

## Northern California

Sutter County has formed a woman's land army.

California is shipping a dozen or more cars of cherries daily.

Shasta County is using combined harvesters for the first time.

Cattle men of Mendocino County will meet at Willits June 17.

Roseville, Placer County, farmers are organizing fire fighting units.

Nevada County has its full quota of fire wardens and is fully organized.

Farmers near Roseville are discussing establishing rural telephone service.

Sam Britton of Marysville has been appointed food administrator for Yuba County.

The state employment bureau has opened an office in Redding to supply farm labor.

Sutter County peach growers have formed a canning peach pool through the farm bureau.

Cherry pickers in Green Valley, Solano County, who have been getting \$3.00 a day struck for \$4.00.

Sutter and Yuba County farm bureaus have asked for the closing of saloons during the harvest season.

Paradise, Butte County will have a cannery which Byron O. Clark has been working on for some weeks.

It is reported that the railroad commission is planning development of hydroelectric power along the Feather River.

Hop growers of Northern California, at a recent meeting in Sacramento, protested against prohibition legislation.

Horticultural Commissioner Norton of Sutter County is urging almond growers and others to make a fight on the red spider.

Napa County will prosecute all idlers as vagrants. It will make a clean up of loafers at cigar stores, saloons, and lodging houses.

Sutter County's output of cherries will prove a bumper crop and the long prices are enabling some growers to clean up \$2000 to \$3000 per acre.

El Dorado County farm bureau meetings: Coloma, June 17; Camino, 19; Goldhill, 21; North Side at Kelsey, 25; Placerville, 27; Union 28.

Employees in various Sacramento Valley canneries have taken the oath of allegiance to the United States, and declare they will remain loyal to their flag.

The Sacramento Women's Land Army has applications from more than 100 teachers of the public schools who are willing to do farm work during their summer vacation.

County Horticultural Commissioner Mills of Butte County, after investigating reports that pear blight was extensive in the Paradise region, says that he found little evidence of the disease.

Sutter County Basin Company has borrowed \$5,000,000 on 60,000 acres of Sutter Basin which will be used in reclaiming tule lands. The fees for recording this mortgage in Sutter County were \$40.

Trinity County, with a population of 3000, and not a moving picture within its boundaries, has sent 100 men to war, is producing more food than ever, trebled its \$18,000 Liberty Loan quota, and has a Red Cross chapter of over 1000 members.

## Central California

Rice planting has been completed in the Oakdale district.

Tulare County recently shipped one car of honey worth over \$14,000.

Pajaro Valley reports frost which caught some beans and potatoes.

An Oakdale wool grower recently took in one \$5000 truckload of wool.

Forty-five acres of grain near Modesto were destroyed by fire last week.

Corcoran, Kings County, is estimating a bale to the acre from her Egyptian cotton.

It is reported that more corn is being raised in the Great Valley than ever before.

Fred P. Roullard has been reappointed horticultural commissioner of Fresno County.

Kings County farm bureau has offer of 500 Los Angeles Y. M. C. A. boys for fruit harvest.

A new fruit packing house is being built at Sultana. It will be ready for handling the grape crop.

Cattle men are making protest against the proposed increased area of Sequoia National Park.

Tulare County farmers have complained of high cost of squirrel eradication, which is around \$1.20 per acre.

The California Peach Growers is building a number of packing houses which will be ready for the 1918 crop.

Every one operating a commercial fruit dryer or evaporator must secure license from the food administration at Washington.

County Horticultural Commissioner Beers of Merced County says that the county will have a grain crop fully equal to last year's.

Patterson, Stanislaus County, orchardists have employed women in thinning fruit in their orchards and find them much swifter.

The prevailing cool weather in the San Joaquin Valley has greatly increased the yield of grain. Harvesting is about to begin in the Chowchilla section.

Dried peach producers have met at various points in the valley during the last two days and discussed the matters of production cost and prices for the coming crop.

During the month of May the Stanislaus farm bureau cow testing association tested 1625 cows, 41 of which were placed on the honor role. The best averaged 1.47 pounds per day.

Santa Clara County Farmers Educational and Cooperative Union recently picnicked in Saratoga hills. Addresses were made by professors from University of California and representatives of the department of agriculture.

The state committee on farm labor is taking up the enforcing of anti-vagrancy laws with district attorneys, boards of supervisors, sheriffs, and chiefs of police throughout the state. The committee has also sent a man to the Mexican border to bring in labor.

A rancher in Sacramento County, living along the Cosumne River, reports damage amounting to several hundred dollars from a single ground squirrel who burrowed through the levee on one side of his ranch. Before the hole could be stopped the flood waters broke through, covering several acres already planted to grain.

## Southern California

The citrus experiment station contemplates a summer course in fumigation.

County Bee Inspector Pleasants of Orange County reports one-third of a normal crop.

Practically every section of Southern California has had its train service cut in two.

Burdette Raynor is the new manager of the Hemet-San Jacinto Growers Association.

Hemet, Riverside County, is constructing 18 buildings for housing laborers in the fruit harvest.

Valencia orange growers at Fillmore, Ventura County, have occasionally cleaned up \$6.00 per box.

The foggy and cloudy weather continuing so late has been disconcerting to hay makers who fear rain.

Orange growers of Rialto, San Bernardino County, recently met and discussed citrus culls and by-products factory.

The Hemet Canning Company has set a price of \$50 for Phillips Clings and Tuscans; \$35 for Muirs and Lovells; \$32 for Elbertas.

Riverside apricot growers are about ready for picking. The crop is slightly below normal. Cannerys are reported to be offering \$50 a ton.

Ventura County bean growers are concerned over inroads of aphids in bean fields. The cool moist season has favored their increase.

Potato growers of San Bernardino and Riverside Counties have organized a marketing organization and 120 acres are already signed up.

California Prune and Apricot Growers' Association announces that it will within a few days issue instructions on standardization of pack.

Bee men of San Bernardino County have fixed upon 21 cents as minimum price. That county's honey crop is estimated at 75 per cent of normal.

The busiest section in all California is the cantaloupe packing sheds of Brawley, Imperial County. The southland will ship \$3,000,000 worth of cants.

The horticultural inspector of the Victor Valley district of San Bernardino County reports inspection of 2500 acres of orchards during the past month.

Victor Valley, San Bernardino County, is appealing for an experimental farm, either under direction of the board of public schools or the farm adviser.

Bean growers who were not forehanded are pinched in the enormous increase of bag prices. Some early buyers got as low as a 16 cent price. It is different today.

In economizing on wheat many a housewife is finding that milo flour is a substitute almost as good as the original. The latest favorite, however, is feterita which is almost as white and by some preferred to wheat flour.

Orange County has organized a branch of the California Honey Producers Cooperative Exchange. Temporary directors were elected as follows: George J. Brown, Tustin; W. S. Lee, R. C. McMillan, F. B. Steen, J. R. Lee, all of Santa Ana; B. J. Collins, Garden Grove, and Charles A. Blake, El Toro, alternates.

## The Coast and General

Apple and pear blight made serious inroads in the orchards near Yakima, Washington during 1917.

Cabbage growers of New Mexico are organizing to sell the spring cabbage crop, which will be large.

Shippers of farm products are figuring on the great increase of freight rates which will take place June 25.

Grays Harbor, Washington, is investing its road money in Liberty Bonds and holding back its improvements until another year.

Large grain dealers, one in Kansas City and one in Omaha, have had their licenses temporarily suspended because of food ruling violations.

America imports about 4,000,000,000 pounds of cane sugar yearly, mostly from Cuba. The country produces in raw cane and refined beet 1,873,000,000 pounds.

Disastrous fire in the Klamath national forest, though at first to have originated with disloyal propagandists, is now charged to careless smoker who dumped his pipe ashes.

The United States department of agriculture reports a new strain of asparagus, much larger, more uniform and productive than any other varieties. It is also to an extent rust proof.

Colorado will produce materially less of cantaloupes than for many years. It is now thought the output will not exceed 1000 cars. Over 300 acres have been cut off from Rocky Fords acreage.

A Phoenix cattleman recently shipped a 12 car train of Arizona steers to Kansas City market. The steers averaged 1033 pounds, and the Arizonan returned with a check for \$42,014.12. The fattening of the cattle was done in 60 days on alfalfa only.

Arizona alfalfa growers have found that poisoned bran mash, costing about \$1.00 per acre to distribute, has been exceptionally successful in killing cutworms which were devastating the fields. The poisons used were Paris green and arsenate of lead.

The federal farm loan board reports nearly \$14,000,000 paid out to farmers of the United States during the month of April. The amount paid out at Berkeley was \$569,750. The largest amount paid out by any one district was by Omaha which paid out approximately \$2,000,000. There were two districts which paid out less than did Berkeley, namely Baltimore and Springfield.

Arizona's latest successful crop venture is in spinach. An association of spinach growers has been formed at Glendale, and several cars were sent this season to Kansas City and Chicago. It was marketed in bushel baskets, each basket containing about 16 pounds. It netted the growers from 85 cents to \$1.14 per bushel, and the average yield was around 300 bushels per acre.

The federal government has notified Holland that if she wishes American wheat she must send some of the vessels she is keeping within her harbors in her own country. She wishes America to deliver the wheat in the ships which were seized from Holland in American harbors some months ago. More than 400,000 tons of Dutch shipping is lying idle in Dutch ports, and 15,000 tons of cereals are now at American ports ready for Holland.



# Home Canning of Fruits and Vegetables



CALIFORNIA never canned and dried and conserved fruit and vegetables as in 1917. In 1918 another record will be made.

"What, when and how?" is coming continually. Here are some hints from a leaflet on Canning Fruits and Vegetables issued by College of Agricultural, University of California.

In commercial output of canned goods no state equals California. Supplementing this great output, home canners during the past two years have aided materially in the state's welfare and, more, in adding to the

world's food production. One most satisfying point connected with this food conservation is that it utilizes a product which would be almost entirely waste.

The University of California has rendered invaluable service to the state and to fruit and vegetable growers in investigation and in the issuing of information in leaflets, circular and bulletin form. We are glad to pass the word along and also to suggest to the growers that they should at all times avail themselves of the University publications. Incidentally, file this and all other copies of the California Cultivator.

## Canning Fruits

**1. Preparation of the fruit.**—Wash, sort and prepare the fruit as for cooking. Remove peel, cores, and pits; cut or slice as desired. Cook as soon as possible after cutting. To prevent darkening, cut apples and pears should be kept in water until cooked.



**2. Heating and cooking with sugar.**—Place the prepared fruit in a pot and then add dry sugar, one-quarter to one-half pound per pound of fruit, or with very sweet fruit none. Add a cup of water and heat gently, to avoid scorching. Heat to scalding temperature. Do not cook till soft.



**3. Filling the jars.**—Warm the jars with hot water, and ladle the hot fruit into them through a funnel until they are filled to within one-quarter inch of the top. Avoid getting juice on the outside. The neck should be dry and clean.



**4. Placing rubbers and covers.**—Test clean, scalded rubbers by bending and stretching. They should not crack. Put evenly in place on the necks of the jar, then apply the covers, placing or screwing them loosely, and lower the jars into the sterilizer.



**5. Sterilizing in a wash-boiler.**—Place a piece of wire screening or other false bottom in the bottom of the boiler and pour in a few inches of hot water around the jars. Apply the cover to the boiler. Unless the cover fits very well place a cloth beneath it. Heat until steam comes from beneath the cover and then for about 20 minutes longer.



**6. Removal from the boiler.**—Remove immediately. Handles on the wire screen bottom or wire baskets to hold the jars facilitate removal. A cloth or a wire jar lifter may be used. The lifter in the illustration is made for holding washing and serves well for lifting jars and as a false bottom. Place hot jars on wood or paper to avoid cracking.



**7. Tightening the covers.**—Tighten the covers immediately and stand the jars upside down. This insures the sterilization of the covers. Leaky jars can be detected by air bubbles entering during cooling.



## Canning Vegetables

**1. Preparation of the vegetables.**—Shell peas, string and break green beans, husk corn, remove tops of beets, turnips and carrots, cut asparagus into lengths to fit the jar and in general remove waste parts and prepare as for cooking.



**2. Scalding (Blanching.)**—Place the prepared vegetables in a cheesecloth bag or wire basket and immerse in boiling water: corn on the cob, peas, beans and asparagus, five minutes; tomatoes, one-third minute; beets, 15 minutes. Other vegetables, three to five minutes.



**3. Chilling.**—While still hot and as quickly as possible plunge into clean cold water for a few seconds and allow to drain for a minute. The colder the water the better.



**4. Packing.**—Pack the dipped vegetables immediately while still hot in cans or jars. Jars should be heated before filling. Beets and tomatoes are peeled and corn cut from the cob before packing.



**5. Preparation of brine.**—Dissolve three ounces (three level tablespoons) of salt in one gallon of water and add five ounces (a small jelly glass) of lemon juice; corn requires eight ounces. Tomatoes are acid and require none. Strong vinegar may be used instead of lemon juice.



A glass measuring cup should be used to measure the lemon juice. If only one quart of brine is to be made up add two level teaspoons of salt and two and one-half tablespoons of lemon

juice to a quart of water. Use twice this amount of lemon juice for corn. The lemon juice may also be used by filling the jar of packed vegetables

Continued on Page 723



Established 1877

Forty-first Year

# CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established  
1901, Combined with California  
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Saturday, June 15, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

The photograph on the cover of this issue depicts one of many thousand scenes all over California at fruit curing time. California's cured fruit crop surprised itself and all the rest of the world last year, and still more surprising was the fact that these cured fruits were no sooner offered on the market than they were sold and at most satisfactory prices. This year's output may not be any greater than that of last year, but from present indications it will command longer prices and quicker sale.

## TARIFF CONFERENCE

California producers are planning to attend and make known the needs of their industries before the tariff commission which will sit in Los Angeles, June 17, 18; Fresno, June 20; San Francisco, June 25.

## NITRATE ON THE COAST

The Cultivator has often given information as to the distribution of nitrate of soda from various of the South Atlantic ports. We believe several ship loads have been delivered to the southeastern section of the country; none has been as yet distributed through government agencies west of the Mississippi.

We took the matter up with Washington and have from Chief of the Bureau of Markets, Charles J. Brand: "We are trying to make arrangements

for the distribution of nitrate of soda in California from a Pacific port. We are communicating with proper parties in California but are not able to advise you definitely as to the arrangements which will be made."

## COST TOO MUCH

We want lower priced wheat substitutes. Patriotic people are saving willingly. Many a family is going without wheat in any form, and more are using only a small portion of wheat, but all are more or less rebellious at the unjust prices of the substitutes.

## WAR SAVINGS

California is in line for the war savings drive June 28. There were mass meetings held in every precinct in some sections last Tuesday. Pledges will soon be in circulation which will give everyone in the state opportunity

## WARNING AGAINST A GERMAN PEACE

### From Platform Adopted by League to Enforce Peace

And, apprehensive of the lure of an inconclusive peace, which would enable the present masters of Germany to continue their dominion of Central Europe and sooner or later to menace again the peace and freedom of the world, the league feels that our people should be forewarned, in case Germany should propose to make peace on terms that might well deceive the unsuspecting. Suppose she should offer to retire from Belgium and France; to cede the Trentino to Italy; even to relinquish all claims to her captured colonies, and to promise some kind of autonomy to the various races of Central and Eastern Europe. Such an offer would be highly seductive, and if we are not prepared to understand what it means might well beguile the Allies into a peace which would be delusive; because unless the principle of militarism is destroyed, the promises would be kept no better than those broken in the past. Autonomy of other races would mean their organization for the strengthening of Germany until she had control of the resources of a population of two hundred millions for her next war; and the abandonment of her former colonies would be made only with the hope of recoupment in South America on a more favorable occasion. Such a settlement would be a mere truce pending a strife more fierce hereafter. So long as predatory militarism is not wholly destroyed no lasting peace can be made.

to pledge the purchasing of war savings stamps monthly, weekly or at any particular dates to December 31, 1918. Two billions are to be raised. Shell Berlin with W. S. S. from California.

## USE MOTOR TRUCKS

A striking example of the use of motor trucks in the East and of the immense saving to shippers can be had from these figures: If the shippers now using motor trucks as carriers between New York and Philadelphia were sending their tonnage, which amounts to 900,000 tons annually, over the railroads instead of the highways, the recent freight rate increase of the railroads would tax them approximately \$450,000 more than they paid previously. Motor trucks plying between these two points carry the equivalent of 720 box cars loaded to 50,000 pounds capacity, or, 36,000,000 pounds each week. Six hundred and forty trucks operating between these two cities make a total of 7200 trips a week.

## ENTERING THE MARKET

The last Live Stock and Meat Trade News issued by the bureau of markets of the department of agriculture remarks regarding a dispatch from Kansas City:

"Shipments of live stock from California have ceased to be a rarity at this market. During the first five months of 1917 shipments from California consisted chiefly of hogs, horses and mules. These same species have been arriving in very limited numbers during the same period in 1918, while there has been a decided increase in cattle and sheep. Only 29 California cattle arrived on this market in March, 1917, while 1177 arrived in May."

Perhaps California will yet get return for some of the good fruit growers' money which has in past years been sent East for the products of Eastern packers. Meanwhile let's have more California packing houses and ship instead the cured product.

## PRODUCING MORE

Farm bureaus of California have aided materially in the increased production campaign. Especially have these bureaus centered on the "hog on every ranch" endeavor, and nearly every county reports the increase of hundreds of hogs through the placing of one little pig on fruit or other ranches where hogs are not produced in a large commercial way. Much of this fat and meat production will be at only nominal expense, for, while feed bought in small quantities has been exceedingly high, there is often a mass of cull fruit or other waste products which may be saved in the

form of pork. On other little ranches a few sheep, an additional cow, more poultry, or occasionally even a baby beef, are all adding to the production. All of which makes possible more war savings stamps, more food for more of the Sammies on the way to Berlin

## A BILLION BUSHELS

America stands between civilization and the murderous Hun. Failure to send our troops to France and, even more, failure to send food to sustain our soldiers and those of our Allies—in fact practically all the people of the Allied nations—would soon end the war, and at best with our increased shipping and increased planting of cereals there is a wonderfully narrow margin. Hence it is with great satisfaction that the people watch the reports of the weather bureau and market bureaus of the department of agriculture, which indicate conditions favorable to a bumper crop.

Over five million acres of winter wheat were abandoned to other crops because of winter killing, but the planting of spring wheat was correspondingly increased, and favorable spring conditions have brought on the winter wheat so that it is now estimated we may possibly produce a record crop, but if not, one which will at least approach one billion bushels. The favorable spring has also favored corn, and America will produce food as never before in her history. The crop of winter wheat alone it is estimated will approximate six hundred million bushels.

And best of all the American people are in such an attitude of service that conservation of every grain possible of this great crop will increase the amount available for use.

## This Week's War Notes

The lists of names of American boys killed in action are increasing in length day by day.

Careful estimates indicate that at least 60 per cent of German submarine vessels have been sunk.

Lightning struck a 55,000 barrel tank of oil near Santa Barbara which was filled to capacity; it was totally destroyed.

Ex-President Wm. H. Taft says: "We must go to Russia and make an Eastern front." "No task is too great for the United States."

A court-martial at San Antonio, Texas, imposed a 45 year sentence on each of 45 "conscientious objectors" who refused to don the uniform.

Deserters from the Austrian army, surrendering themselves to the Italians, bring information that the Austrians are massing additional forces for another drive at Italy.

Nearly the entire force of the Baker Iron Works, Los Angeles, is out on strike this week. Federal Mediator Connell is negotiating between employes and owners.

The Russian embassy at Washington has appealed to this government and to the other Allies to send expeditionary force to Russia to repel German invaders.

Practically all shipping activities have been resumed along the Atlantic Coast, but it is known that the submarines are still within striking distance. The total sinkings from these raids is 18.

The Shipping Board has let contracts for 40 concrete ships of 7500 tons. Eight ships will be built in each of five separate yards. One of these yards is at San Pedro and another at San Francisco.

Secretary Baker has stated; "More than 700,000 American soldiers have gone over seas to carry back to France the encouragement and assistance which Lafayette and Rochambeau brought to America."

The "Petrograd Bolshevik" announces that it is the intention of the Soviet administration to recognize the independence of "The Southern Chinese Republic" and that it will proceed to organize councils of Chinese workingmen similar to the Bolshevik councils in Russia.

Chairman Hurley of the Shipping Board declares that by 1920 the United States will have 25,000,000 dead weight tons of shipping, which will involve an expenditure of \$5,000,000,000 but will give America the greatest merchant marine in the world. This year's output will be about 3,000,000 tons.

The Turks have confiscated property to the value of five billions belonging to Greeks. Greeks of Thrace are being forced into the Turk army and Greek women are being sold as common chattels. More than 500,000 Greeks have been deported, many of whom have died from torture or starvation.

The Women's Land Army in England has succeeded in planting many thousands of acres to potatoes. Many thousand tons of tinned meats and other foods have been landed in the past few weeks and England's food situation has been vastly bettered. Rationing continues and every ounce of food is saved.

Inch by inch the Germans are drawing nearer to Paris; day by day the resistance increases; and while General Foch is willing to yield territory in order to save men, his resistance is stiffening and counter attacks have reclaimed several miles of territory. German troops are suffering appalling losses and their plunge is renewed without consideration of cost in men. There has been less activity on the Marne and the extreme southern end of the line, likewise little apparent interest in Flanders excepting as the British are bringing more pressure to bear. The main drive is in the center or Montdidier section and directly toward Paris. Yankee troops are now landing at the rate of a quarter of a million a month.



### CANNING VEGETABLES

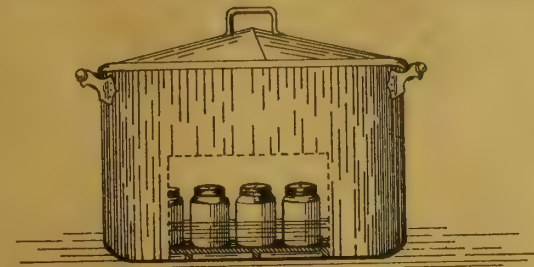
Continued from Page 721  
with hot water and adding two tea-

spoons of lemon juice to a pint jar and four to a quart, with salt to flavor. Sterilize as above.

6. Heating and filling with brine. — Heat the brine to boiling and pour over the vegetables in the jars. If the jars are hot and a funnel used there is little danger of breakage. Apply rubbers and loose covers as with fruit and place in sterilizer. Pack tomatoes without brine.



7. Sterilize in a wash-boiler. — Sterilize as described for fruit, but leave corn two hours, beans one and one-half hours and other vegetables one hour after steam issues from the boiler. Remove, tighten covers and allow to cool in an inverted position as with fruit.



### Drying Fruit

Continued from Page 719

4. Exposing to the sun. —The treated fruit is spread in thin layers on trays and exposed in a sunny place. Turning the fruit hastens drying. When finished it should be soft and leathery, neither brittle nor juicy. In very hot weather the product is better if the trays are piled one on another in "stacks" when about two-thirds dry. The final drying thus takes place in the shade.



5. Sweating.—Most fruits do not dry evenly. Sorting out and redrying the slowly drying pieces is sometimes necessary. Packing the dried fruit tightly in large boxes, bins or piles ("sweating") for some days will equalize the moisture.



6. Sterilizing and packing. — Dipping in boiling water, drying and packing in tight containers as is done with vegetables will protect the dried fruit from insects. If the fruit is very dry, drain after dipping and pack without re-drying.



Late in the season when the weather is rainy, and in localities with summer rains, fruits must be dried by artificial heat. A dryer can be made on plan of sulphur box shown in step "3." Make a box with gable roof and large enough to hold a dozen trays and a small stove. The roof must be equipped with a large ventilator to facilitate removal of vapors. A kitchen dryer can be made of several coarse galvanized screen trays, 18x24 inches, suspended one above the other over the kitchen stove.

She also serves who stoops and weeds.

### CHANGES IN STATE COMMISSION

The weekly news letter of the state horticultural commissioner announces the resignation of D. C. Fessenden as secretary and that Avery S. Hoyt, formerly in charge of the Los Angeles office, has been appointed to fill the vacancy. The letter states that Mr. Fessenden leaves to take up private work.

D. B. Mackey, field deputy, has been transferred to the southern portion of the state and O. W. Newman has been appointed to fill his position. J. N. French is made field assistant of rodent control for northern coast districts.

## GARDNERS UNIT BEAN HARVESTER

THE illustration of a Two Unit Gardners Bean Harvester shows the most Modern Bean Harvester manufactured at any price. It cuts operating cost fully 60 per cent. Cuts four rows and requires only one man and two horses to operate.

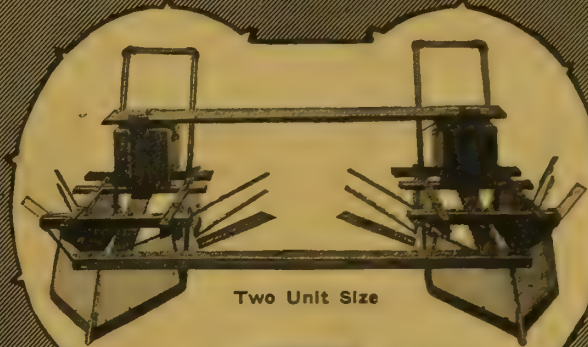
By gently rolling the vines outside the harvester at least ten per cent of the beans are saved.

No trouble to remove knives for sharpening or replacing.

Remember prices positively will advance after July 1st, 1918, so don't wait—order now.

Get information from your implement dealer or write for new folder to

Gardners Harvester Company  
900 E. 4th St., Santa Ana, Cal.



Two Unit Size

## If You are Looking for

Efficiency—  
Low Upkeep—  
Long Life and  
Low Cost in

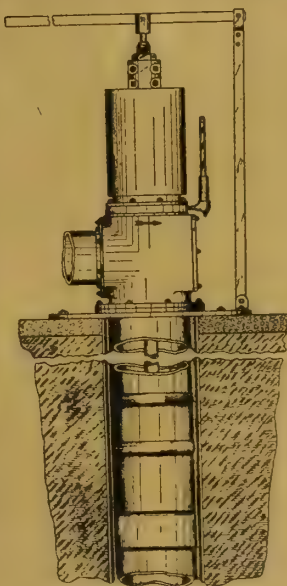
## PUMPS

Let Us Tell You All About

## KIMBALL'S

Direct Flow Turbine

Save Digging Pits and Large Wells



The Kimball Direct Flow Turbine is a moderate speed rotative pump employing an improved design of Impeller and Rectifier not embodied in any other pump. This, coupled with low velocity, reduces the friction to a minimum thus saving horsepower and reducing wear. All bearings are lubricated through a hollow shafting by a positive lubricating system. These bearings are protected by automatic water tight packing glands to prevent sand entering.

### Look at This!

A Kimball Direct Flow Turbine will pump:  
40 miners inches out of a 7 inch well.  
115 miners inches out of a 10 inch well.  
200 miners inches out of a 12 inch well.

Write us your irrigation requirements. NO CHARGE FOR ESTIMATES. Our many years of experience in irrigating systems places us in a position to help you save if you will give us an opportunity.

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## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT

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# LIME

Pulverized Limestone ..... \$3.35 Per ton  
Ground Limestone.....\$2.50 Per ton

This is the One Element Lacking in Most California Soils. Write for Booklet  
Riverside Portland Cement Co.  
640 Title Insurance Bldg., Los Angeles, Cal.



## Topping and Pinching Vines

The state experiment station is sending out new bulletins with a fund of information which will induce many California producers to write for them. They may be had for the asking. Write Agricultural Experiment Station, Berkeley. Number 296 has to do with Topping and Pinching Vines (grape vines). The bulletin No. 296 is written by Prof. Frederic T. Bioletti and Prof. F. C. H. Flossfeder. From the conclusions we quote: **Conclusions**

We may conclude from these results that both pinching and topping are harmful under conditions similar to those under which the experiments were conducted.

That very heavy topping continued year after year may almost ruin a vineyard.

That topping is more harmful than pinching but that even the latter, contrary to the usual belief, is both weakening and detrimental to the crop.

It should not be overlooked, that these conclusions apply only to the conditions of the experiments.

Many varieties, when growing in excessively rich soil abundantly supplied with nitrogen, humus, and water, are often unfruitful owing to an excess of vigor, and moderate summer pruning might result in better crops

without dangerously weakening the vines.

Some varieties, moreover, produce few fruit buds on the main canes but produce them abundantly on the laterals. Moderate pinching or even topping in such cases might be necessary to promote the growth of fruitful laterals.

Topping or, better, pinching, is also necessary under some conditions

where heavy winds are liable to break off whole shoots. It should be done, however, with a realization that the only object in view is to prevent a more serious injury.

Probably four-fifths of the topping practiced in California is inadvisable. It should never be applied to Muscats or similar vines of weak growth nor to any variety when not excessively vigorous. It is less harmful to young vines than old and is most useful for two and three-year-old vines to get them into the proper shape before they bear.

## Valuable Report Blank

California has been especially lax in the matter of dependable statistics as to her own productions. For years we have succeeded in making fairly close approximations and guesses. The state board of agriculture is now improving its statistical department. The county horticultural commissioners with the aid of the assessors' books have gathered some information which is reported and tabulated by the state horticultural commission. This work is being gradually improved, and we have just been permitted to see the method of one of the counties in gathering these statistics together. This was in the office of Wm.

Wood, horticultural commissioner of Los Angeles County. Mr. Kent and Miss Kenilworth have both taken a great interest in securing information which is often requested as to the county resources. The means of making this quickly available has not been at hand so Mr. Kent has devised a monthly crop report. It is so simple that explanation is not necessary. This simplicity is one of its valuable features. It consists of a long narrow sheet with a blank for each month of the year, with special rulings providing columns for "oranges in bearing," "Navel acs.," "Per cent.," "Val. acs.," "Per cent.," "Seed. acs.,"

"Per cent.," and the same number of columns for nonbearing oranges. Then there are lemons, grapefruit, apples, apricots, in all columns for 42 different fruits and soil products. The column showing the acreage in the district or in the county, as the case may be, along side the column showing percentage or condition of the crop makes it possible to determine almost instantly the total of any one crop.

These monthly reports are made out by various inspectors and handed in promptly at the end of every month.

### ONE CENT A MILE FARE FOR FARM LABOR

A meeting of California fruit growers holding term contracts with canners and packers was held recently in the assembly room of the Chamber of commerce at Fresno. H. P. Stabler of Yuba City was elected chairman.

Shortage of labor in the agricultural districts was discussed and in view of the importance of this matter in relation to the fruit growers, the following resolution was adopted. Fruit growers throughout the state whose crops are menaced by a shortage of labor are requested to pass a similar resolution and send it to the California Development Board, Ferry Building, San Francisco:

"We, the fruit growers of California holding term contracts with canners and packers, assembled at Fresno, April 27, 1918, do represent that we are growing an important food product which is menaced by the shortage and high price of farm labor; that the possibility of quickly moving farm labor from points where a surplus may exist to points where labor may be scarce would greatly facilitate the conservation of food; therefore

"Resolved, that we urge the food administration to use its good offices in securing a one cent a mile railroad fare for farm labor for the season of 1918-1919."

### FIXING PRUNE PRICES

Definite information regarding prices of prunes for 1918 will soon be given out by a commission of ten appointed by Food Commissioner Merritt. Prices will be made on a basis of production cost. Regarding the commission the San Jose Mercury says:

"The independent grower will be represented on the commission by Elmer E. Chase, E. N. Richmond and W. S. Clayton, all of San Jose; E. L. Fellows of Campbell, for the Santa Clara Valley; Mr. Sims of Visalia, for the San Joaquin Valley; Frank Buck, Vacaville; Jerry Buckley, Cottonwood; W. H. Williamson, Mills, for Sacramento County, and W. C. Chisholm, Santa Rosa, for Sonoma County. All are large prune growers.

"H. G. Coykendall of San Jose, manager of the California Prune and Apricot Growers' Association, Inc., will act for the association and will have an equal voice in fixing the price with the nine independent growers.

"Merritt has called a meeting of representatives of the independent growers for Friday afternoon in the food administration offices in San Francisco to discuss details in determining a fair price. It is expected that a price will be agreed upon within two weeks."

### LATER FRUITS

Vacaville reports fruits about ten days later than last year. Continued cool weather has caused delayed ripening. A fruit handler reports:

"The cool weather has been bad for our crops. I believe, however, if we have a period of ten or 15 hot days soon we will be able to catch up with the other sections in time for the peaches.

"California's fruit crop will be only about 60 per cent of what it was last year, while the peach crop in the Southern States and the Middle West is abnormally heavy. We must have some hot weather soon if we are to compete for early Eastern shipments."

Food Administrator Merritt has requested county horticultural commissioners to gather fruit growers and shippers together in order to determine fair prices for fruits during the coming season. The growers are asked to decide as to the minimum price to

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be accepted for dried fruit, and from information received the food administrator will set a maximum price.

### AUSTRALIAN APPLES

The Australasian Fruit World is calling attention to the fact that the United States is taking advantage of the Australian market for apples, but suggests that Australia return the favor by shipping to this country its fall apples which are ripening at our springtime. A writer in this paper discusses the freight difficulty and calls attention to American business methods in meeting them. He says: "Australia has a population of under five million people. We produce ample quantities of fruit for this population, and we assure a regular supply to local consumers by the assistance of cool storage. Each year in the months of October, November and December some hundreds of thousands of cases of American apples reach Sydney, Brisbane and Melbourne, and being fresh off the trees (only six weeks), well graded and packed, beat us on our own markets by shillings per case, viz., 12/6 to 25/-, against 7/- to 10/- for our stored fruit. We are in exactly the same position to supply America with fresh fruit when they can take it, as they are to supply us; but we have the added advantage that where they, in supplying us are limited to five millions of people, we, in supplying them, would have 100 millions to work on, so that it seems to me that if five million people, living under practically the same conditions in regard to good wages and living conditions, etc., as the 100 million, can consume 300,000 cases at profitable prices, how much can the 100 million consume?—1,500,000 cases?"

"Cool stored fruit will never compete with fresh picked stuff, and if we met the American demand for high grade pack, etc., we need have nothing to fear on the score of quality."

### COST OF PRODUCING APPLES IN YAKIMA VALLEY, WASHINGTON

To determine the annual cost of apple production per box, and to gather such information as to different methods of orchard management practiced by the growers of the Yakima Valley, Washington, as might have a bearing upon cost of production, specialists of the United States department of agriculture in the summer of 1915 conducted a detailed study of 120 representative orchards in that section. Their findings have been published in Department Bulletin No. 614, which is the fourth of a series of bulletins on the cost of apple production in four of the leading fruit growing valleys of the Northwest.

### PRICES FOR FRUIT HANDLING

The Placer County farm bureau has established the following schedule for labor employed in that section:

Packing: Cherries, 12 rows and under 15 cents; 13 rows and over, 18 cents; plums, flat rate, six cents per box; peaches, flat rate, three cents per box; pears, flat rate, seven cents per box. Farm labor per hour, 30 cents. This scale was established by the farm bureau committee and it is urged that all abide by it. The committee will meet frequently and revise the schedule if determined advisable.

### SUMMER COURSES

The University of California will hold two summer sessions this year, each extending from June 24 to August 3. The one, which will be the 19th annual, will be held at the University of California, covering the six weeks with a full program including many attractive agricultural courses. The southern division will hold its sessions in the new Los Angeles high school. It is under the direction of Mrs. Davenport Martin.

The federal government of Australia has agreed to make advance payment on evaporated fruits on delivery at Hobart. A charge of six per cent will be made on money so advanced, inspector's certificate and shipping documents being retained by the government. Because of the shortage of shipping and delay in securing bills of lading it has been recommended to the government that advances should be made on evaporated fruit as soon as it has been stored for shipment.



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## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Liver Trouble

Will you please tell me what remedy to use when your chickens have liver trouble. I lose a great many laying hens, their combs turn black, and they only live a few days.

More green feed, more exercise, an occasional dose of Epsom salts and less beef scrap in the mash are the remedies for liver trouble, because bad livers always come from heavy feeding and lack of greens and exercise. I am taking it for granted that your diagnosis of the disease is correct. When hens die very suddenly without previous signs of illness, there is always a question whether they may not have been poisoned by putrid meat or moldy feed. Look to your feeding, give all the greens the hens will consume, and make sure they are not getting anything that could cause ptomaine poisoning. To give Epsom salts, mix the salts—half a teaspoon for each hen in the flock,—with a small quantity of wet mash. Such a dose might be given once a week for a month or until the hens seem to be in good condition.—J. A. K.

### Household Insects

Is there anything I can burn in a clothes closet that will kill moths: both the common and the silver fish moth?—Subscriber, Escondido.

The best procedure is to capture as many of the moths as possible. However, if the closets and rooms are tight enough fumigation is very effective, but to secure best results the room should be almost air tight. Before proceeding stuff rags and paper in every crevice. The use of burning sulphur is not as satisfactory as other fumigants. It is also objectionable in its effect on colored fabrics. The

use of hydrocyanic acid gas, in exactly the same way as method used by the citrus orchardists to control scale, is perhaps the most effective, and the gas is not explosive. It is however deadly to humans as well as insects, so that care must be taken to generate the gas after one has left the room, and then air the room several hours before entering. The time for fumigation for one room is usually four hours. The gas is generated by the use of cyanide of sodium one ounce, sulphuric acid 1½ fluid ounces, water two fluid ounces. Mix acid and water; then when all is ready drop into the vessel the cyanide. Carbon bisulphide is also a good fumigant. It is likewise deadly for humans to breathe and also is very explosive. Keep all fire removed when it is used. Regarding the method of handling cyanide in buildings we refer to extended article on page 246 California Cultivator, September 11, 1913.

### Budding Over Peaches

Is it practical to bud over peach trees from five to eight years old which have been mixed in an orchard eight years old? The old trees are in good condition but are poor varieties. Is it practical to bud over scattering trees that are eight years old that have grown up with old trees? Trees are in good condition but want a different variety. Have too many of this kind and want to replace the old trees with young trees. What age trees are best to bud? Is budding of trees which are in bearing satisfactory?—Subscriber, San Bernardino.

The difficulties in the budding of stone fruits have usually prevented the making of bearing orchards. It is possible to graft these trees over but practically every expert handling it says it is impossible. The age of the tree best to bud is one year from seed.

## Lime Sulphur Best for Citrus Thrips

**P**LAIN lime sulphur solution applied in three successive sprays will enable a satisfactory control of the citrus thrips, an insect which is rapidly becoming a menace to the production of oranges, grapefruit and lemons in California and Arizona. This treatment has been developed in investigations by entomologists of the United States department of agriculture, and is believed to be the most reliable of four satisfactory mixtures tried; lime sulphur, sulphur soda, lime sulphur and tobacco extract, and tobacco extract. In a publication of the department of agriculture, Bulletin 616, "The Citrus Thrips," J. R. Horton of the bureau of entomology describes the citrus thrips in this country, its life history and control, and announces the results of extensive experiments in spraying. It is explained that the lime sulphur solution recommended may be either one to 56 of the 36 degree Baume density, or one to 50 of the 33 degree Baume density.

Maps presented in the publication mentioned show the distribution of the citrus thrips in California and Arizona, to which states the insect is

confined, it is believed. The insect is known to occur in eight counties in California: Sacramento, Fresno, Tulare, Kern, Los Angeles, San Bernardino, Riverside, and Orange. The infestation is most serious in Tulare, Fresno, Riverside, and San Bernardino. In Kern County the insect is increasing rapidly, and with larger plantings doubtless will be quite as injurious as in Tulare County, the writer of the publication believes.

The most important damage caused by thrips is the lowering of the market value of fruit by unsightly scabbing and scarring. The eating quality of the orange is not affected by this damage, but its commercial grading is lowered considerably and the selling price correspondingly reduced. The loss suffered from grade reduction due to thrips in the Lindsay district of the San Joaquin Valley in a season of comparatively light infestation is given in the bulletin as follows: 43 per cent, or 255,742 boxes, reduced to second grade at a loss of 37 per cent a box, making \$96,744.54; 23 per cent reduced to third grade at a loss of 65 per cent a box, making an additional \$88,914.18, or a total loss of \$183,539.34.

## Florida Orange Crop

In regard to the coming crop of Florida oranges Edgar Wright, editor of The Florida Grower, writes:

"No one would hazard a guess as to the total of the coming crop or how much the exchange might be expected to handle. Two million boxes is a mark that has been shot at before, but never hit. Some are optimistic enough to hope that it will be reached

this coming season. Estimates have been asked of all sub-exchange and association managers, but it is probably too early for good guesses as to the total crop. Probably at the annual meeting of the exchange, which will be held on June 6, some estimate may be arrived at, though possible second-bloom will have to be taken into consideration, even then, and this bloom

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Piston rings prevent escape of gas and power. They must fit exactly or there is compression leakage, excessive carbon, and power loss. The scientific construction of

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assures equal pressure all around the cylinder walls. They are made in all sizes to fit every model and type of engine, automobile, tractor, etc.—every size accurately gauged to fit the particular model of motor.

Your local dealer or garage has—or can get—our data book of piston ring sizes of practically every engine and motor made. This will tell exactly what rings you need. Complete size assortments are carried by more than 300 jobbing and supply houses all over the country from which you can be quickly supplied. Over 2,000 unusual sizes and oversizes—all widths and diameters—are kept constantly on hand at the factory ready for prompt shipment anywhere.

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A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris LEAK-PROOF Rings in lower grooves to insure maximum compression and fuel economy.

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Our 1918 orchard tractor cultivator is built to meet the demand of the owners of medium and small tractors for an extra strong cultivator that can be handled by the tractor driver. This cultivator is made on the same lines and with the same high grade steel as our well known chisel cultivator but without the hand levers and rear wheel. It has the hand wheel screw lift making it a perfect one man all steel tool. We make a medium weight for small tractors and an extra heavy cultivator for the larger tractors and in four sizes 5, 6, 7, 8 and 10 feet wide.

Southern California Distributor:  
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131-153 Kansas St., San Francisco, Cal.

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is sometimes heavy, especially on trees that have had a light February bloom. All directors have faith that the price for this year will not be lower than \$2.00 a box on the tree to the grower, and plans will be made to let the most isolated growers know this. Certainly that will be the price if all the growers say so. Jobbers are ready to pay it, and so are retailers and consumers, though of course they will take the fruit for less if it is offered them. Sales Manager Skelly repeated his statement that conditions were just as good as last year; that California had a light Valencia crop, and would be cleaned up early, and that Florida could not possibly ship any more fruit before Christmas than was shipped last year. The country is prosperous, and the consuming public has the money and will not be backward about paying an average of 40 cents a dozen for oranges, and that they will have to pay that whether the grower gets \$2.00 or whether he gets less, and so he might just as well get it. Speculators will try to buy cheaper of course, but they will make just as much money for themselves at \$2.00 as they would at \$1.00, the difference going into the pocket of the retailer. Just hold out for that \$2.00, and you will get it just as sure as fate; that is providing you all hold for that figure. Just spread the gospel and get your neighbor to demand what the fruit is worth.

In regard to this, President Ross says: "Particularly grapefruit trees show a remarkable disinclination to function this year, and the orange crop is not going to be particularly large, though it is conceded that it will be larger than last year, in some districts 100 per cent larger, but it is well to remember that in these sections they had very little fruit this past season. It is well to carry away from this office a spirit of optimism and to spread it around. It is a shame that any speculator is able to buy fruit at \$1.00 a box on the tree. The grower cannot produce fruit for that money now that the price of everything has gone so high. The conditions that gave us the phenomenal prices this year, and which were something of a surprise, are just as good now and will be just as good next fall as when we started to ship our crop last season."

#### VOSLER BACK

E. J. Vosler, formerly secretary of the state horticultural commission, has returned from five months in Australia where he has been investigating as to parasites which control the beet leaf hopper, *Eutettix tenella*, also other insects of agricultural interest. Large shipments of the material were sent to California, most of them arriving in good condition, but the rearing of the parasites from the leaf-hopper eggs has presented almost insurmountable difficulties. A sufficient quantity will be obtained however, to ascertain whether or not they will breed on the eggs of *Eutettix tenella*.

In addition, Mr. Vosler brought a lady bird and other insect enemies of mealy bug, black scale, etc. The lady bird is *Mydrias pygmaeus* and known to feed freely on young mealy bugs.

#### LOSS IN DRYING

Yields of various fruits and vegetables per ton fresh material.

Material	Yield per ton pounds	Moisture content of dry product, per cent
Apples, white stock varieties	250-260	35
Apples, dark stock varieties	260-285	35
Apricots, halves	350-400	26
Peaches, halves	225-250	22
Pears, quarters	270-300	24
Cherries	400-450	24
Blackberries	380-400	18
Raspberries, Cuthbert or Shaffer	400	18
Raspberries, Gregg or Ohio	440-475	18
Loganberries	340-370	18-20
Prunes	600-675	22
Green corn	480-520	15-17
Green beans	275-325	16-18
Green peas	400-475	15-18
Tomatoes	150-200	15
Potatoes, white	475-525	16-18
Potatoes, sweet	575-650	17-19
Carrots	275-320	16-18
Beets, garden	300-320	17-20
Beets, sugar	340-400	17-20
Parsnips	250-300	16-18
Cabbage	240-275	17-20
Onions	240-300	16-20
Pumpkin	250-325	18-20
Grape Raisins	400-600	20-30

#### MEALY BUG CONTROL

Regarding control of mealy bug through use of parasitic and predaceous insects County Horticultural Commissioner Brock of Ventura writes:

"I have just returned from the field and we have been able to find a large number of larvae feeding on mealy bug at the present time. If it is possible for the branch insectary to furnish us with some of these valuable predators at the rate they have been furnishing them for the past month I haven't the slightest doubt but that we can clear up one of the worst infestations we have had in a number of years in a grove on which we are staking our efforts. In addition to the large colonies liberated in this particular grove other smaller colonies were furnished which were liberated in groves slightly infested. We hope and believe that within the next two or three months, at the present rate of liberating these valuable insects the grove on which we are now working will be commercially clean. I sincerely hope that the many other duties will not prevent the state commission pressing this work with the same vim it has been given in the past."

#### GLENN COUNTY FARM BUREAU

Farm Adviser W. H. Heileman sends schedule of June meetings: Orland, 17-18, night meeting 18; Crome, 19, night meeting, 19; Jacinto, 20-21, night meeting, 21. Directors' meeting at Willows at 10 a. m., 22. Farm Home Department meeting at Willows at 10 a. m., 22; Willows, 24-25, night meeting, 25; Grapevine, 26, night meeting, 26; Elk Creek, 27, day meeting 2 p. m.; Plaza, 28, night meeting, 28.

During the month meetings will be held at Hamilton, Fruto and Clarks Valley for the purpose of organizing fire fighting districts.

Directors' meeting for the month in the Sacramento Valley districts are as follows:

Colusa County, 17; Sutter County, 18; Butte County, 19; Shasta County, 20; Tehama County, 21; Glenn County, 22.

#### LOS ANGELES COUNTY FARM BUREAU

June meetings of local centers of the Los Angeles County farm bureau are scheduled at Lamanda Park, 17; San Dimas, 18; Artesia, 19; Covina, 22; Burbank, 24; Little Rock, 25; Monrovia, 25; Lancaster, 26; Newhall, 27; Owensmouth, 27; Pomona, 28; Inglewood, 28; July meetings at Glendora, 1; Clearwater, 1; Claremont, 2; Moneta, 2; Whittier, 3.

The Claremont-La Verne Center meeting date has been changed from

the fourth Friday in the month to the first Tuesday. The next meeting is at Claremont, July 2.

#### GREAT CONVENTION WEEK

November 11-16 inclusive will be convention week at Riverside. The start of the conventions will be on Monday morning, and something will be doing from that time until Saturday night. The county horticultural commissioners will be the first on the grounds. The California Association

of Nurserymen will also meet in Riverside the same week. It had been hoped that state horticultural commissioners of all Western states might meet in Riverside the same week, but this is as yet uncertain. The one biggest event of the week is the state convention of California fruit growers.

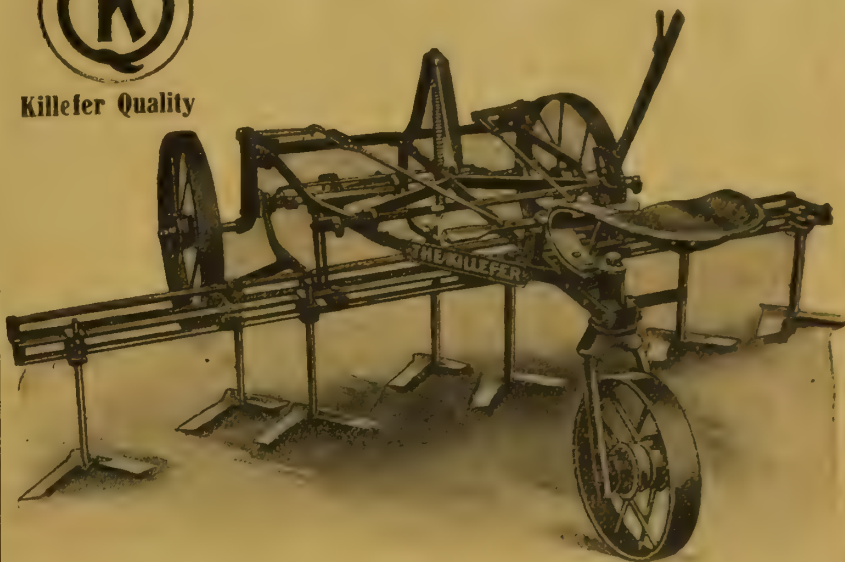
Farmers of Newman, Stanislaus County, have filed request with the town council asking for the closing of the saloon.

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For Tractor or Teams



Killefer Quality



**Conserve man power—One man cultivates four rows of beans as easily as two with this tool.**

This Cultivator, like most of our implements, has been developed at the request of Dealers and Ranchers for a strong, simply controlled cultivator, capable of doing their work deeper and better than possible with the lighter tools. The frame is one piece of high carbon steel without joints to work loose or sag and holds the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device which holds it rigidly on both sides. A man's weight on the extreme end will not spring it out of line. The seat is set far enough back to give an unobstructed view of the four rows and the foot control is very easy on the driver.

Built to cultivate any width row from 20 inches to 36 inches wide.

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will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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Can make immediate delivery

Body made from single sheet of galvanized open hearth steel, ten feet long, with extra heavy taper collar on one end and band of heavy steel on the other—making each section 10 1/2 feet, made with lock seam (four thicknesses of steel), which gives unusual strength and durability, besides absolute proof against leakage.

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Sour Orange Seed Bed Stock, strong, thrifty, one year plants 10 inches and up. Absolutely free of scale.

**Walker-Hubbard Nursery Co.**

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If you are paying more than 35 cents per ton for stacking your hay, you are losing money. You can stack it for less than that if you use the

### Schmeiser Improved Portable Automatic Derrick

Will Do the Work of 12 Men

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Tell us about your belt troubles—give full particulars as to h. p., electric, steam or gas, diameter, drive, cross, straight, perpendicular, width of belt, ply, distance, r.p.m., and your dealer's name.

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**New York Belting & Packing Company**

519 Mission Street

Home Office: New York City.

Branches in all Principal Cities

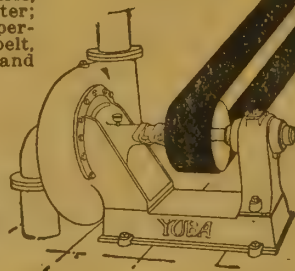
DEPARTMENT C

SAN FRANCISCO



Does your belt separate in the plies?

Cheap quality of rubber cement will always cause the belt to separate in the plies.



## Krogh Manufacturing Company

206 No. Los Angeles St.  
Los Angeles, Cal.

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**Krogh Pumps are Absolutely Water Balanced  
No End Thrust Possible No Set Collars Used  
THE NO TROUBLE PUMP**



Krogh Direct Motor Driven Pump

Fitted with Ring Oil-  
ing Bearings

Renewable Babbitted  
Bushings

Ring Oiling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.



To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

## Protecting Stored Food From Insects

By E. R. de Ong

Trouble is coming to our flour, cereals and dried fruits if we don't kill the bugs and worms. Warm weather is bringing them out of their hiding places to breed and lay eggs on every sack of flour and meal, every exposed raisin, and even on the cheese and ham. And now is the time of year to hit them and hit them hard. Don't wait until your stock becomes wormy before you fight the bugs, but do it now, before they have a chance to lay eggs everywhere. So let's overhaul the storeroom and within the next ten days remove those broken packages of oatmeal, crackers and mushes, the samples of grain and those returned sacks of flour, that someone thought were "buggy." Decide right off if any of this stock is sufficiently webby and infested to be unfit for human consumption. If it is, take it right out of the store. If any of the stock needs rebolting arrange at once to send it to the mill. Don't let it stay in the store for it is in these old accumulations that may lie undisturbed for months that the moths and beetles harbor, waiting their chance to lay eggs on fresh stocks as soon as they come in.

A wormy package of goods is unsalable, you do not even want it to go to your customers to reflect on your store, the factory will not take it, so it is your loss and the way to avoid that loss is to prevent any eggs from being laid on your stock. And if in-

sects are present you cannot protect your stock from their attack unless it is sealed in a tight package; cloth sacks will not do it and the cracks in a wooden box allow newly hatched worms to pass through readily, so it becomes necessary to fight the insects.

Hunt up all the wormy packages, dump the contents and burn or steam all the boxes or sacks in which they were stored, remove all the trash, papers or packing in which bugs can hide.

Clean the waste box thoroughly and see that no worms are hiding in the cracks.

Sweep the room—floor, walls and ceiling—a good job of sweeping is one of the most important parts of the work—if necessary repile the stock so that no place is left untouched.

Whitewash either with a brush or spray pump, and leave no point untouched. Use enough material to whiten the walls, but not thick enough to peel off readily; if necessary cover the stock while whitewashing, but don't neglect this part of the cleanup. A small barrel spray pump with a long line of hose is quicker and will get the whitewash into the cracks better than if a brush is used. A half barrel mounted on a truck makes a good container for the wash and can be moved about readily and thus reach every part of the building.

Do it now.

## Potato Drying

There is one thing which we hope the present food situation will bring about, and that is that there may be factories for the making of starch, potato flour, or at least ordinary dried potatoes from some of our surplus.

Years like the present it is impossible for the grower to secure fair returns for his investment. He has a perishable product which will not permit of exceptionally long storage. This has at times resulted in losses which have practically ruined some potato growers. European countries have long cared for this waste and made an extremely valuable product and saved the growers. We note in the Humboldt Beacon a description of method of drying potatoes in a Humboldt County factory which is under direction of Farm Adviser Christian-

sen.

Machinery for drying the potatoes was installed the latter part of April in the Central Creamery and on May 5 operation commenced.

Two shifts of women and men are employed, the day crew consisting of 38 people, principally women and girls while on the night shift 28 hands are busy.

From \$17 to \$25 is paid per ton for the potatoes, quality determining the price with spoilt and poor potatoes checked back to the seller.

The tubers after being hoisted in sacks onto the upper floor are poured into a circular container, which revolving rapidly removes much of the skin, through the potato coming in contact with the container, a stream of cold water constantly playing upon the potatoes during the process.

The spuds then drop through a chute onto tables on the lower floor, around which 15 or 20 women and girls stand with knives removing the last vestige of skin. Next in order

comes the slicing process, done by machinery, the pieces of potatoes then falling into a long tank containing clean, cold water.

From this tank the slices are taken and placed in wire-woven containers and then dipped in boiling water where they remain but a few minutes. Then upstairs into the spreading room where at a long table women, girls and men quickly spread the slices on wire-meshed trays.

From the spreading table it is but a step to the drying compartments, in which the potatoes remain for from 12 to 15 hours at a temperature not under 120 degrees Fahrenheit or over 150 degrees.

Upon being taken from the dryer the slices are poured into tin containers and afterwards boxed for shipment.

Wednesday's run was the best made thus far, the crew forking up 140 sacks of potatoes, averaging 115 pounds to the sack.

Inasmuch as the contract for the 30 tons ordered by the war department must be filled by June 1, Farm Adviser Christiansen has found it necessary to at times work the women employees overtime, securing permission to do so from Governor Stephens in view of the work being a "war emergency measure."

Quartermaster Southgate from Fort Mason made the plant an official visit recently and following a careful inspection pronounced the output as remarkably good.

As it requires six and two-fifths pounds of potatoes to produce one pound of dried potatoes 384,000 pounds or 192 tons are needed to fill the government order for 30 tons. If an average of \$22 is paid a ton for the spuds, and that is a fair average, the growers will realize \$4,224 for the tubers required for this one order.

## University Graduate Writes of Experience at the Front

Thomas G. Chamberlain, a graduate of the University of California of the class of 1915 and now a second lieutenant in the Coast Artillery Reserve Corps in active service with the American Expeditionary Forces in France, has written of his experiences at the front:

"Our trip across the Atlantic was not without incident, and as a result it was recorded that one of the kaiser's submarines should forever remain a submarine.

"After landing we had an unfortunate experience with gas which cost us eight men. Since then, we have moved from place to place, and have seen France and her people. A fine country.—A great people!

"Six weeks I spent at an anti-aircraft artillery school. The school was held in one of these old palaces built by Louis XIV. With its beautiful paintings and statues and tapestries, its large gardens and lawns and lakes, its underground passages and



wine cellars (now dry), it made a very picturesque place for a school.

"After the school I had a trip to the front. For two weeks I lived at an anti-aircraft battery quite close to the line. I saw much firing; had my baptism of fire; visited the front line trenches; fired a machine gun; saw some thrilling fights between planes; and took a long ride in a plane.

"All officers visiting the front have to write a report on their observations for the general staff. So when I returned, I had plenty to do for a time. From a law-note to an artillery report is quite a jump.

"Several times I have visited Paris, and it is certainly a wonderful city. My visits there have been enlivened by the air-raids and the firing of the long range guns.

"At last my battery is in the field and we are 'doing our bit' in what is, without doubt, the greatest battle ever fought. In the language of the pollu, 'ils ne passeront pas?'"

#### SORGHUM SYRUP

The state has long been asking for information as to the production of sorghum syrup. The agricultural station is meeting this demand in Circular No. 198, "Syrup From Sweet Sorghum," by W. V. Cruess. It refers to the value of the sorghums in the manufacture of silage only incidentally and gives explicit information regarding crushing of the cane and manufacture of the syrup. Illustrations are given showing details of evaporators, skimmers, finished construction, and other appliances needed in syrup manufacture. As to returns from sorghum production the circular approximates as follows:

Yield of 14 tons per acre, equal to 12 tons stripped cane.

Yield of 11 gallons of syrup per ton of stripped cane (or 132 gallons per acre).

A season of 30 working days.

That factory has an average capacity of 160 gallons to 170 gallons per day or about 5000 gallons for the season. This would represent about 40 acres of sorghum.

#### BEE PASTURE IN SANTA CRUZ

Farm Adviser Washburn of Santa Cruz County, with Prof. Coleman, bee specialist of the state university, have just concluded a survey of Santa Cruz County. They found that the country is abundantly supplied with both honey and pollen plants blooming in succession throughout the year. The mountains are covered with manzanita, wild lilac, coffee berry, poison oak, maple, and laurel with wild alfalfa or deer weed on all the open hills and good sage range upon the sand hills. For apiary sites there are many warm, protected nooks in the canyons and on the hills, with an abundant water supply.

While not more than a hundred colonies of bees are to be found in the county at the present time, it is estimated, very conservatively, that the bee pastures here will easily support 10,000 colonies or more. Ten thousand colonies would produce over 2,000,000 pounds of honey every year which is now going to waste.

#### WATCH YOUR FIREWORKS

Believers in the old-fashioned Fourth must watch their steps this year because of the regulations of the federal explosives law. The small boy may still have in his possession toy paper caps, sparklers, serpents, Chinese fire crackers, etc., "costing not more than ten cents per package." Fire crackers of larger size may be sold singly but none over five inches long by three-fourths inch in diameter. Every retailer of fireworks must secure a federal license. The United States explosives inspector for California is John H. Griffin, Madera.

#### FIRE PROTECTION

The agricultural experiment station of the college of agriculture is issuing Bulletin 295, "Fire Protection for Grain Fields, With Special Reference to Fire Protection Appliances for Grain-Harvesting Machinery." It is by Woodbridge Metcalf. From it we quote the following six rules:

Six Rules for Prevention of Fire in Grain Fields

Rule One—Keep your machinery in repair, well lubricated and provided

with an air clarifier and a good spark arrester. Hot boxes and hot carbon cause 30 per cent of grain fires.

Rule Two—Always have at hand on the harvester at least two good chemical fire extinguishers. They keep little fires from "growing up."

Rule Three—Don't smoke in the fields. Tobacco may be satisfying, but it's "hot."

Rule Four—Break up big fields by

cutting hay strips at intervals while grain is green. These give you a chance to fight and confine fire to a small area.

Rule Five—Plow several furrows around your grain field as a fire break. Your neighbor may not be as careful as you are.

Rule Six—Help organize your community and install fire fighting equipment at convenient points. Get ready now. After a fire starts it's too late.

## To Prevent Kernel Smut of Sorghum

The sorghums, kafirs and related plants are frequently attacked by a fungus which causes the destruction of the kernel. This is known as kernel smut. The infected grains are somewhat enlarged as compared with the normal, and upon examination will be found to consist of a very large number of small brownish particles. These are the spores of the fungus which have been developed in the kernel.

The sorghums and kafirs seem most susceptible to the disease. The milos are practically free from the smut.

The injury comes in the destruction of the kernel. Frequently five to 15 per cent of the heads in the field may be smutted. This amounts to an important decrease in the yield of grain. In experiments carried on at Columbia, by the University of Missouri college of agriculture, the amount of smut produced in various varieties has been from 30 to 60 per cent.

The smut spores are distributed on the sound seed of the sorghum. When the seed is planted and germinates, the smut spore also germinates and produces the fungus. When the plant develops to maturity, the smut fungus produces its spores in the developing seed of the sorghum and its spores will be distributed upon the sound grain planted the following season.

Since the disease is carried on the seed, seed treatment is an effective remedy. It is sufficient to immerse the seed for a few minutes in a solution of formaldehyde and water. The solution used is one pint or pound of formalin, or 40 per cent formaldehyde, in 30 gallons of water. Instead of immersing, the seed may be sprinkled with this solution. After this it should be covered for a few hours. Then the seed may be spread out to dry.

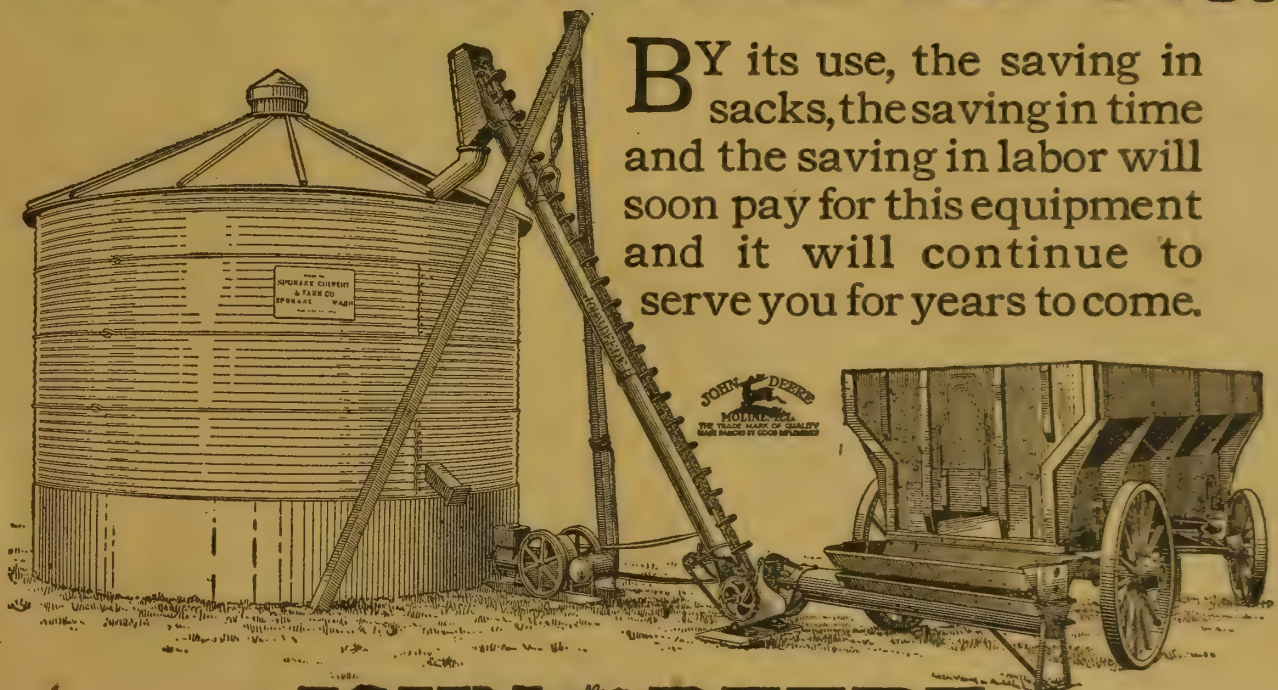
Since a certain amount of this smut is commonly found in the field, it is advisable to treat the seed

#### CLEAN UP, PAINT UP

Owing to the great number of school boys who will aid in farm work this year an organization has been formed, with St. Louis as headquarters, which is termed the National Clean Up and Paint Up Campaign Bureau. The bureau states as a reason for its existence:

Two hundred and fifty thousand boys will be placed on the farms of the country during the coming season. In justice to these boys and as a guarantee to the communities to which the boys will return at the close of the summer season, the state council and the state director of the Boys' Working Reserve must see that the boys are placed only on such farms as will afford wholesome housing facilities. All studies that have been made of farm housing conditions point to the fact that farm housing conditions are startlingly unsatisfactory at the present time. Health authorities have often called attention to the very large proportion of typhoid fever in the cities of the United States which is caused by the return of individuals from the farms or country villages at the close of the summer season. The investigation of the housing conditions on farms to which boys are to be assigned by the Boys' Working Reserve and the state council is clearly a question for which the state council and director of the Boys' Working Reserve are alone responsible.

# LET THE MONEY IT SAVES PAY FOR THIS ELEVATOR.



BY its use, the saving in sacks, the saving in time and the saving in labor will soon pay for this equipment and it will continue to serve you for years to come.

## JOHN DEERE TUBULAR STEEL ELEVATOR

It handles all small grains—wheat, oats, rye, barley, shelled corn, flax, rice. It has big capacity—it elevates 15 to 20 bushels per minute—handles the biggest load in six to eight minutes time. This big capacity is secured at comparatively low elevator speed.

It serves you when marketing your grain, as well as when harvesting it—elevates from the wagon into tanks, granaries or cars—elevates from tanks or storage bins into wagons. Operated by either engine or horses, its purchase ordinarily does not result in extra expense for power. A team of horses or a 2½ H. P. engine or larger will operate it.

The hopper, of big capacity, can be folded up out of the way when the load is driven up. Lower the hopper and the elevator is ready for duty. Backing the wagon is unnecessary. Hopper is provided with an adjustable feed by which the volume of grain being elevated is accurately controlled—you can quickly adapt the elevator to the power you apply.

Built of steel almost entirely, it will not warp or decay. The elevator proper is made of 3/8 in. steel well-casing, 6½ in. in diameter. It will never wear out. Round steel flights run smoothly inside of casing. The heavy elevating chain is fastened to center of flight. Grain cannot get under chain or into sprockets—no grinding, cracking or spilling of grain.

Shafts which operate in self-aligning bearing cannot get out of line and cause heavy draft and breakage.

Portable outfit furnished for big ranches where quick transportation is required. Because of the many years it will serve you and its extremely low maintenance cost, the John Deere is decidedly the most economical elevator to purchase. It is a real solution of your grain handling problem.

Don't wait until too late to get a John Deere Elevator—see your John Deere dealer at once—get extra value by getting the best—the John Deere.

John Deere elevators are carried in stock by John Deere Houses at Portland, Spokane, Seattle, Boise and San Francisco.

JOHN DEERE, MOLINE, ILLINOIS

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and get literature fully illustrating and describing the John Deere Tubular Elevators and also catalog "Better Farm Implements and How to Use Them," a big 156 page book chock-full of valuable information on farming subjects. Write today. Don't delay.

JOHN DEERE PLOWS

Make Better Seed Beds



## IDEAL



## Green Feed Silo

LEAK PROOF :: PERMANENT

STUDY its exclusive features of construction as illustrated in our catalog. COMPARE the Ideal with other silos. LEARN WHY the Ideal will conserve your feed better—bring you a bigger return on your investment than the ordinary silo and do it year after year.

Catalog on request

**De Laval Dairy Supply Co.**  
61 Beale St. San Francisco

## SANTA ANITA RANCHO

Anoakia Breeding Farm

## Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahrudd we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahrudd, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

## Mammoth Jacks

We have for sale a number of two and three year old Jacks, big, growthy fellows of exceptional breeding and quality.

## Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

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## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

## REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes—we pay registration fee. Careful attention given to mail orders.

**Whittier State School**  
WHITTIER, CALIFORNIA

## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

**H. L. & E. H. Murphy**  
Perkins, Cal.

## Fourth Holstein Sale at Sacramento

Written for California Cultivator By C. A. Briggs



ON JUNE 5 and 6 at the State Fair Grounds in Sacramento the California Breeders' Sales and Pedigree Company held their fourth sale of pure bred registered Holstein cattle consigned by A. W. Morris & Son Corporation, Woodland; McAlister & Son, Chino; Henderson Company, Sacramento; J. S. Gibson Company, Williams; Buena Alta Herd, Oakland; Pacific States Corporation, Tulare; Bonita Stock Farm, Lodi; Gotschall & Magruder, Ripon; Rosamaines Rancho, Riverside. One hundred and twenty-three head were sold for a total of \$41,890, an average of \$340.57.

The sale was managed by Charles L. Hughes of Sacramento with Col. Ben A. Rhoades of Los Angeles acting as auctioneer. Col. "Cy" Clark of Modesto and Harold Rhoades worked in the sales ring. Owing to a combination of adverse conditions, the especially fine offering of splendid animals went for very low prices when quality and production records are taken into consideration. Prospects of labor difficulty and prevailing high prices of feed kept many buyers away, and bargains were the order of both days sales. The sellers took their medicine with grim smiles and good humor for "the buyers day" means the wide scattering of good blood and a future demand for pure stock at better prices. The "topper" was a splendid young bull from the A. W. Morris & Sons' herd, Segis Pontiac Abbecker, a 34 pound son of a 32 pound sire whose dam, dam's dam, and sire's dam average 32.91 pounds of butter in seven days. After spirited competition he was sold to R. C. Sturgeon of Tulare, a young breeder just coming into prominence as a buyer of the right kind of foundation animals. It is predicted that he is going to be a factor in still further putting Tulare County on the map as a leading Holstein center. He paid \$3200 for the privilege of putting this fine bull at the head of his rapidly growing herd. Next highest in price was Ontario Blonde Pietje from McAlister's Chino herd. She has just made a four year old seven day record of 30.07 pounds of butter with an average test of 4.08. She sold to the veteran breeder, E. J. Weldon of Sacramento for \$1700. V. L. Heath in charge of the Napa State Hospital herd was a strong bidder for good ones for his own foundation herd which he is starting on his new farm in Napa County. Another large new buyer was the Leeman Dairy of Sacramento.

Detailed statement of sales by consignments follows:

## Sales

Consigned by Gotschall & Magruder. Empress Alcartra Karlay, \$400, R. F. Guerlin, Tulare; Copa Alcartra Karlay, \$425, A. W. Morris & Son; Mosetta Segis De Kol Karlay, \$235, A. W. Morris & Sons; Lady Vale Segis, \$160, O. P. Gillian, Dixon; Gerben Beets, \$500, V. L. Heath, Napa; Segis Johanna Karlay, \$275, A. W. Morris & Sons; Karlay Netherland Glista, \$205, Geo. A. Smith, Corcoran; Queen Sadie Vale Karlay, \$300, A. W. Morris & Sons, Duchess Creamelle Johanna, \$401, David Salfeld, Stockton; Ruanna Dutchland Ormsby, \$165, H. C. Muddux, Sacramento; Bovud, \$625, V. L. Heath; May Canary Johanna, \$335, Leeman Dairy, Sacramento; Empress Bergsma, \$450, R. L. Holmes, Modesto.

Consigned by Rosamaines Rancho. Rosamaines Segis Pontiac, \$235, Frank Helm, Fresno; Stratford Blanche De Kol Segis, \$390, Gotschall & Magruder; Jetze Zwartthak Lady 2d, \$510, V. L. Heath; Adralla Walker, \$350, A. W. Morris & Sons; Sharon Netherland Acme 2d, \$365, G. P. Robinson, Sacramento; Lady Yoshida Netherland, \$200, O. P. Gillian; Princess Pontiac Tritomia, \$405, R. L. Holmes; Juliana Zozo, \$360, G. P. Robinson.

Consigned by McAlister & Son: Ontario Blonde Pietje, \$1700, E. J. Weldon, Sacramento; Queen Rosa Walker, \$785, Bridgeford Company, Knightsen; Korndyke Segis Lee Hengerveld, \$500, Frank Helm; Korndyke Segis Daisy, \$800, Gotschall & Magruder; K. S. P. Ina, \$175, Gotschall & Magruder; Inka Pontiac Pride, \$200,

Gotschall & Magruder; Duchess Segis Colantha, \$310, Gotschall & Magruder; Canary Segis Sadie Vale, \$315, Bridgeford Company; White House Belle 2d, \$490, Bridgeford Company; Vera Pietertje Sadie Vale, \$215, R. F. Guerlin; Etta Changeling Sadie Vale, \$800, Bridgeford Company, Knightsen; Abbekerk Brunnhilde Sadie Vale, \$500, R. F. Guerlin; Neva Segis Sadie Vale, \$325, Gotschall & Magruder; May Korndyke Sadie Vale, \$560, Gotschall & Magruder; Juliana Mooie, \$185, H. L. Pylman, Hood; Pauline Canary Model, \$300, Gotschall & Magruder; Lottie Korndyke De Kol Segis Lass, \$310, Gotschall & Magruder; Queen Emerald Segis, \$340, W. J. Higdon; King Lilith Sadie Vale, \$160, J. H. Miller; Queen Segis Zella, Gotschall & Magruder; King Sadie Vale Lyda, \$110, G. M. Pylman, Hood; Evelyn Raschen Inka, \$175, L. W. Bardsey, Tulare.

Consigned by Buena Alta Herd. Bonanza Pontiac Korndyke, \$215, H. C. Muddux; King Bonanza Segis Korndyke, \$205, H. G. Wendt, Fallon, Nevada; Terracelawn Beets De Kol Pauline, \$585, R. L. Holmes; River-view Bracelet Brett, \$605, R. L. Holmes; Buena Alta Queen Bracelet Ormsby, \$250, R. L. Holmes; Rosa Burke, \$410, R. L. Holmes; Lady Ivaloy 2d, \$210, G. P. Robinson; Lady Ivaloy Korndyke Hengerveld, \$185, W. J. Higdon; Nina De Kol Mutual Pontiac, \$260, V. L. Heath; Segis Marie De Kol 2d, \$240, R. C. Sturgeon, Tulare; Parthena Pietertje Walker, \$250, G. P. Robinson; Buena Alta Aaggie Ormsby, \$135, R. C. Sturgeon.

Consigned by Bonita Stock Farm. Queen Korndyke Artis Wayne, \$200; A. E. Greene, Hood; Stella De Kol Pietertje Ringwood 2d, \$290, Leeman Dairy, Sacramento; Sunnycraft Daisy Pink Capea, \$270, R. L. Holmes; Bonita Gelsche Pontiac, \$125, R. F. Guerlin; Creamcup Pontiac Cornucopia Ruth, \$220, A. F. Blanton, Laton; Daisy Woodcrest Hengerveld, \$275, E. J. Weldon; A. W. P. Princess, \$425, Wm. T. Miller, Ripon; Bonita Ormsby Aaggie, \$115, F. Ambrose & Company, Chino; Bonita King Segis Maid, \$95, G. P. Robinson.

Consigned by Henderson Company. Arles Culvert Brook Piersnia, \$200, H. C. Muddux; Artis Culvert Brook Netherland, \$195, Bridgeford Company; Artis Culvert Brook Mercedes, \$145, H. C. Muddux; Manteca Segis Pontiac, \$325, Gotschall & Magruder; Sunnyslope Duanna Wiltkop, \$250, Leeman Dairy; Grace Blacken De Kol 2d, \$210, Leeman Dairy; Honolulu Baby De Kol 2d, \$175, Gotschall & Magruder; Pietertje Niko Netherland Maid 2d, \$950, E. J. Weldon; Segis Butter Girl De Kol, \$205, H. C. Muddux; Eusebia Lakeside Burke, \$300, R. L. Holmes, Modesto; Lyons Bonnetrix Segis, \$200, E. J. Weldon; Artis Culvert Brook Mooney, \$160, G. M. Pylman; Erma Pietertje Netherland De Kol, \$140, H. C. Muddux; Pietertje 4th, \$220, David Salfeld; Stockton; Aaggie De Kol of Glen-naive, \$190, G. M. Pylman; Manteca Queen Lyons Walker, \$200, A. W. Morris & Sons; Lucy Oak Segis, \$220, O. P. Gillian; Alka Hengerveld Pietertje, \$265, E. J. Weldon; Marcella Pietertje 4th, \$220, David Salfeld; Dairy; Model Alban Segis Princess 2d, \$285, Leeman Dairy; Prilly Beauty Pietertje 4th, \$320, David Salfeld; Romeo Aaggie Pet, \$180, H. C. Muddux; Silverton Pontiac Almeda, \$175, R. L. Holmes; Manteca Fayne Walker Pontiac, \$200, G. P. Robinson.

Consigned by Pacific States Corporation. Tagus Korndyke Laddie Zella, \$210, V. L. Dolcini, Davis; Tagus Edna Rouble, \$400, Frank Helm; Tagus Julia Multertrue De Kol and calf, \$225-25, V. F. Dolcini; Pascoe Segis Pontiac, \$600, R. F. Guerlin.

Consigned by J. S. Gibson Company. Princess Ruth Alcartra, \$425, A. W. Morris & Sons; Segis Netherland Walker, \$600, A. W. Morris & Son; Lady Walker Segis, \$510, Leeman Dairy; Segis Creamcup Pontiac, \$280, A. W. Morris & Sons; Empress Parthena Korndyke, \$310, Leeman Dairy; Calamity Wayne of Oakwood, \$310, V. L. Heath; Juliet Zwartthak of Oakwood, \$155, A. E. Greene, Hood; Minnewawa Korndyke Frankette, \$245, V. L. Heath; Princess Niko Mechthilde, \$300, G. P. Robinson;

May Sarcastic of Linwood, \$230, V. L. Heath; Alpha De Kol of Linwood, \$375, Leeman Dairy; Betsy Creamelle Mercedes of Nevada, \$450, A. W. Morris & Sons; Sir Nancy Korndyke Alcartra, \$140, I. G. Zumwalt, Colusa; Sir Aaggie Alcartra Korndyke, \$165, H. C. Muddux; King Korndyke Pontiac Pietje, \$140, F. Ambrose & Company, Chico.

Consigned by A. W. Morris & Sons. Heil Pontiac Mechthilde, \$775, V. L. Heath; Foxy E. L. Prado, \$550, Gotschall & Magruder; Stella Pietje, \$410, Leeman Dairy; Farde De Kol of Lin-

## APPLETON Silo Filler



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Here's the best value in a silo filler ever offered you. We say this from 47 years farm machinery manufacturing. We know that the new Appleton, with its important new features, will prove the biggest labor-saving, time-saving and money-saving machine you ever bought. Built on the same quality basis as all the Appletons—the same tremendously strong, everlasting frame and trouble-proof construction; big capacity and light running qualities that make the Appleton always *outdo* and *outlast* other silo fillers. Sizes for 6 h.p. and up. Don't wait until you are ready to order. Write today for

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One on silos and silage crops. The other our catalog showing machines in color and describing the new features. H. C. Shaw Co., Dept. A, Stockton, Cal.

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King Pontiac Netherland Segis 3rd  
**CHOICE BREEDING STOCK FOR SALE**  
A. R. O. Records up to 34 lbs. Butter in 7 Days  
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Senior Herd Sire Juliana De Kol King Segis, Grand Champion Kings County Fair.  
Junior Herd Sire King Riverside Mead.

A. B. COMFORT - Guernsey, Cal.



Write for evidence from users and our Trial Offer. Ask your dealer for our Free Cow Book, "Bulletin 52." General Laboratories Madison, Wis. Dept. 3134

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Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.

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wood, \$325, Leeman Dairy; Esther Hengerveld of Linwood, \$380, H. E. Cornwell, Modesto; Empress Juliana Pet, \$250, C. A. Mille; Johanna Woodcraft Gem, \$275, Gotschall & Magruder; Della Fobes of Linwood, \$125, C. A. Miller; Hartog Creamelle De Kol 2nd, \$300, McAllister & Son; King Korndyke Pontiac Seeley, \$410,

W. J. Higdon; King Mead of Riverside 7th, \$800, L. W. Bardsley, Tulare; Segis Pontiac Abbekerk, \$3200, R. C. Sturgeon, Tulare.

Consigned by Henderson Company. Bessie Oak Segis, \$300, Leeman Dairy.

Consigned by Buena Alta Herd. Model Domino Glista, \$225, Bonita Stock Farm.

## Field Notes from the Live Stock Men

So successful was the National Milk and Dairy Farm Exposition at Grand Central Palace, New York, the week of May 20 that immediate steps were taken to hold the show again next year. Dr. Charles E. North, managing director of the exposition, announced that the next show will be held during the week of March 10, 1919. This exposition was staged not with the idea of making money but primarily to educate the people in the food value of milk and to bring about a better understanding of various situations for the dairymen. "That it has accomplished its purpose is best attested by the fact that there is a new feeling among the dairymen, farmers and public regarding the dairy situation," stated Dr. North, who was loud in his praises for the exhibitors, who laid aside all commercial interest to bring forth the educational factors of the milk subject.

Canary Paladin Vale 84403, pure bred Holstein matron, on her twelfth



Canary Paladin Vale and Calves

birthday presented her owner with twin heifer calves. She then proceeded to roll up a world's record for both butter and milk production in both the seven and 30 day divisions. She produced 810.3 pounds of milk in seven days, yielding 35.22 pounds of butter and in 30 days she produced 3100.2 pounds of milk yielding 131.31 pounds of butter.

Canary Paladin Vale's sire is Brightest Canary 37170 and her dam is Paladin Vale 76331. Her twin heifer calves are by King Pontiac Pelham De Kol. She is owned by a York state breeder, J. W. Vaughan.

Ideaze Pontiac Lass 238652 is the 33d pure bred Holstein cow to produce more than 40 pounds of butter in a week. Her official record for seven days stands at 715.5 pounds of milk, yielding 42.48 pounds of butter. She then continued and completed a 30 day record of 2811 pounds of milk yielding 141.08 pounds of butter.

J. W. Jamison of Los Angeles, and Taft, is starting an extensive herd of pure bred Hampshires. He has vast interests in Taft and Fellows.

Wm. Bernstein of Hanford, has an extra fine junior yearling Poland-China boar and some wonderful show prospects in the under year classes. His futurity pigs are splendid, and he intends to make the entire Pacific fair circuit.

C. J. Gilbert of Lancaster, Los Angeles County, has a very fine herd of Hampshires, and his pigs by Duke's Allen are certainly far above the average.

Donald Graham of Lancaster, has a splendid herd of Durocs. He recently purchased a wonderful show prospect, a junior yearling sow, from Ed Faust of Ohio. She farrowed ten extra fine pigs. Mr. Graham will exhibit a full herd this fall as well as one or two carloads of fat barrows.

The Southern California Duroc-Jersey Swine Breeders' Association will join together and show a carload of pure bred fat barrows, as well as their own individual herds, at the California Liberty Show.

The George Junior Republic school of Chino, will have a fine exhibit of Duroc-Jerseys at the fairs this fall.

The Llano Vista Rancho of Perris, has a great lay-out of breeding and show stuff. They are fitting a full herd for the various fairs this fall, along with two carloads of fat barrows for the California Liberty Fair. F. A. Langdon, the manager of the ranch, is superintendent of the swine department at the Southern California Fair to be held at Riverside.

The White Breeders' Companion beginning with the July, 1918 issue will be known as "The Chester White Journal." The change has been deemed advisable because the words "White Breeders' Companion," do not

signify the purpose of the paper nearly so well as the words, "The Chester White Journal."

O K L Albina 267383 has broken the record for fat production in the senior two year class of the division covering tests begun not less than 240 days from freshening by producing in seven consecutive days, 465 pounds milk containing 17.78 pounds fat. She freshened at the age of two wears, 11 months, three days, and began her test eight months after freshening. Her prior record, begun 40 days from freshening, is 482.7 pounds milk containing 18.92 pounds fat. Her sire is Ormsby Korndyke Lad 102469; her dam is Valley Farm Albina Cornucopia. She was bred by Ezra Holbert, Lake, New York; and is now owned by Julius Schmid, Montgomery, New York. In the senior two-year class of the eight months division, she displaces Miss Valley Mead De Kol Walker 250936, whose record begun 240 days from freshening is 404.2 pounds milk containing 17.066 pounds fat. Computed on the 80 per cent basis, the equivalent butter claimed for O K L Albina amounts to 22.22 pounds.

### FAT STEER SALE

Following the plan used in other counties in California in marketing fat hogs, the Monterey County farm bureau will institute a fat steer sale at San Ardo, Monterey County on June 15.

The farm bureau through Farm Advisor T. C. Mayhew has been in touch with the various meat packing establishments throughout the state who have signified their willingness to send representatives to the sale.

Arrangements have been completed for conducting the sale by Sales Manager J. H. Aniotzbehere. The stock will be graded and placed in pens and will be offered for sale to the highest

bidder. The farm bureau will charge one per cent commission on all sales to cover the expense of the sale. There will be about ten car loads of fat cattle for sale at that time and place.

This is the first sale of fat cattle exclusively which has been held in the state.

### MORE SILO CAMPAIGN

The Practical Farmer, Philadelphia, backing up the Indiana silo campaign, says the following editorially:

"Our first year of the war under modern conditions has taught us many things and shown us how things could be done which we believed before were impossible. Indiana is now planning to have erected 10,000 new silos within her boundaries this year. This number, according to previous rate of increase, could not possibly be built this year, but by launching a state campaign or a 'drive,' as we have come to call such efforts, more than likely the number will not only be attained but surpassed. Each county has been allotted, according to its dairy and stock interests, the number of silos it is counted on to have erected, and each of the 91 county agents in the state have their county and township silo organizations to see that the plans are carried out. The slogan adopted for the campaign is 'If you can't put a gun on your shoulder, put a silo on your farm.' Surely every previous argument in favor of silos is still good today and additional reasons exist why there should be a silo on every farm where live stock is kept. Don't say you have invested all your money in Liberty Bonds and can't afford it. Go to your banker with the bonds as security for a loan to pay for the silo. The money then will cost you not more than two per cent, and you won't have to be bothered hunting an endorser for a note—Uncle Sam's note will satisfy the bank. Look into this plan the next time you are in town."

### MUTTON SHEEP NOW LEADING

Sheep raising primarily for mutton production and secondarily for wool is steadily advancing in this country. At the present time 45 per cent of the sheep belong to those of the mutton blood, 35 per cent to those of fine wool, and 20 per cent to the cross-breeds. Ten years ago the mutton sheep were 35 per cent of all sheep, fine wool sheep 41 per cent, and cross-breeds 24 per cent, and consequently,

during this period, one-tenth of the national flock has changed from wool to mutton as the chief purpose. While mutton sheep have thus increased their percentage of all sheep by ten during as many years, fine wool sheep have lost 6 1/2 from this percentage and the cross-breeds 3 1/2.

The so-called half-and-half system is the most common in use and the most satisfactory in renting dairy farms in representative dairy regions near Chicago studied by farm management specialists of the United States department of agriculture. Generally speaking, under this system the landlord supplies the land, the tenant the labor, and each shares the expenses and income equally. The study was made on 143 farms in Green County, Wisconsin, and Kane County (the Elgin district) Illinois, where dairying is a comparatively old, well developed and profitable industry. In the report of the study, published as Bulletin 603 of the department, it is brought out that while this system is particularly applicable to the regions studied, it is believed to be suitable in dairy sections generally.

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Has Imitators But No Competitors

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Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

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California Wonder

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A fine straight one, bred right, priced right

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to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynlyn.

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One at the head of your herd will pay  
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Senior Sire: Imp. You'll Do Circus  
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"Her product is of the very highest quality, obtained on the most economic basis, and commands the best prices in the market. The grain of her rich, golden butter is natural, and not broken down by artificial coloring matter."

## Breed Leaders

Every breed of livestock has its outstanding character the same as the human kind. A great dairy cow has proved her ability to produce anywhere up to 15 tons of milk annually; the trotting horse has secured his record around two minutes; the beefmaker has shown his ability to make the least amount of feed into the greatest amount of food; swine, sheep and others of the livestock family have shown themselves great characters. In addition—and here is where their worth is proven—these animals can transmit their productive power to their offspring.

Beginning with the issue of August 4 the Cultivator gave an account of Pieterje Bloom of the University Farm dairy herd. Some things she has done and more that her daughters have done were chronicled. She was a most worthy leader in this series of articles. Others of her kind follow. More of the "handsome is as handsome does" type of animals will be given in the columns of the Cultivator during the next few months.

Written for California Cultivator By C. A. Briggs

### JOHNSON'S DEFENDER



THE renowned Defender, grand champion at the International, was any better than his descendant. Johnson's Defender, owned by F. M. Johnson of Napa, then he was a

smoothness and mellowness is immediately noted by hog judges both amateur and professional. The ring judge at the California state fair, 1917 recognized his worth and outstanding quality by pinning the junior champion and reserve grand cham-



Johnson's Defender

dandy, for Johnson's Defender is some boar. As an individual he is nearly a perfect specimen of the Duroc-Jersey breed with the true high arched back and great spring of ribs indicating heart and lung capacity. He is good in shoulders and hams, is deep and wide with a typey head set firm and well on the shoulders; he is wide between the eyes, has good ears and stands well on his feet. His remarkable

pion on him. J. R. Conway of Westfield, Iowa, has the honor of breeding him. He was sired by Conway's Defender who was a son of Defender, a boar that has sold twice for \$5000. His dam was Choice Belle, a splendid animal. She was sired by Fancy Crimson Wonder who was one of the largest of the Crimson Wonders. He comes of royal blood and is a credit to his breeding.

### Up to Us

From Address by Food Administrator Hoover at the National Milk and Dairy Farm Exposition at New York.



AM very glad to have this opportunity of meeting the representatives of an important section of the dairy industry. I wish to take advantage of this opportunity to discuss with you the world situation of the dairy industry and the service that the dairymen of this country are morally drafted to fulfill.

If you could stand in the middle of Germany today and survey the land to the borders of Europe you would discover its whole population of 400,000,000 human beings short of food. Where Germany has overrun its borders millions of people in Poland, Finland, Serbia, Armenia and Russia are actually dying of starvation and other millions are suffering from under-nutrition. Still others of these millions outside the German lines, that is, our Allies and neutrals, are living on the barest margins that will support life and strength.

This, the most appalling and dreadful thing that has come to humanity since the dawn of civilization, is to me the outstanding creation of German militarism. Yet the Germans themselves are not the worst sufferers. They are extorting at the cannon's mouth the harvests and cattle of the people they have overrun, leaving them in desolation. I am convinced that if the war were to cease tomorrow the toll of actual dead from starvation and its attendant diseases within the German lines would double or treble the 5,000,000 or 6,000,000 of men who have been actually killed by Germany and her allies in arms. The 10,000,000 people in occupied Belgium and Northern France would have died of starvation had it not been for the

action of the nations at war with Germany in the maintenance of these people of a pitiable relief. But this is only one part of the whole story of misery, for the sinking of the world's shipping is reverberating privation in some direction into every corner of the globe.

Of all the food industries of Europe, there is none which has been so stricken by the war as the dairy produce. The human race through scores of thousands of years has developed a total dependency upon cattle for the rearing of its young. No greater catastrophe can happen to a people than the loss of its dairy herds, for the total loss of dairy produce means the ultimate extinction of a people. The German people supported their herds by the import of feed stuffs from their neighbors. This being cut off by war, their produce in meat and milk would have fallen to a low ebb indeed had they not supported themselves to a considerable degree by stealing the cattle of the populations they have overrun. I have had Polish and Serbian cattle in German pastures pointed out to me with pride by German officers. I witnessed for years the stealing of Belgian and French cattle. In Belgium alone the herd diminished from 1,800,000 to 700,000 in three months of German occupation. At that point the protests of the relief commission held it in check. But in Northern France absolutely all of the cattle were taken before the relief commission arrived. The French men had been drafted out of this region and there was therefore an undue proportion of women and children. There were, in fact, over 800,000 children under 12 years



## Elliott-Brant Rancho Guernseys

We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.

We have calves from A. R. cows with different sized records up to 750 pounds of butter fat. Our prices are reasonable and are based on breeding and records. Write and tell us your needs and we will tell you how we can fill them.

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As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

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Bred for Range Purposes and of  
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Show Herd won highest honors  
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Visitors welcome — information  
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## Holstein Bulls

SIR PIETERJE ORMSBY CANARY heads  
the herd. He is by Sir Pieterje Ormsby  
Mercedes and out of a dam that made  
862.88 pounds butter in one year as a three  
year old, and she in turn out of a 1009.87  
pound cow. His three nearest dams aver-  
age 19,496.7 pounds milk and 877.29 pounds  
butter in one year. A few of his sons for  
sale.

**The McCloud River  
Lumber Company**  
McCloud, California

of age and, in addition, many old people who had to have the most careful sustenance. One of the first duties of the relief was to undertake the import of milk in order that these children might be saved. We found that in the terror under which these people lived the average period of breast feeding was under four months. We have therefore for nearly four years been sending them American condensed milk, not in single cans, but by scores of thousands of tons. There has been scarcely a child born in the north of France, and few in Belgium, whose continued life has not been dependent during all this period upon American condensed milk. Every American would be thrilled could he but see the gratitude which French mothers daily express over the pitiable ration which enables their children to survive. This stealing of neighboring cattle by Germany will now, with Russia at her mercy, go on with an accelerated pace. Do not let us deceive ourselves that any shortage of her own cattle will bring the war to an end.

All this is an exhibit of the character of forces from which we are struggling to purge the world. To do this therefore we must concern ourselves daily with the food situation in the Allied countries. Our obligations to them are not only as a matter of humanity but as a matter of their maintenance in our common struggle. It is worse than folly to put 5,000,000 of our boys into France if the civilian population of our Allies is not also to be maintained in strength and morale with our food. We are also interested in the neutral countries from the point of common humanity.

The Allied countries before the war supplied their dairy products from imports as well as domestic production. Their imports came from Holland, Denmark, Siberia, Australia, the Argentine, New Zealand, to some extent from Canada, but comparatively nothing from the United States. The exports from Holland and Denmark have been largely cut off by embargo against the import of feeding stuffs to those nations in order to prevent their also supplying Germany. Siberia is of course isolated. Australia, New Zealand and the Argentine represent journeys which require from two to three times as much tonnage of ships as do our own markets to bring the same quantities. Dairy products still flow from these remote markets to the Allies although the transport of grain has been largely abandoned. But the growing shortage of shipping, the increased demands to transport the American army, might at any time necessitate such a final economy in shipping as would drive these demands upon us.

The shipping problem has, however, had a wider influence than the jeopardy of direct imports of dairy products in its effect upon Allied supplies, for their own cattle are much dependent upon the import of feed from overseas. In the struggle of all European populations to maintain or increase their bread grains in the face of a shortage in labor it has been necessary for them to diminish their production of feed for their animals. By the destruction of shipping it has been impossible for them to maintain the volume of their feed imports. In order to reduce this drain on shipping and to find immediate meat supplies there has been an enormous reduction in the number of cattle in all of the countries at war. Every nation in Europe has endeavored to protect its dairy herds, but the reduction in feeding stuffs has necessitated the placing of cattle on rations of a more drastic proportion than that of human beings. The result has been that while the actual number of dairy cattle shows less proportional diminution than that of the total cattle, the actual reduction in the milk production is of much larger proportions. I doubt whether today the dairy production of Europe as a whole is 30 per cent of the pre-war normal, and that of the Allies is 50 per cent of normal.

In consequence of all these forces the dairy supplies of the Allies are much diminished. They have met this situation by drastic reduction in consumption of dairy products, by driving the fresh milk into the hands of the children and by the substitution of margarine for butter. Their position is not yet acute and while it represents privation of many indi-

Continued on Page 739

## 30 Head Registered Guernsey Cattle FOR SALE



Owing to the unsatisfactory labor conditions, we have decided to sell 30 head of our GUERNSEYS. This consignment consists of a few good aged cows in calf, 12 head heifers two years past, now on test, average production for May, 1078.5 pounds milk. These heifers are bred true to type, nicely marked fawn and white, and show splendid udder development, most all safe in calf and are from high producing dams. They are sired by Langwater Emigrant 14076. His dam has A. R. record of 13,352 pounds milk, 626 pounds butter fat. They are also granddaughters of Imported King of the May 9001. There are six heifers coming two, bred, six bull calves and several heifer calves, six months or under, also one bull of serviceable age, whose four nearest dams have A. R. records that average 13,934 pounds milk, 677 pounds butter fat. These GUERNSEYS are of the great May Rose family, are direct descendants of Imported May Rose King and Dolly Bloom. This is the banner show herd of the northwest, they having won first prize in Get of Sire, Produce of Dam and Breeder's Herd at the various fairs of Oregon and Washington, 1916 and 1917.

These GUERNSEYS are good specimens of the breed and are priced to sell. For further description and prices, write

**Middledale Farms**  
GOSHEN, ORE.

We are selling a hog that a farmer will want to buy at a price a farmer can afford to pay.

Write for illustrated  
booklet telling about our  
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### Large Yorkshires

Have large litters. Service boars of  
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The Best is Good Enough  
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**PIGS BY NOTED SIRES**

### DUROC JERSEYS

High Orion 221329, has a refused price of \$3,500; Great Wonder 180989, Grand Champion at Iowa; Giant Invincible 208823, heads Walmeyers Iowa herd; King Orion Cherry 80765, first Junior Yearling, Indiana and Ohio; King of Orions 240249, highest priced pig ever sold; Model Crimson Wonder 181217 a noted prize winner. Russel's Model 205512, second place at Nebraska.

GET ONE OF THEIR PIGS

**H. P. Slocum and Sons**  
Willows, California

## Poland Chinas, Medium Type

Choice breeding stock, both sexes  
from Panama-Pacific International  
Exposition prize winning strain; 12  
firsts, Junior Champion and Re-  
serve Grand Champion Boar, Jun-  
ior and Senior and Grand Cham-  
pion Sows, \$2145 cash awards.  
Write to

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**For Sale to Nurserymen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by July 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**For Sale**—Extra fine Valencia trees, ½ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, California. Phone, Anaheim Pacific 403-J.

**High Prices For Figs**—Insure a large crop of Smyrna figs this year by using plenty of Capri. Make reservation now for June-July delivery of guaranteed Capri Figs. Price \$6.00 per thousand. Write stating quantity desired. L. C. Collins, Ceres, California.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Valencia Oranges and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**For Sale**—5000 one year old seed bed stock. 150 Italian Cypress 5 to 7 feet balled. 100 Feljoa 3 to 5 feet balled. Enterprise Nursery, R. D. 2, Box 305, Pasadena.

**For Sale**—Florida Sour Orange Seed Bed stock. Clean thrifty stocky. M. H. Howard, Fullerton, California. Sunset Phone 323W.

**SPECIAL SHARPLESS AVOCADO TREES** Mother's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**Seedling Grapefruit**—Finest special type, cheap to close out. Fine trees. Also Eureka lemons. G. W. Sherwood, Fullerton, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### SEEDS AND PLANTS

**Bean Seed For Sale**—We have good seed beans on hand of following varieties: Limas, blackeyes, large white, small white, pinks, Teparys, Henderson bush, Mammoth bush. Now selling bean bags for fall delivery. C. C. Collins Company, Santa Ana, California. Sunset 71; Home 172.

**Early Amber Sorghum** makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

**Sudan Seed for sale**, 17½c, Amber cane 7½c; Feterita, Egyptian Wheat, Red and White Milo Maize, Dwarf White Milo Maize, yield 21 sacks per acre, S. Peruvian alfalfa. Large orders, wholesale prices. Hay in car loads. Write for circular. Box 501, Fowler, California.

**Plant a Few Acres of Dwarf Milo Maize for seed**. Good seed requires about 2 pounds per acre. Choice pedigreed Dwarf Milo, 10c per lb., in quantities of 10 lbs. or more. Fred M. Mahoney, Box 420, Tulare, California.

**Seed Potatoes**—Fine strains Oregon Grown White Rose, American Wonder, White Star, Burbank, etc. Write for prices and descriptive book. H. A. Hyde, Watsonville, Cal.

**Belladonna Seed for sale** in from 1 pound to 50 pound lots. Selected seed from strong thrifty plants. Prices reasonable. Address Belladonna Ranches, P. O. Box 1470, Los Angeles.

**Sweet Potato Plants**, Yellow, 500,000, \$2.00 per thousand, cash with order. Home Phone 833, A. T. Hooven, Anaheim.

**June Corn**—Squaw corn. Plant now. One pound 15c, 2 pounds 25c. \$10.00 per 100 pounds. Western Seed Company, 116 7th Street, Los Angeles.

**Yellow Sweet potato plants** \$1.50 per thousand. W. L. Lutz, R. 3, Santa Ana.

### FERTILIZERS

**Slacked lime** corrects sour, heavy soils, prevents gum disease and by correcting your soil wrongs, you get better results from your fertilizers. Alfalfa, beans and peas are lime plants and need lime. Slacked lime hits quickly. Price low for immediate shipment. Gypsum supplied. H. B. Matthews, 495 Douglas St., Pasadena.

### GOATS

**Blue Saanen male kid** five months old for sale, hornless, from 4½, 6 and 7 quarts choice grade milk goats. Mrs. N. D. McNeil, San Jacinto, California.

**Toggenburg Milk Goats**—Rae P. Williams, Federal Realty Building, Oakland, California.

### MACHINERY

#### FOR SALE—WHY BUY NEW?

**SAVE YOU HALF MATERIAL GUARANTEED**  
**IRRIGATING PIPE**—1000 ft. 4-in. at 16½c; 500 ft. 8-in. at 38c; 400 ft. 10-in. at 45c; 8-in. O.D. screw casing, 95c; 4-in. riveted 16c.

**WINDMILLS**—8 ft. \$29; 10 ft. \$39; 12 ft. \$55 to \$65; 16 ft. \$95 cost \$280 new; costs nothing to run.

**DEEP WELL PUMP, BULLDOZER**, 20-in. stroke, with 7-in. cylinder, 100 ft. 8-in. casing, rods, all for \$225.

**HOW'S THIS?** 25,000 gal. redwood tank, \$95; 1500 gal., \$22; galv. drums, \$4; 30 gal. hot water boilers, \$3.50; 8000 gal. heavy corrugated galv. tank, \$135; 900 gal. heavy riveted steel wagon tank, \$68; wagon tanks, \$28 to \$48; new, used redwood, galv. tanks, all sizes.

**ODDS, ENDS—CHEESE CUTTER**, \$5; automatic chicken feeders, \$2.50 capacity 50 chickens; large rendering kettle, \$10; alfalfa cutters, bone grinders, blower, cable; heavy log chain and drag hooks, \$10; big hay fork, \$6.75; low down tank pump, \$7.50; wheelbarrows.

**DEEP WELL PUMP, DOUBLE-ACTING AMES**, pumps more with less power, \$145, or complete with 7-cylinder 100-ft. 8-in. pipe and rods, \$375. Large Myers Bulldozer pump, \$78; small size, \$42.50. No. 4 vert. B. & J. two-step centrifugal pump complete for 50 to 75-ft. pit, \$195. Many others.

**USED PLOWS, MOWERS, RAKES**, cultivators, single disc riding plow, \$47.50; 14-in. Gilpin Deere riding plow, \$32.50; 4-gang Stockton, fine shape, \$27.50; spike harrows, \$16; mowers, rakes, \$35; bean cultivators, \$45; spring tooth harrow.

**BEEF DRILLS**—Ready to ship, \$39. Sundries, cheapest in town; material guaranteed. Office DEMMITT CO., 120 N. Main, upstairs. Yards 816 Yale. Phones 15191, Bdwy. 1984, Los Angeles.

**REMANUFACTURED PIPE**

All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

**WEISSBAUM PIPE WORKS**, 169 Eleventh St., San Francisco.

**Automobile Motors for Sale**—These used motors in fine condition; for stationary work, pumping or for tractor. Bargain prices. Big supply. Send for catalog. Economy Auto Parts Co., 490 Golden Gate Ave., San Francisco.

**For Sale**—1 Russell thresher, 30x50 fully equipped. 1 Rumely GasPull Tractor 15-30; both in first class condition and have had little use. Will sell cheap. L. A. Skiles, Neenach, L. A. County, California.

**Gasoline Engines**, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale**—Holt 1911 Sidehill combined harvester 16 ft. header 24 inch cylinder, \$500; cash or terms. B. Buckley, Berkeley.

**For Sale**—Stationary thresher complete outfit including engine. Ready for field. A real bargain will sell cheap. Route C, Box 82, Hanford, California.

### WANTED

**Wanted**—Motormen and conductors by Pacific Electric Railway. Age 18 to 35. Apply in person to Superintendent's office, 213 Pacific Electric Building, Los Angeles.

**Wanted by Expert Tractor operator and engineer**, lifelong farmer, married, good paying position, foreman, repair man or driver on ranch. Satisfaction or no pay. Have auto. M. E. Bonine, Whittier.

**Position Wanted** as foreman on orange ranch. 30 years experience, understands soils and trees, formerly seven years with San Dimas Nurseries, W. T. Preston, Glendora, Cal.

**Wanted**—2 row used corn cultivators. M. C. V., General Delivery, Hollister, California.

### LIVE STOCK

**D. E. Kellher**—Importer and Breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of yearling Hampshire rams sired by Walnut Hall and Butterfield Rams, purchased at Salt Lake, August, 1916, also a few yearling ewes of same breeding. Inspection and correspondence invited.

**For Sale**—Seventeen head fine young mules. Three yearlings past, five 2's past, nine from 3 to 5 years old. Gentle and halter broken. Heavy boned animals. Price for the 17 head \$1700. J. Frank Jackson, San Martin, Santa Clara Co., Cal.

**Sheep for Sale**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

### ENGINES

**Several New and Slightly Used Engines**, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

**For Sale**—One 15-30 Gas Pull Rumley engine, cost \$2000.00, will take \$1500.00. Abram Marron, Jr., Box 10, Oceanside.

### LUMBER

**Lumber-Sash-Doors-Plumbing - Supplies**—Building materials of all kinds. New and second hand. A. R. W. shingles 60c per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

### FARM LANDS FOR SALE

#### Attention Land Buyers!

Here's an excellent proposition: 40 acre farms selling for \$15 to \$25 per acre, long time payments, 6 per cent interest, in the best agricultural part of Snohomish County, where you have all the modern conveniences, paved roads, railways, schools, churches, mills and factories. This district has proven its worth by the many successful farmers now located there. We also have some beautiful water front 10 acre tracts. OPPORTUNITY knocks at every man's door ONCE, but believe me, it does not continue to knock forever nor does it pound the door down. For further information address the owners, BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

**No. 4501:** 50 acres Maryland mild climate, 5 woodland, 2 fine fruit, near railroad station, school, church and stores; produces wheat, corn, tomatoes, oats, etc. Two story shingle roof frame dwelling, 7 rooms, cellar, front and back porch, barn, corn house, shed, spring house, stable, smoke house, tool house, poultry house, tenant house. Near Baltimore. Price \$4000. Russell Realty Company, Baltimore, Maryland. Catalogue.

**For Sale or Exchange**—60 acres rich, alluvial silt soil. Level. Irrigated, ready for crop. Real alfalfa land. Domestic water on place. Plenty of irrigation water. 1¼ miles from town, churches, grammar and accredited high school. Half cash, half trade, anywhere. Make your proposition now. Chas. McNeely, Alpaugh, California.

**Fine level farm land**, California, 160 acres, best of soil. Plenty of water. Near oil belt. Close to McKittrick. We had an offer from oil company six years ago of \$150 per acre. Price now for quick sale \$100 per acre. J. H. Rule, 415 Canal Ave., Wilmington.

**Manteca soil** produces twenty-five tons tomatoes per acre. That's why Manteca has four canneries with two more projected. How much land do you want? Walter Buchanan, Route 2, Ripon, California.

**For Sale**—Fine Paying Lemon and Orange grove. Upland district, none better; 10 acres, ample water stock; good improvements. C. W. Knapp, El Centro, California.

**Thirty-five sacks** beans, thirty sacks corn, twenty-eight tons beets, twelve tons alfalfa, per acre on Manteca land. Grapes, peaches, olives, berries. Walter Buchanan, Ripon, California.

### POULTRY

**200 White Wyandotte 8-12 Week Pullets**, \$1.25, \$1.50, \$1.75, \$2.00; 200-260 egg trapneasted or prize. Guaranteed. June delivery. Hundred cockerels, pullets, breeders, chicks, eggs all breeds greatly reduced. Our early maturing winter layers grow rapidly into money makers. Red, Rock, Ancona, Minorca 25c chicks, 20c; 20c for 17c; 17c for 15c. Leghorns 2c cheaper. Ready weekly. Hens clearing \$5.00 yearly. James Beeson, Pasadena, Cal.

**Order Quick**—50 White Leghorns (best grade stock) by parcel post prepaid \$5.50; 100 for \$10. Brown Leghorns \$11. Buff Leghorns \$12 hundred next two weeks only. We hatch Barred and White Rocks, Minorcas, Reds for next five weeks. Send for circular and prices. They will interest you. Mission Hatchery, Campbell, California.

**Model Poultry Farm**, White Leghorn specialists, established 1903. We are now booking orders for May and June delivery of Baby Chix and Hatching eggs from our bred-to-lay stock. We still have a few 10 weeks old pullets to sell. Our prices are right. W. C. Smith, Prop., Corning, California.

**Book Your Orders for White, Brown or Buff Leghorns, Anconas, Barred or White Plymouth Rocks, Black Minorca chicks with the Stevenson Hatchery**, Watsonville, California.

**\$13.00 per 100 Barred Rox, Reds, B. Minorcas, White Leghorns \$9.00.** Terms \$2.00 with order, balance C. O. D. Ship Monday and Wednesday. A. G. Rowe, Inglewood, California.

**Black Orpingtons Lay**, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

**For Sale**—Brown Leghorn pullets, seven, six and five dollars dozen. Mrs. J. B. Guerard, R. D. 2, Box 26, Merced, California.

**White Leghorn Chicks**—Only two more hatches. Order quickly. All strong youngsters. J. H. Stubbe, Campbell, California.

**Buff Orpingtons, Buff Ducks, Bourbon Red turkeys**. The Ferris Ranch, S. Reservoir, Pomona, California.

**Eastman's Bred-to-Lay Barred Plymouth Rocks**. Hatching eggs. Fairmead Poultry Farm, Fairmead, California.

### AGRICULTURAL IMPLEMENTS

**A No. 2 Primrose Cream Separator** capacity 450 pounds per hour, has been turned over to the University to be sold for the benefit of the Red Cross. Any of our readers who need a new hand separator will do well to communicate with Professor F. W. Woll, University Farm, Davis, as it will be sold below catalog price if need be.

**IMPLEMENTS AND RANCH SUPPLIES**. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC., The Yellow Front. Established 1892. 112-118 S. Los Angeles St., Los Angeles.

### PIGEONS

**Pigeons**—White Kings, Giant Runts, mated and young stock. F. Sanderson, 1170 Bird Ave., San Jose, Cal.

### CATTLE

**For Sale**—Guernsey bull, Coras Reputation of the Rancho, 32102. Sire, Glendette of Pinehurst; dam, Cora May. Born December 18, 1914. Bred by Knickerbocker Ice Co., Crystal Lake, Illinois. We are going out of the dairy business. This bull for sale at a sacrifice, price \$300. Floribel Farming and Cattle Co., Box 71, Hanford, California.

**Guernseys**—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., Cal.

**SHORTHORN CATTLE, SHROPSHIRE SHEEP**, Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

**For Sale**—On account of dissolution of partnership will sell thirteen registered Guernsey cows. Choice individuals just in their prime. P. J. Weisel, Santa Fe Springs, California.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, Cal.

**Registered Holstein Bull**—Straight, strong constitution, well marked, good pedigree. Write to Sunnybrook Ranch, Willits, California.

**Registered Shorthorns**, cows with calves at foot, yearling heifers and bulls for sale. Prices on application. Fair Oaks Ranch, Willits, Cal.

**For Sale**—One of Tehama County's best dairy herds. All fine grade Jersey cows, also young stock. Will sell in part or all. John Risse, Los Molinos, California.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires** (registered)—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

**Elkhorn Farm Ayrshires**—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. E. E. Greenough, Merced.

**Five Fine Jerseys** for sale, three cows, two heifers, fresh and coming fresh, priced right. R. T. Waters, Box 66, Route 6, Bakersfield.

**For Sale**—One registered Guernsey bull four years old. Abram Marron, Jr., Box 10, Oceanside.

**Registered Holstein Bulls** of various ages for sale. Millbrae Dairy, Millbrae, Cal. Registered Jerseys—1 yearling bull for sale. J. R. Carhart, Fullerton, Cal.

### HOGS

#### BERKSHIRES GUERNSEYS GRAPE WILD FARMS

A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application. A. B. HUMPHREY, Escalon, San Joaquin County, California.

**Poland-China Hogs**—On account of the draft must sell 4 tried brood sows bred to an extra good son of I. B. A. Wonder. 3 at \$75 each and one \$150. Also two yearling sows big, smooth, long and bred \$65 each. Also 4 September Big Bob gilts out of an imported sow will breed to Meddling Wonder \$55 each. One February boar \$50, two at \$35 and two at \$25. 4 February gilts at \$30 each. All recorded, crated and transferred f. o. b. Allen M. Lester, Care N. M. Lester, Gridley, California.

**Poland-Chinas**—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

**"Billiken"** Chester Whites—The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 18 months old. C. B. Cunningham, Mills, California.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Rancho Rubio Durocs**—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for \$25.00. Elmer Lamb, Ceres, California.

**Mule Foot Hogs**, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California. "The Blue Gums."

**Duroc-Jerseys**—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.



## HOGS

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**Large Type Poland Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

**Duroc-Jerseys** — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

**Greenwood Farm Durocs** — "Size with Quality." H. C. Witherow, Palo Cedro, California.

**HEWITT'S BIG TYPE POLAND-CHINA** gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Berkshires**—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas** — A few good breeding boars. S. F. Williams, Orland, Cal.

**BIG TYPE POLANDS**  
W. H. BROWNING, WOODLAND, CAL.

## RABBITS

**Go Into Business for Yourself** — Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**A Fortune In Rabbits**—Have raised the price we will pay to \$3.00 per pair. Want you to raise them for us. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

**For Sale** — Rabbits. New Zealand and Flemish Giant, young stock. Paul Krueger, Watsonville, California.

**Rabbits, Remedies and Supplies.** Send for price list. Caldwell Rabbit Farm, Los Angeles.

## MISCELLANEOUS

**For Sale: Fruit Cars**—100 used fruit cars in good condition, size 3-ft by 5 ft. outside measurement, to fit track 25 1/4 inches; also 1500 feet 1/4 by 1 track iron. Price cars \$4.50, iron 6c per lineal foot, f. o. b. Santa Ana. C. C. Collins Co., Santa Ana.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

## PATENT ATTORNEYS

**Patents that protect** are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

## GOVERNMENT LAND

**Be Patriotic**—Raise stock. Oregon, California openings. Valuable land marked plainly on County sectional map. \$2.50 any county. Booklet Free. Joseph Clark, Sacramento, California.

## NATIONAL EGG LAYING CONTEST

By T. W. Noland

Missouri Poultry Experiment Station, Mountain Grove.

June is a good month to begin culling on the young birds. Feed is high and prices will probably be lower later on, as the cull hens will soon be placed on the market, as well as the rush of fryers. Look the birds over carefully for disqualifications, and symptoms of low vitality. Cockerels, not promising enough to keep as breeders, should be sold now, if weighing from one and one-half to two pounds. This will give more room for the pullets, and everyone is urged to keep all the pullets they have accommodations for. Feed them all they can eat, keep them growing that they may begin producing as early as possible.

## The Contest

Pen 36, S. C. White Leghorns from Missouri won the cup for May with record of 138 eggs. This is the highest record ever made by any pen in one month during the seven National Egg Laying Contests held at the Missouri state poultry experiment station. The total number of eggs laid in May was 5920 or an average of 19.7 per hen.

Following are the leading pens for each variety for May:

S. C. White Leghorns, Missouri, 138 eggs.

White Wyandotte, Illinois, 127 eggs.

Anconas, Missouri, 127 eggs.

S. C. Reds, Missouri, 126 eggs.

Barred Rocks, Michigan, 124 eggs.

S. Wyandottes, Missouri, 123 eggs.

Buff Wyandottes, Missouri, 123 eggs.

W. P. Rocks, Idaho, 122 eggs.

Black Orpingtons, Missouri, 117 eggs.

R. I. Whites, New Jersey, 116 eggs.  
S. C. Brown Leghorns, Missouri, 108 eggs.

Buff Orpingtons, Missouri, 107 eggs.

R. C. Reds, Missouri, 102 eggs.

Buff P. Rocks, Missouri, 94 eggs.

White Orpingtons, Missouri, 84 eggs.

Following are the ten leading pens to date:

R. I. Whites, New Jersey, 706 eggs.

Buff Orpingtons, Missouri, 701 eggs.

White Wyandottes, Missouri, 700 eggs.

Barred Rocks, Michigan, 680 eggs.

S. C. White Leghorns, Missouri, 677 eggs.

Barred Rocks, Missouri, 670 eggs.

White Wyandottes, Illinois, 662 eggs.

Anconas, Missouri, 660 eggs.

White Wyandottes, Missouri, 656 eggs.

S. C. Reds, Missouri, 650 eggs.

## Hens and the Land

Written for California Cultivator By Jean A. Koethen

**H**OW shall poultry production be maintained in the face of discouragements and handicaps of the greatest war the world has ever seen? How shall we get eggs for sick and wounded soldiers and poultry meat to supplement the inadequate supply of beef and pork? The Honorable Edward Brown, one of England's foremost poultry experts, who is now touring the United States in the interests of increased production, thinks he has the answer to the question, and if any one has it it should be Mr. Brown who has lived through 30 air raids on London and seen English specialists and farmers, panicky and bungling at first, finally settle down to the production of eggs and poultry sufficient for England's needs.

The solution of the problem, said Mr. Brown to an invited audience of poultry people at Exposition Park on May 24, does not lie with the specialist, but with the farmer and fruit grower, and then he made this astonishing statement: "The cultivated acreage of California is now supporting just one-tenth of a hen per acre." Think of that, you orchardists who are afraid to let hens run in the orchards for fear they will spoil your furrows! Think of that, you farmers who think hens are a bother and not worth feeding! Three hens to the acre, which would be 30 hens for a ten acre ranch, would increase our production 30 times and provide all the poultry products we and our allies need. Three hens to the acre would almost pick up their living if they were allowed to range. A little extra planting in the form of milo or feterita, kale and vegetables, added to what they picked up, would easily feed them.

This is the sort of poultry raising the English have had to come to, and Mr. Brown confidently predicts we shall come to it sooner or later. Intensive poultry husbandry, which he intimated had been borrowed from America anyhow, has almost disappeared. In its place are flocks running at large in field and orchard. Where hens are kept intensively green

feeds and vegetables are raised to supplement the inadequate amount of grain available. One expert feeds 50 per cent greens in various forms and finds that his hens lay fully as well as they did on a grain ration. Green feed and more range are the only solution the English have found to the vexed problem of a war ration.

But there are three sides to this question of range. The nation needs the hens; the hens need the lands (as range); and the land is even more in need of the hens. On this point also Mr. Brown was very emphatic. The relation of hens and land is as one to three; that is, a large number of hens kept one year on a given piece of ground leaves an amount of manure sufficient for three years' crops. He did not say how long the manure from three hens per acre would last, but it was inferred that at least this number kept constantly would be needed to keep the land in condition for growing crops. This is a lesson we Californians have been slow in learning, that land cannot produce fruit year after year without having the nourishment taken out by the orchards returned to it by poultry and live stock. In France and Belgium, where fruit production is very highly developed, this relation of live stock to fruit is so well understood that no one attempts to keep one without the other, and the finest orchards are those in which poultry runs constantly. When this system is followed a smaller number of hens is kept, but where is the use, argue the thrifty women of Flanders, of producing eggs without profit? Hens kept in this way may not lay quite as many eggs, but the eggs cost far less than when the hens are confined and fed expensive grains.

In concluding his address Mr. Brown stated that there is in Southern California a magnificent opportunity for growing market poultry. Here in America we have no market poultry worthy of the name. If one community of orchardists should take up this specialty and study seriously the raising of table poultry in their orchards the enterprise could be made immensely profitable.

## Storrs Egg Laying Contest

Storrs, Conn., May 30, 1918. Report for the thirtieth week ending May 29.

The hens in the laying trials at Storrs have yielded a little ground, but they are still in good order. Not only this, but they seem to have sufficient reserve; hence there is little doubt as to the final outcome of the competition. The total number of eggs for the thirtieth week was 4371, or a yield of 62 1/2 per cent; they laid 4578 last week and 4418 in the corresponding week last year. The Leghorn division struck hard last week and are still at it; they constitute 43 per cent of the birds entered in the contest, but are laying close up to 50 per cent of the eggs.

With the approach of summer weather, all flocks everywhere are likely to fall off a little in their production and unfortunately this cannot be entirely obviated. Some hints are so simple that when made the uninitiated consider them of only small importance. For instance, it is just as necessary that hens have water, clean fresh water, as to have feed. Add to this a bountiful supply of tender tempting green food, and then make a careful periodical examination for lice and mites and exterminate them and in most cases more eggs will result.

The three best pens in each of the principal varieties are as follows:

## Barred Plymouth Rocks

Jules F. Francias, 1170; Tom J. Adamson, 1118; Richard Allen, 1089.

## White Wyandottes

Obed G. Knight, 1249; F. W. Harris 1062; Brayman Farm, 1060.

## Rhode Island Reds

Richard Allen, 1176; Pinecrest Orchards, 1042; Chas. H. Lane, 1023.

## White Leghorns

A. P. Robinson, 1124; J. O. LeFevre, 1105; Braeside Poultry Farm, 1093.

## Miscellaneous

Oregon Agricultural College (Oregon), 1196; Cook & Porter, (Buff Wyandottes) 1038.

## STUDYING POULTRY FEEDS

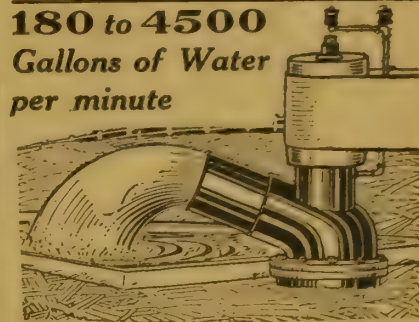
Several interesting experiments are being conducted by the poultry plant of the University Farm at Davis. Chief among these are feeding tests comparing various rice products with the standard cereals such as wheat, barley, milo and cracked corn. Paddy rice and brew rice are being compared with wheat as a scratch grain for laying hens, and rice bran and rice polish are being substituted in the mash for wheat bran, shorts and ground barley. Experiments are also in progress to determine the relative advantages of free range and confinement for hens.

Clean up often, fight lice and mites. Disinfect the brooder or coops every few days. Use only good grade dry feeds. Make the little chicks exercise for their grain by feeding in a shallow litter of alfalfa leaves. Keep grit and shell before them all the time. Exert every possible effort to secure sour skim milk or buttermilk for them. It should be their first drink. Sour milk is our greatest aid in counteracting bacillary white diarrhoea. Granulated charcoal is good to correct digestive troubles. Be sure the chicks get some. Put enough potassium permanganate crystals in the drinking water to give it a faint wine color. This will counteract many contagious diseases.

The collapse of Russia was partly due to the lack of food supply for the army and the people.

War is scraping our sugar bins and our granaries. The less we waste the longer it will take to empty them.

**180 to 4500  
Gallons of Water  
per minute**



## Layne &amp; Bowler Pump Features

Efficient oiling system.  
Enclosed shafting.  
Low speed roller bearings.  
Centrifugal motion.  
Steady even delivery.  
Simple, accessible parts.  
No intricate adjustments.  
All parts in balance.  
No pit required.

## TYPES

Low Lift —Medium Lift —Heavy Duty  
Motor or Belt Driven

ASK FOR CATALOG NO. 30.

**LAYNE & BOWLER  
CORPORATION**

900 Santa Fe Ave., Los Angeles



## The Eggs You Didn't Get

How can you expect a hen to lay 150 eggs a year or even 50 eggs if her vitality is sapped by lice and mites—all she can do is itch and fret and cost you money.

## DEVIL'S DUST

A Sure Killer of Vermin—  
safe and economical to use  
Sold Everywhere **GLOBE MILLS** Los Angeles, Cal.

## Try COULSON'S EGG FOOD

FOR GREATER EGG PRODUCTION  
FULL PARTICULARS IN FREE BOOK  
"CHICKENS FROM  
SHELL TO MARKET"  
**Coulson Co.**  
PETALUMA, CAL.

## Reliance Irrigation Meter

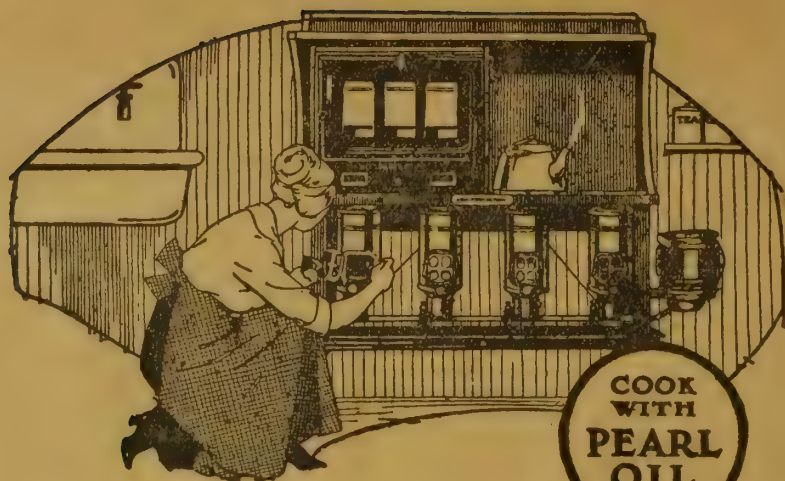
For Open Ditches, Reservoirs and  
Gravity Pipe Lines  
The Reliance Meter is recognized by water  
companies and irrigators to be the most ac-  
curate and impartial method of measuring  
water. Send for Copy of Water Watch.

**Hydrometric Co.** 955 North Main St.  
Los Angeles, Cal.

## MACHINERY

OF EVERY DESCRIPTION  
**BOUGHT and SOLD**  
**BUTTRESS & McCLELLAN**  
205-7 N. Los Angeles St. A-5473 Bdy. 8098





## Ready to Cook in a Jiffy

Just the touch of a match and your New Perfection Oil Cook Stove is ready for cooking. No waiting for the fire to burn up.

Easier to operate than a coal or wood stove: No smoke or odor; no dust or dirt. Bakes, broils, roasts, toasts,—all the year round. All the convenience of gas. And a cool kitchen in summer.

In 1, 2, 3 and 4 burner sizes, with or without ovens or cabinets. Ask your dealer today.

STANDARD OIL COMPANY  
(California)

## NEW PERFECTION OIL COOK STOVE

A New Perfection Oil Cook Stove means kitchen comfort and convenience. Ask your friend who has one. Used in 3,000,000 homes. Inexpensive, easy to operate. See them at your dealer's today.

### Easy to figure the Profits

Where in Western Canada you can buy at from \$15. to \$30. per acre good farm land that will raise 20 to 45 bushels to the acre of \$2. wheat—it's easy to figure the profits. Many Western Canadian farmers (scores of them from the U. S.) have paid for their land from a single crop. Such an opportunity for 100% profit on labor and investment is worth investigation. Canada extends to you a hearty invitation to settle on her

### FREE Homestead Lands of 160 Acres Each

or secure some of the low priced lands in Manitoba, Saskatchewan or Alberta. Think what you can make with wheat at \$2. a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed Farming and cattle raising. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature and particulars as to reduced railway rates to Supt. Immigration, Ottawa, Canada, or to

**GILBERT ROCHE**  
3-5 First St., Sheldon Block  
San Francisco, Cal.  
Canadian Government Agent.

**160 ACRES  
FARMS IN  
WESTERN  
CANADA  
FREE**

## HORSE SHOE TIRES

Guaranteed for 5000 MILES  
Pacific Rubber Co. Los Angeles

## WAR SAVINGS STAMPS DELIVERED TO YOUR HOME

Tear Out—Fill In—Hand Letter—Carrier—or Mail to Post Office

TO THE LOCAL POSTMASTER:—Kindly have letter-carrier deliver

to me on \_\_\_\_\_ for which I will pay on delivery:

\_\_\_\_\_ \$5. U. S. WAR-SAVINGS STAMPS at \$\_\_\_\_\_ each

(State number wanted) \_\_\_\_\_ (See prices below)

\_\_\_\_\_ 25c. U. S. THRIFT STAMPS at 25c. each.

Name \_\_\_\_\_

Address \_\_\_\_\_

W. S. S. COST DURING 1918					
April	\$4.15	July	\$4.18	Oct.	\$4.21
May	4.16	Aug.	4.19	Nov.	4.22
June	4.17	Sept.	4.20	Dec.	4.23
W. S. S. WORTH \$5.00 JANUARY 1, 1923					

## Household Department

### HAPPY HOOVERIZING

Written for California Cultivator  
By I. M. M., Fresno

The birds are singing gayly  
Roses are in bloom  
The chicken's cackles daily  
Drive away the gloom.

Onions growing stronger,  
Potatoes looking fine.  
Hoover can no longer  
Cause a tremble in our spine.

Eats a growin' plenty,  
Makes you sing a song.  
Pockets may be empty,  
But—there's the dinner gong.

Apples baked and apple sass,  
Hoover bread and rolls,  
Potatoes mashed and "sparrow grass,"  
And bean soup in our bowls.

Good by pies and "sich like,"  
Good by roasts and stew,  
Till "our boys" can win the fight  
For our own Red, White and Blue.

We will bake our victory dishes  
To help to win the war,  
We'll eat corn bread and "fishes"  
And garden sass galore.

### THE WOMAN COUNTY AGRICULTURAL AGENT IN ARIZONA

JUST at this time when food is getting scarcer, and victory depends so much upon the food supply, the work of the farm woman becomes more important than ever before, hence the plan to have county agents to help the farmers' wives just as we have had for a number of years county agents or farm advisers to help the farmers.

Maricopa County was the first county in Arizona, and among the first in the United States, to have such an official. Miss Imogene Neeley began her work in this county last summer, and results now are beginning to count.

Her first work was to encourage as much as possible the conservation, by drying and canning, of as much of the products of the farms, gardens and orchards as possible. There is quite a general impression that farm women as well as probably their town sisters, do not take kindly to the idea of a stranger coming into their kitchens and "bossing." No doubt they would be excused if they did object, so the plan followed by the women agricultural agents is to hold neighborhood or community meetings. These are sometimes held at the churches, schools, or occasionally at some farm home.

The plan as I said before, is to hold community meetings. At the first meeting, which is generally only fairly well attended, a beginning is made, a demonstration of the particular kind of work to be taught is given, and a community committee, usually composed of three women, is chosen to interest the other women of the neighborhood. The cooperation of these community committees and practically all women has been hearty.

Miss Neeley has driven her car over hundreds of miles of Maricopa County roads, good and bad, and held meetings in nearly half a hundred places. The first meeting is usually followed by a second in two weeks, and the second meeting becomes somewhat of an experience meeting, as reports are made by those who put into use the lessons taught at the first demonstration. The community committee has, in the meantime, induced many more women to attend, and then wheels are moving in a way that really begins to count. Just as an example. One of the projects upon which special stress has been placed is in the use of substitutes for wheat flour. Demonstrations were given before a total of 3008 women, and reports from a portion of these proved that a saving of ten pounds of wheat flour for each person in a family had been made—a period of six weeks.

Other projects have been along the lines of saving meats, fats and sugar. Beginning May 1, there will be four months of a carefully planned campaign in canning, preserving, drying, and jelly making.

These are the big things that in the aggregate count in the amount of food conserved, and count in two ways for the individual home that learns of better methods and more economical ways is a winner, while every ounce of food that is saved which otherwise would have been wasted brings us

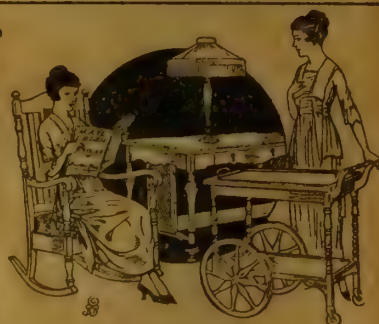
just a little nearer to the end of the war.

### CELLARS COOL AS THE SEASHORE

This applies not only to Arizona, for which it was written, but to hot sections in California as well. G. E. P. Smith, professor of irrigation engineering, University of Arizona, writes: "What has become of the cellar? The pioneer brought stock, implements, and even the windmill from his old home, but somehow he overlooked the cellar. The freedom from cyclones in Arizona does not imply that a cellar may not be useful in other ways. Nor should the fact that the red man had no cellar prevent his civilized successor from entrenching.

A cellar, like the seashore, has an equable climate. It is cool in summer and frostless in winter, a good place to keep milk and cream, potatoes and other vegetables, meat, fruit, the incubator, late-hatched turkeys, and a pressure tank for water supply to replace the unsanitary elevated tank.

A cellar need not be expensive. An eight-foot cellar requires six feet of excavation. For a cellar 18 feet square



## Write Today FOR YOUR COPY OF

**Barker Bros.**

Just Issued 1918-1919

## Catalogue of Furniture and Home Furnishings

This new home-furnishing guide has been prepared with the object literally of "sending our store" to those who are unable to visit it. Next to selecting your furniture and home furnishings upon our floors in person, this new catalog offers the nearest possible substitute.

The Book contains more than 100 pages and describes an immense variety of home-furnishings merchandise. Write for your copy today.

Be Sure to Address Mail Order  
Division No. 25

**Barker Bros.**  
ESTABLISHED 1880

724-738 So. Broadway, - Los Angeles

The House of Complete and  
Competent Home Furnishing Service.

## FRENCHGLOSS

### Is a Finishing Article for Home Use

It is used either with Starch or by itself for soft finish garments.

Its use gives all garments a smooth, pliable, lustrous wearing finish, that will keep fresh and clean from one-third to one-half longer than garments laundered without it.

You will find your ironing much easier and more satisfactory in every way when using FRENCHGLOSS. When used for starched garments you can save three-fourths of the amount of starch ordinarily used, besides having better looking clothes. You will also find that when garments have once been laundered with FRENCHGLOSS they wash much easier. The reason for this is that FRENCHGLOSS keeps dirt from working into the garments. If you boil your clothes, try dropping a couple of FRENCHGLOSS tablets in the boiler. It will surprise you the good it does.

FRENCHGLOSS is sold on a money-back offer: if not pleased with results your grocer will return your money. Price, 10 cents for a package large enough for six large family washings. By mail, if your grocer does not keep it.

**FRENCHGLOSS CO.**

1157 E. 12th St. Oakland, Cal.



### The Cultivator Patterns



8861

88387

8858

8619

8876

8852

8877

8861—Ladies' Waist. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The waist has a shoulder yoke which is more shallow at the front than at the back.

8387—Boys' Norfolk Suit. Cut in sizes 2, 4 and six years. The jacket has box plaits at front and back, and the separate trousers are included in the pattern.

8619—Ladies' One Piece Kitchen Apron. Cut in one size. The rounded extensions at the sides are lapped and buttoned over the hips.

8858—Ladies' One Piece Corset Cover. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The garment is all in one piece and it is to be slipped on over the head.

8876—Girls' Dress. Cut in sizes 4, 6, 8 and 10 years. The neck is slashed at center front so that the dress can be slipped on over the head.

8852—Ladies' Dress. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The waist is in regulation shirt waist style and the skirt is three gored.

8877—Ladies' Two Gored Tunic Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The tunic is opened at the front to show the underskirt.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT  
California Cultivator  
Los Angeles

only 72 cubic yards of excavation are required. Contract prices vary from 30 cents per cubic yard for soft earth requiring no pick work to \$1.00 per yard for hard caliche. Usually the farmer will make the excavation himself, using a slip scraper in part. The soft earth should be walled up and the caliche can be walled, but it is not essential. Excellent walls are made of plastered adobe. A new home is figured roughly at \$500 per room; the cost of a cellar will be the cheapest part of a house.

The city dweller is equally interested in a basement. A few of the best homes have comfortable basements which are used as living rooms during the hot summer afternoons. It is safe to say that the temperature will be from ten to 20 degrees cooler than that of the rooms above. Brick or cemented wall and a cement floor will make a cellar an ideal place in June for sewing machine, dining table, desk and bookcase. The writer knows one man who will nevermore build, lease or rent a home that has no cellar.



CANNING AND DRYING HINTS

Attractive labels sell the fruit. Take great care in putting them on. Paste should be put on one end of the label, not on the whole. Paste should be made of starch or flour; starch is to be preferred. Labels should not be wet or they will wrinkle. They should be straight on the cans, fitting well at top and bottom. Light colored labels are as a rule more attractive than dark ones. Put your name and address on label—if you have goods you are proud of and expect to sell another season.

Peach butter, pear butter, plum butter, apple butter, made of the less slightly fruit that will not bring the best of prices, will pay well if sold; they will pay even better if kept in the fruit press for use on wheatless bread.

If you have left overs of different kinds of vegetables from canning, put them together and can for soup vegetables.

The fresher and riper fruits are when canned, the better they will be and the less sugar they will take.

All dried fruits and vegetables should be stored in a dry, airy place away from insects and worms. Large tin cans or boxes, paper cartons and sacks make good containers.

Good dried fruit can almost be spoiled by poor cooking. Wash thoroughly; soak several hours; cook in water in which they have been soaked; cook slowly several hours to make plump and attractive and retain flavor; use as little water as possible and very little sugar.

Before going into the canning business, find out what your cans, labeling, fuel, marketing, etc. are going to cost.

Can vegetables and fruit as soon as possible after picking.

Don't have an empty preserving can in your home next fall.

Concentrate products so that each jar will hold as much food and as little water as possible.

Put up jams, jellies and preserves in glasses sealed with paraffin or paper; save regular tight sealing containers for concentrated soups, meats and vegetables.

Don't waste time and cans canning beans; they will keep just as well dry.

Potatoes, carrots, cabbage, onions, and such vegetables that can be kept by proper storage and grown through practically all the year should not be given place in cans needed for perishable stuff.

Dried corn and green beans are better than canned any day; but they take longer to cook. Try some this year.

If you have to buy your fruit and can raise tomatoes, try making tomato preserve and marmalade.

OF COURSE

A bellhop passed through the hall of the St. Francis Hotel whistling loudly.

"Young man," said Manager Woods sternly, "you should know that it is

against the rules of this hotel for an employe to whistle on duty."

"I am not whistling, sir," replied the boy, "I'm paging Mrs. Jones' dog." —Argonaut.

I'm but a cog in life's vast wheel  
That daily makes the same old trip,  
Yet what a joy it is to feel  
That but for me the wheel might slip!

'Tis something, after all, to jog  
Along, and be a first-class cog.

—Selected.



KELLOGG'S ANT PASTE

MAKES ANTS DISAPPEAR

A MAGIC PREPARATION

25¢ AT ALL DRUGGISTS



Seashore — Mountains

VACATION TIME

IS HERE again and many of us are planning to spend a goodly portion of that time at one of the numerous seaside resorts while others will prefer the mountains—

In either case the PACIFIC ELECTRIC RAILWAY offers unexcelled service to seaside resorts and direct connection to many mountain camps.

—Ask for Special Folders—

Pacific Electric Railway

### "BLIGHTY"

a new shirt with the Military touch and the Double-SERVICE cuffs



REGULAR AND REVERSE FOLD

THE HYNGE CUFF

A soft cuff. Both sides Right sides

You can reverse this cuff when soiled—and it wears twice as long—A feature of Blighty—the new

## HALLMARK SHIRT

On Khaki ground—stripe patterns that absolutely will not fade. And "Blighty" Fabric and Detail Quality is Kept Up. Ask your dealer.

HALL, HARTWELL & CO., Makers, Troy, N. Y.

Plant Your Potato Land When Crop is off to Rhubarb

If planted then you can expect BIG PROFITS by fall or early winter. OTHERS MAKING \$1,000 PER ACRE ANNUALLY—SO CAN YOU. Don't put it off any longer. June positively the best month to plant. Write

J. B. WAGNER, "Rhubarb Specialist" Pasadena California

The Cultivator costs only one dollar yearly

Don't Waste Food

Get a Stephenson Patent Cooler and have everything cool and wholesome.


No Ice Used

Low Temperature Maintained

by a patented water absorption process which cannot fail. It works according to an established LAW OF NATURE.

Write for interesting catalogue and prices.

L. Anderson Co., Mtrs. Martinez, Cal.



### Seashore — Mountains

## VACATION TIME

IS HERE again and many of us are planning to spend a goodly portion of that time at one of the numerous seaside resorts while others will prefer the mountains—

In either case the PACIFIC ELECTRIC RAILWAY offers unexcelled service to seaside resorts and direct connection to many mountain camps.

—Ask for Special Folders—

## Pacific Electric Railway

### Seaside Resorts

VENICE  
OCEAN PARK  
SANTA MONICA  
HERMOSA BEACH  
MANHATTAN BEACH  
REDONDO BEACH  
LONG BEACH  
SEAL BEACH  
HUNTINGTON BEACH  
NEWPORT BEACH  
BALBOA

### Mountain Resorts

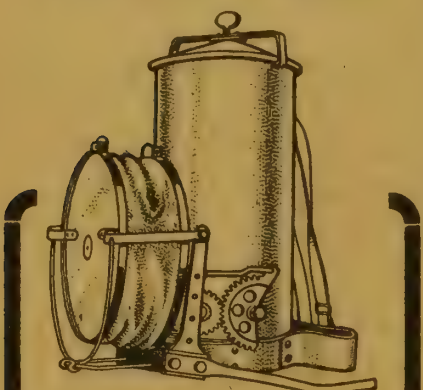
MT. LOWE  
CAMP BALDY  
HOEGEE'S CAMP  
GLENN RANCH  
COLD BROOK CAMP  
CAMP RINCON  
FOLLOW'S CAMP  
STRAIN'S CAMP and  
SAN BERNARDINO MOUNTAIN RESORTS



## Belladonna Raising Profitable

When it is taken into consideration that, when planted in rows three and one-half feet apart and spaced the same distance in the rows there are 3555 plants to an acre of Atropia Belladonna and that the leaves of this plant have not marketed for less than \$1.20 per pound (going as high as \$2.25 per pound) in the past three years it is not hard to conceive how a single acre planted at Pasadena yielded \$2400 in a single year on four cuttings of the leaves. Any intelligent boy or girl can operate a small planting of Belladonna in their spare hours and proper attention in the way of thorough cultivation after the plants are established cannot fail to bring good results. The Haas Seed Company, 1800 Lincoln Avenue, Pasadena, California, have a limited amount of high grade selected seed for sale. Any persons interested in securing guaranteed seed should write them for particulars.—Adv.

## American Beauty Dust Sprayers



## KILL Aphis, Red Spider, Corn Ear-Worm, etc.

Standard size .....\$16.00  
Junior size .....\$13.50

One week free trial—Money back if not satisfactory.

## Save Your Crops

Send for our book on pest control  
**The California Sprayer Co.**  
6001-6029 Pasadena Avenue  
Los Angeles.  
Reedley, California

## Macabee Gopher Trap



Small, simple, sure. At all dealers. If your dealer does not handle it, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid. Write for prices in larger quantities delivered free by parcel post.  
Mfg. by Z. A. MACABEE, Los Gatos, Cal.

## PIPE-PIPE

100,000 feet New and Second-hand Pipe and Casing.  
Pipe—1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 3 1/2, 4, 4 1/2, 5, 6, 7, 8, 9, 10, 11, 12, 15 inch.  
Casing—3, 3 1/2, 4, 4 1/2, 5, 5 1/2, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6 1/2-inch 20-lb. ten thread.  
Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 inch.  
All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

## ADAMS PIPE WORKS

Bay and Mateo Sts., Los Angeles, Cal.  
Phones: F 1917; Bdwy. 1264.

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

## Los Angeles Market

Los Angeles, June 12, 1918.

**BUTTER**

Produce Exc. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....40½

Dairy Exchange price past week on extras.

June	5	6	7	8	10	11
'18	40½	40½	40½	41	40½	40½

Rcts. wk. ending June 11, 291,600 lbs.

CHEESE										
Brokers prices:										
California fresh, lb.	.....	24								
Eastern Daisies	.....	26								
Domestic Swiss	.....	38								
Oregon triplets	.....	26@26 1/2								

EGGS										
Exchange quotations. Prices to retailers 2 to 3 cents higher.										
Fresh extras	.....									37
Pullets	.....									36
Dairy Exchange prices past week on fresh extras.										
June	5	6	7	8	10	11				
'18	38	38	38	38	37	37				
Rcts. wk. ending June 11, 3029 cases.										

POULTRY										
We quote to producers:										
Broilers	.....	25@30								
Fryers	.....	30								
Hens, small, 22; heavy	.....	26								
Ducks, lb.	.....	20@26								
Roasters	.....	30								
Roosters, old	.....	15								
Turkeys	.....	25@28								
Geese, young, lb.	.....	23								
Rabbits, live, 17@18; dr.	.....	40								

LIVESTOCK										
We quote cwt. f. o. b. L. A.										
Corrected Wednesday morning, June 12, by the Cudahy Company.										
Cattle—										
Beef steers, av. 1000-1100 lbs.	.....	11.50@12.00								
Heifers, good	.....	8.50@9.00								
Cows, good	.....	8.00@8.50								
Canners	.....	5.00@5.50								

Hogs—	
Av. 125 lb. ....	16.00
Av. 150 lbs  ....	16.50
Av. 175-225 lbs. ....	17.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.	
Prime wethers ....	11.00@11.50
Ewes .....	10.50@11.50
Lambs .....	14.50@15.00
Yearlings .....	11.00@11.50

POTATOES										
Wholesale selling price:										
Northern	.....	2.10								
Idaho Russets	.....	1.95@2.00								
New, lug	.....	.75@80								
Sweet, lug	.....	2.25								

ONIONS										
Wholesale selling price, cwt.:										
Bermudas, cr.	.....	1.15								
White	.....	2.00								
Crystal Wax, cr.	.....	1.50								
Garlic	.....	1.12								

VEGETABLES										
Wholesale prices:										
Artichokes, doz.	.....	60@85								
Jerusalem, lb.	.....	.74								
Asparagus, lb.	.....	10@11								
Beans—Wax, lb.	.....	5@5 1/2								
Ky. Wonder	.....	5 1/2@6								
Beets, sk.	.....	2.00								
Cabbage, lb., 1 1/2; sk.	.....	1.35								
Carrots, doz.	.....	.30								
Corn, sugar, doz.	.....	.60								
Cucumbers, bx.	.....	.90								
Egg Plant	.....	8@9								
Horseradish, lb.	.....	15								
Lettuce, doz.	.....	40								
Leeks	.....	35								
Mint, doz.	.....	40								
Onions, green, doz.	.....	25@30								
Peas, Tel., lb.	.....	.9								
Peppers, Chili, lb., 22 1/2; Bell	.....	30								
Parsnips, doz.	.....	40								
Parsley, doz.	.....	20								
Radish, doz.	.....	30								
Rhubarb, C. W. bx.	.....	1.25@1.35								
Romaine, doz.	.....	40								
Spinach, doz.	.....	30								
Squash—Summer, bx.	.....	1.00								
Tomatoes, cr.	.....	1.75								
Turnips, doz.	.....	50								
Watercress, doz.	.....	35@40								

FRUITS	
Wholesale prices:	
Apples—W. W. Pearmain .....	2.75@3.00
Apricots, cr. ....	2.25
Bananas, lb. ....	7@7 1/2
Cantaloupes; Ponies .....	3.00
Standard .....	3.50
Cherries, lb. ....	15@17
Currants, cr. ....	2.50
Figs, bx. ....	2.50@3.00
Gooseberries, lb. ....	8
Loganets, lb. ....	9
Peaches, cr. ....	2.00@2.25
Strawberries, tray .....	1.80



6.55-7.15, Grapefruit 1.70, lem. 9.00-9.70.  
St. Louis: 3 Val. 2 lem. Val. 5.35-6.90,  
lem. 6.70-10.00.  
Boston: 8 cars. Val. 5.40-8.30, lem.  
7.10-8.65.  
Cincinnati: 3 cars. Val. 5.90-6.50, lem.  
8.70-12.00.

June 6

New York: 17 cars. Val. 5.30-7.75,  
Sweets 2.50-6.25, Mikes 6.75-7.20, Grape-  
fruit 1.85-3.70, lem. 11.45-11.70.  
Pittsburg: 3 cars. Val. 3.75-7.30.  
Boston: 8 cars. Val. 5.30-6.85.  
Philadelphia: 2 cars. Val. 7.05-7.60.

June 7

New York: 16 cars. Val. 5.40-7.20,  
Sweets 5.55-6.05, Mikes 5.75-7.00, lem.  
8.15-10.45.  
St. Louis: 4 cars. Val. 4.70-7.25, lem.  
6.20-9.20.  
Boston: 5 cars. Val. 4.30-6.65.  
Cleveland: 2 cars. Val. 5.75-6.95.

June 10

New York: 23 oranges, 1 lem. Val.  
5.10-7.50, Sweets 5.50-6.40, lem. 6.40-9.90.  
Philadelphia: 7 oranges, 1 lem. Val.  
5.90-7.70, Seeds 7.15-7.65, Sweets 4.85-  
7.65, Sweets 4.85-7.05, lem. 9.10-14.35.  
Boston: 9 cars. Val. 4.00-7.05, Seeds.  
6.05, lem. 8.95-9.45.  
Pittsburg: 7 cars. Val. 5.45-7.25, lem.  
7.85-9.80.  
St. Louis: 3 oranges, 2 lem. Val. 4.25-  
6.75, lem. 8.60-7.90.

June 11

New York: 17 cars. Val. 4.45-7.60,  
Grapefruit, halves 1.40-1.65.  
Boston: 7 cars. Val. 5.10-7.35, lem.  
8.65-9.00.  
Philadelphia: 5 cars. Val. 6.70-7.50.

MARKET NOTES

All dealers in seeds whose stock  
amounted at any time during the past  
year to 500 pounds of vegetable seeds and  
5000 pounds of field seeds are required to  
report in all seeds stocks on hand on  
July 1. Make report to Bureau of Mar-  
kets, United States Department of Agri-  
culture, Washington, D. C. Blank sched-  
ule mailed under request.

Canners the United States over con-  
tracted for about 200,000 acres of toma-  
toes for the coming canning season. This  
is a material increase over that of last  
year.

In number of tomato canneries Vir-  
ginia leads all states with 179. Maryland  
follows with 160 canneries, and Indiana  
with 114, but Indiana's canneries handle  
over 30,000 cases of fruit which is nearly  
double that of Maryland or Virginia. Cal-  
ifornia's 38 canneries handle acreage of  
8513.

Wisconsin is the banner pea canning  
state of the Union. She has only 61 can-  
neries but handles the output of nearly  
33,000 acres. California has only seven  
pea canneries which handle the output  
of 1755 acres.

California yellow Bermuda onions are  
selling in Oregon for 1.40 to 1.75 per  
crate.

The state supreme court has upheld  
the constitutionality of the law creating  
the state market commission.

The Tulare County Canning Peach  
Growers' Association has fixed upon a  
price of \$55 for clings and \$45 for free  
stones.

California Lemon Club men have agreed  
to reduce the size of the lemon box to  
10x13x35 inside measurement. This will  
make the box conform to approximately  
the old 34 pound estimated weight.

Turlock reports her melons as growing  
fine and not injured by any spring frost.

It is estimated that this season's pro-  
duction of cantaloupes has run 175  
crates per acre or better. This is much  
better than the average of past seasons.

The tomato district of San Pedro, Los  
Angeles County will this year produce  
482 acres as compared with 250 last year.

The cantaloupe acreage of San Joaquin,  
Madera, and Merced Counties will be  
about 4245 as compared with 3120 last  
year.

Arizona has planted less acreage to  
cantaloupes this year than last but the  
condition is far better. It is estimated  
that her 1314 cars last year will be some-  
what increased. Shipping will not begin  
until last of month.

PARTIAL LIST OF CALIFORNIA FRUIT  
AND VEGETABLE SHIPMENTS

From post card reports to the Los An-  
geles branch of the bureau of markets,  
United States department of agriculture,  
report is made of the following ship-  
ment of cars of products from California  
for the week ending June 3: Apples 3;  
artichokes, 3; asparagus, 2; bananas, 1;  
cabbage, 30; cantaloupes, 30; carrots, 5;  
cherries, 45; cucumbers, 1; dried apples,  
3; dried beans, 1; dried olives, 1; dried  
prunes, 5; fresh peas, 2; fresh plums, 2;  
green string beans, 7; lettuce, 10; Mexi-  
can tomatoes into state, 2; mixed fruit,  
37; mixed vegetables, 53; mixed fruit and  
vegetables, 3; onions, 63; parsley, 1; po-  
tatoes, 30; raisins, 48; sweet potatoes, 1.

TOO INVIGORATING

Mrs. Smith (thoughtfully): "I'm  
afraid I shall have to stop giving  
Tommy that tonic the doctor left for  
him."

Mr. Smith (anxiously): "Why, isn't  
he any better?"

Mrs. Smith: "Oh, yes, but he has  
slid down the banister six times this  
morning, broken the hall lamp, two  
vases, a pitcher and a looking-glass;  
and I don't feel as if I could stand  
much more."

Grub-stake your home from the  
farm and garden; the railroads must  
carry food and munitions for soldiers.

UP TO US

Continued from Page 733

viduals of their usual food, they are  
sacrificing it willingly to the common  
cause.

During this fiscal year North Amer-  
ica will have supplied approximately  
50 per cent in nutritive values of the  
foodstuffs imported by the Allies, and  
50 per cent came from more remote  
markets. Before the war we con-  
tributed probably less than ten per  
cent. The shipping situation or the  
war situation might develop to a point  
where these ships must be withdrawn  
from the long journeys to the nearest  
market—our own. If that became  
necessary, and if we could supply the  
food, the Allied food carrying fleet  
could be diminished by 1,500,000 tons  
and still feed our associates in the  
war. This contingency may not arise,  
but if it should arise and we are un-  
prepared to meet this demand for a  
doubling of the whole of the food ex-  
ports from this country, it might re-  
sult in the losing of the war. If these  
ships should, by force of necessity,  
come to our shores they must be  
loaded.

No one knows how long the war will  
last. If we are to win we will with  
four collateral weapons — men, mu-  
nitions, ships and food. It may  
require years to win it and we in-  
tend to fight it out on this line—  
not if it takes all summer, but if it  
takes all of your lifetime and mine.  
We cannot anticipate that the animal  
situation in Europe will improve dur-  
ing the war. The enormous destruc-  
tion must go on until the end. Through  
the whole of the course of  
the war there will be continued de-  
struction of cattle and diminishing  
dairy products. There will be steady  
creeping of jeopardy towards the chil-  
dren of the Allies. North America  
stands unique in one great particular  
in this situation—we are independent  
of sea transport for feeding stuffs for  
our animals; we grow them side by  
side. Here lies the great economic  
difference in these foods between our-  
selves and Europe and here also the  
one reason why we can and must be  
the great final reservoir of supplies.

URGE SAVING IN BURLAP

Twenty-one million yards of bur-  
lap—material now growing scarce be-  
cause of its increased use in trench  
warfare, food shipments, and because  
of reduced importations — could be  
saved if fertilizer dealers would use  
200 pound bags instead of the more  
common 100 pound size. Pointing out  
that the burlap situation is steadily  
growing worse, the United States de-  
partment of agriculture makes this  
suggestion to fertilizer haulers for  
conserving the supply. The monetary  
saving possible in handling the 3,000-  
000 tons of fertilizers, now shipped in  
smaller bags, in 200 pound bags rather  
than in 100 pound sacks would be  
approximately \$4,000,000, it is esti-  
mated.

Bags are not only scarce, but the  
jute from which burlap bags are made  
is imported from India and the short-  
age of ships has materially interfered  
with the supply, while the necessity  
of furnishing bags for the army for  
trench use will further deplete those  
available. The total amount of fer-  
tilizer used in the United States an-  
nually is about 6,000,000 tons and of  
this at least half is being shipped in  
less than 200 pound bags. A short-  
age of burlap would ultimately reflect  
on such uses as for fertilizer in view  
of the priority need for food contain-  
ers, and it is held necessary that the  
use of burlap for carrying fertilizers  
should be cut to the greatest possible  
extent.

Another way in which burlap can be  
saved is by the use of second hand  
bags of any size. Many of these are  
on American farms. Dealers in sec-  
ond hand bags pay from 6 to 15 cents  
each, depending on size and condi-  
tion.

WEATHER CONDITIONS

San Francisco, Cal., June 8, 1918.					
Stations.	Wk.	Rainfall	Season.	Norm.	Max. Min.
Eureka	.00	24.18	45.36	70	44
Red Bluff	.00	12.00	24.73	100	46
Sacramento	.00	10.61	20.02	98	42
San Francisco	.00	11.48	22.13	76	50
San Jose	.00	9.36	16.76	90	46
Fresno	.00	10.19	9.67	100	54
San Luis Obispo	.90	18.07	29.50	92	50
Los Angeles	.90	14.01	15.58	80	54
San Diego	.90	7.98	10.01	70	56

Horse flesh is included among the  
meats now rationed in England under  
the card system.

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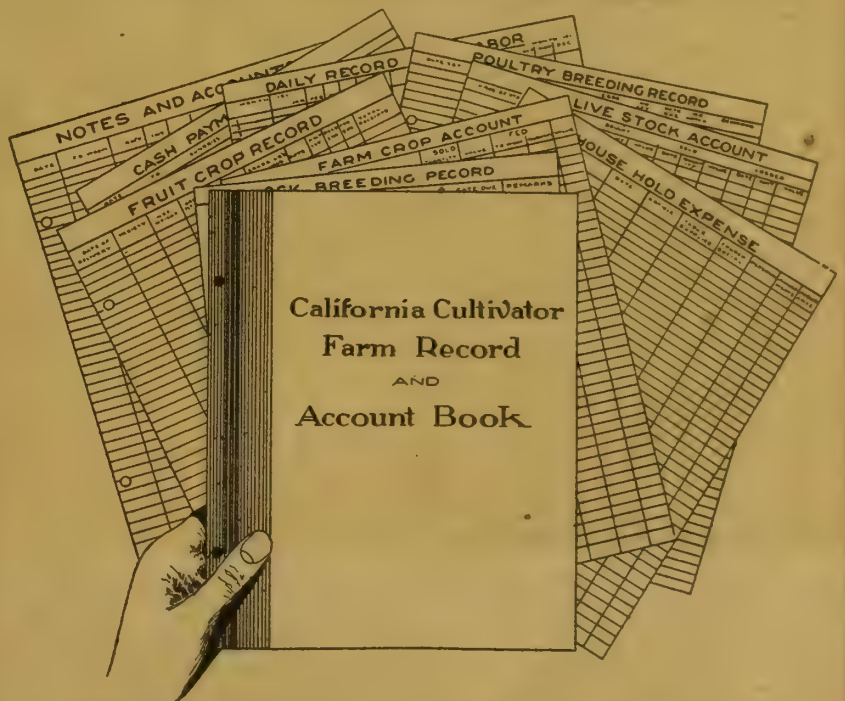
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**ACCOUNTS, HOUSEHOLD EXPENSES, FIELD EXPENSES, CASH**  
**RECEIPTS, INDIVIDUAL TREE RECORDS, LEMON TREE RECORDS,**  
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# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

*Los Angeles*

*An Illustrated Weekly for the Rural Home and Ranch*

*San Francisco*

Vol. L.

June 22, 1918

No. 25

## Type of Humboldt Dairy Cows



Humboldt County's Natural Pastures Have Given Great Advantage to  
It as a Producer of Dairy Products. Butter Production,  
1917, Nearly 6,000,000 Pounds





# Feed 10 Cows at the Cost of Feeding 5

HAY AND  
GRAIN RATION

By Chas. B. Smith, Silo Authority.

A GOOD business man once said that the most interesting story you could tell any man was how he could make some money.

If you will give me FIVE MINUTES of your time—RIGHT NOW—I'll show you how a GOOD silo will earn you DOUBLE its cost in SIX MONTHS' TIME, for any dairyman or ranch-owner in California.

I've obtained figures from hundreds of dairymen all over this Coast. Boiled down, they average up about as follows: On a straight hay and grain ration the average cow will consume about 30 pounds of good hay and eight pounds of grain or chop each day. Where silage is introduced into the ration, the average cow will eat 15 pounds of good hay, three to four pounds of chop, and 30 to 35 pounds of silage. If you are feeding without a silo, you KNOW the first figures are correct; and any neighbor WITH a silo will tell you the latter figures are about right.

As to cost, during the past Winter good hay sold from \$20 to \$30 per ton, and good mill-feed from \$55 to \$75 per ton. Good corn silage, however, was produced for less than \$2.25 per ton last season, and it can be produced for \$2.50 per ton now. I'll verify these figures for you later on.

But this is not all. With good succulent silage added to the ration, your cows will produce more. Average figures given me by dairymen show at least a two-quart gain in milk per day per cow. On this conservative basis your gain is 20 quarts, or 40 pounds per day, or 7200 pounds in six months. At a price of \$2.25 per hundred pounds, which is low now, this repre-

sents a gain in returns of \$162. Add this to the \$382 gained in cost of feed and your 32 tons of silage has made you \$544 more from your ten head than if no silage had been used.

A 32-ton Indiana Silo—the best on the market—costs approximately \$225 at the factory. It wouldn't cost you over \$270 erected and painted. So that my claim that it will save DOUBLE its cost is well proven by the above figures.

But, you say—you PRODUCE your own hay and grain and hence it does not COST you so much. True, but it has to be charged against your live stock at what it would SELL for, so the result is the same. Again, you may think silage costs more. Let's see if it does. An ordinary yield of corn gives ten tons of silage to the acre. I figure its cost as follows, per acre:

Rent .....	\$ 7.50
Plowing .....	2.00
Harrowing twice .....	1.00
Discing .....	.70
Seed .....	.80
Planting .....	.75
Rolling .....	.75
Harrowing .....	.50
Cultivating four times .....	3.00
Ensiling .....	8.00

Total .....

\$25.00

—or \$2.50 per ton.

Any hay silage will cost you less per ton than corn.

From the figures, it will be comparatively easy for you to figure out just what a silo will do for you. Any silo user will tell you my figures are conservative, though conditions in different districts may cause them to vary some. But, even if a silo will do ONE-HALF as much as I have shown it will, isn't it foolish to try to feed live stock without one? YOU PAY FOR IT EVERY YEAR whether you use it or not.

## Mr. Smith's Figures Prove Facts

For example, suppose you are feeding ten head dairy cows over the six-month Winter feeding period. If no silo is used, your costs are about as follows:

30 pounds hay per cow per day, for 180 days—27 tons at \$20.....	\$540.00
8 pounds chop per cow per day, for 180 days— 7 tons at \$55.....	385.00

Cost of feeding ten cows, at lowest market figures .....

\$925.00

With a silo the figures change as follows:

15 pounds hay per cow per day, for 180 days—13½ tons at \$20.....	\$270.00
4 pounds chop per cow per day, for 180 days— 3½ tons at \$55.....	193.00
35 pounds silage per cow per day, for 180 days—32 tons at \$2.50.....	80.00

Cost of feeding ten cows with silo.....

\$543.00

Saving, \$382.00

# INDIANA SILO

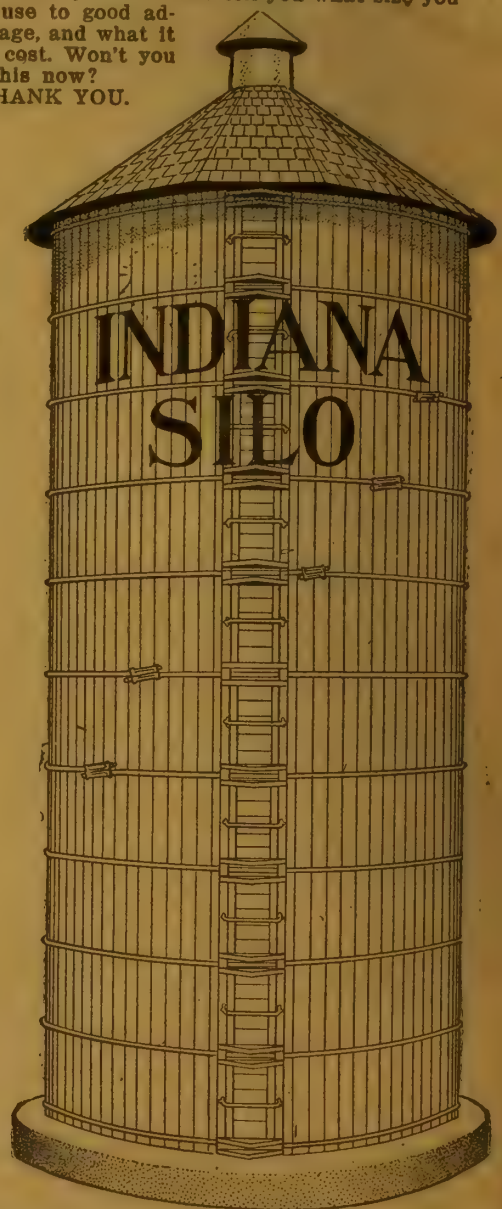
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I want to know more about how to feed 10 cows for the  
cost of feeding 5.

Name .....

Address .....

..... sheep, ..... cows, ..... hogs



# California Cultivator

Published Weekly

Los Angeles: June 22, 1918

One Dollar Per Year

## Humboldt, a Dairy County

**E**VERYBODY says it. Nobody denies it. That being the case why write about it? The good reason for writing once again about the wondrous wealth and still more wondrous possibilities for developing the great latent resources of this dairy section is that even those who know it best don't half realize what Humboldt is yet to become. The reason for writing is that seen for the first time some new angle of viewing the land, what has been and what may be done, may be touched on that may help Humboldt County men and those looking for a new location under most favorable conditions. As to scenic beauty the story has been well told, but no story can tell the grand epic of clear sparkling trout stream and river winding through sky soaring mountain and redwoods of such aspiring height that the mind rises with them to salute the Maker who maketh all things well. The fine pastoral scenes along the river valleys where the forest monarchs have given place to year around green meadows rich with natural as well as cultivated clovers and grasses that make this the happy home of the thousands of fine fat, sleek dairy cows which turn the green wealth of the fields into greenback dividends for their fortunate owners. In the recent year long dairy competition where herds from all over the state competed with their best Humboldt won all of the Cultivator's three one hundred dollar prizes.

Naturally we felt that a section that could do that needed a little more of our attention, and a trip has been made to find out if possible the why of it. The one word that spells the same as Humboldt, is prosperity, and while wealth is being produced from fisheries, forests, shipbuilding and other industries the great and enduring source of both present and future wealth is and will be the products of the field and dairy.

Native grass and native clover grow naturally the year round; the climate is mild and cattle pasture the full 12 months. Some hay is cut but in the main the cow is Humboldt's mowing machine. In addition to the native white clover, red clover grows luxuriantly. Rye grass is a favorite pasture grass, while shoulder high vetch and oats fed green make fat monthly cream checks the rule.

Owing to these conditions, silos are not largely used although some are being installed and provide a valuable change of rations. That they will increase in numbers is a certainty and that they will prove profitable is equally certain. The rainfall is heavy, mostly in the winter months, but showers generally come during much of the summer. The dairy farms are all in the river valleys which at one time were heavily wooded and have been cleared for farms at large expense. This desirable land is held at \$300 to \$500 and acre—when you can get it; it is in great demand. The three men who won each one of

the Cultivator's hundred dollar prizes in the state wide year long dairy cow competition were Iver Iverson of Arcata, J. W. Coppini and W. Tekelsen of Ferndale. They are all enterprising dairymen but with no fancy fixtures on their farms. Their cows have no petting or heavy feeding, and that they won for their owners tells again the story of green feed and mild climate coupled with careful work by real dairymen.

Iver Iverson hires his farm but has

May, then about four pounds a day till the middle of September, increased to six pounds for the balance of the year. Beginning the middle of August carrots were fed till December first then mangels till spring pasture time. Average fat for the test was 498.75 pounds per cow. The prizes won amounted to \$570 in cash, a pure bred bull and a cream separator. Mr. Iverson has recently purchased the entire registered Guernsey herd of Frank Helm of Fresno. This part of his herd is head-

Here there are 65 head, headed by a registered bull. Mr. Coppini has a particularly fine junior sire whose dams trace back on both sides to the Stoke Pogis blood, with strong strains of St. Lambert and Tormentor. His sire is Beauty's Lad of Champoege who goes back to Imported Golden Fern's Lad. The herd's senior sire, St. Helier of F., is sired by Olga Fern's Pogis, with line of Combination, Ida Marigold and other Jersey aristocrats in his family history. The two farms aggregate 150 acres and are real wealth producers. Mr. Coppini is recognized as one of the leading Jersey men of the state. His winnings in the contest were \$610 cash, a Calf Way milker, and a Simplex separator.

W. Tekelsen, the third of the Cultivator's one hundred dollar prize winners, has 76 acres just out of Ferndale. He is milking 50 head of well bred grade Jerseys headed by a registered Jersey bull.

G. E. Trigg of Ferndale, another contestant, farms 60 acres, has 38 milkers of splendidly selected Jerseys, 11 of which are registered. His winnings in contest totaled \$421, a Sharpless milker, and one of N. H. Locke's registered bulls. Mr. Trigg is acting secretary of the Ferndale Cow Testing Association which was started in 1909 with 2500 cows, now has 3500 cows with 500 on the waiting list. They employ three testers.

In conclusion, if the whole paper was given up to this Humboldt story it wouldn't be half told. The men written of are only a few of many equally worthy of mention for their herds and their work which is now as ever of vital importance to the state and the nation.



Junior Herd Sire

Type of stock which is making the dairy of J. W. Coppini, Ferndale, a prize winner.

recently purchased a farm that he will move upon as soon as his present lease expires. He has 37 head of well selected milking cows, Jersey and Guernsey blood predominating. They are well fed, well housed and cared for. They pasture on native grasses, are fed oats and vetch hay in winter in a common farmer type of barn with stanchions. During the contest they had alfalfa hay in November, December and January. About two pounds a day of a mixture of cottonseed meal, bran and cocoanut meal in April and

ed by Waseca of Bella Vista who is out of Imported Lord Kitchener. Briefly this is the story of one of the contestants and a typical Humboldt County dairyman.

The story of the others is similar as to conditions of work and feeding rations. J. W. Coppini of Ferndale, who also won a Cultivator hundred dollar prize, has 21 milking Jerseys, 16 of which are registered. Mr. Coppini is also a partner in the herd of very high grade Jerseys on the adjoining farm of Coppini & Coppini.

## The Carburetor and Its Work

**T**HESE are the days when the tractor is showing its ability to stand up under trying conditions. The humid heat of the past few days has not been felt by the tractor more than are normal conditions. It has, not been necessary to stop the machine to rest in the shade, and the operator has been able to accomplish as much as ever and, with a headlight, to get in nearly 24 hours per day. This week we use from Prof. J. B. Davidson's notes information as to carburetor, how to secure greater efficiency, etc.

### Construction

In general the modern carburetor consists in a nozzle, differing widely in form, but with a fuel level maintained slightly below its tip, and from which the fuel is drawn by the partial vacuum produced during the suction stroke of the piston and converted into a fine spray by the rush of air on its way to the cylinder.

### Factors Determining Richness of Mixture

Size of the nozzle opening. Viscosity of fuel (varies with temperature).

Distance of fuel level below nozzle. Suction or amount of vacuum produced in carburetor during suction stroke.

### Why a Carburetor Is Sensitive

The proportion of liquid fuel to air is small, usually about one to 16,000 when a proper mixture is used. The mixing is that of colorless gases or vapor "sight unseen."

### Economical Mixture

Gasoline or distillate vapor will not burn. There must be a sufficient amount of air present to support combustion. Gasoline and distillate is composed of carbon and hydrogen. When hydrogen is burned water is the resulting product and 62,000 B. T. U's of heat produced for each pound of hydrogen. To burn this hydrogen eight pounds of oxygen or 3418 pounds of air are required. When carbon is burned with insufficient air carbon monoxide is produced releasing 4400 B. T. U's per pound of carbon. When burned in the presence of an adequate supply of air carbon dioxide is produced releasing 14,500 B. T. U's of heat.

### To Determine Quality of Mixture

A lean mixture is slow burning

causing snapping back through the carburetor and produces a sharp exhaust.

A rich mixture burns the carbon to monoxide, which has a sharp prickling odor. Very rich mixture causes back smoke at the exhaust, due to free carbon and soot.

### Energy of Dynamite and Gasoline

The energy of 50 per cent dynamite per pound is 1825 B. T. U's or 1,419,850 foot pounds. The energy of gasoline per pound is 20,000 B. T. U's or 15,560,000 foot pounds or ten times as much as that of dynamite.

### Regulation of Fuel Level

Two methods of maintaining the proper level of gasoline below the nozzle:

By means of overflow cup.

By means of a float.

It is to be noted that some so-called generator valves and mixtures do not have either of the above, but such devices are influenced more or less by the height of the fuel in the supply tank.

### Vacuum Feed

The Stewart vacuum feed is a de-  
Continued on Page 751



# Agricultural News Notes of the Pacific Coast

## Northern California

Northern California citrus reports are for a bumper crop.

San Francisco is planning for a livestock show to open November 2.

El Dorado County Duroc breeders have organized.

Durham, Butte County, almond growers have joined the state association.

Napa County farm bureau is protesting against the Randall prohibition amendment.

Butte County citrus growers and rice growers are both hoping for warmer weather than has been given this season.

Lake County and Modoc County won the two grammar school prizes in Commissioner Hecke's squirrel prize offers.

Happy Valley, Shasta County, has the farthest north large olive planting. There are over 1000 acres in the plantation.

In 1914 the Sacramento Valley had a few garden and experimental plantings of spinach. This year's production was in excess of 3000 acres.

The state horticultural commission is now ready to supply strychnine and saccharin to farmers at the rate of \$5.50 per pound for saccharin and \$1.50 per ounce for strychnine.

Yolo County bean growers are perfecting a branch of the California Bean Growers' Association. Present indications are that Pinks will command about an eight cent figure.

The Sacramento Valley has planted more rice than any preceding year. Most of the grain is up and is making exceptionally fine growth. Yolo County alone has nearly 20,000 acres planted.

The rainfall this year, which was but little more than half of normal in the Sacramento Valley foothills, is calling attention of the irrigators to the need of storm water storage as never before.

Fall River, Shasta County, is producing its first large wheat crop made possible by better roads and trucks to take crop to the railways. This valley will produce far above its quota assigned last fall. It is estimated the output will be over 10,000,000 pounds.

The food commission reports that with several million bags to arrive early in July grain producers will have sufficient for the season. The price is 26½ cents f. o. b. San Francisco. Freight to interior points will cost approximately one cent a piece.

Thirty tons of dried potatoes put up by the Central California Creamery at Ferndale, under direction of the Humboldt County farm bureau, is now on its way to the trenches. It is hoped this will be the forerunner of a permanent industry in Humboldt County.

The Lassen Lumber and Box Company mill near Westwood, Lassen County, which has a capacity of 35,000 feet per day, is just beginning operations, and foundations are being laid for a second mill with nearly double its capacity.

The food administration will aid rice growers in Yolo County in the impartial division of irrigation waters. Any grower caught using water in excess of the amount signed up will be deprived of future use. Every grower must keep ditches and levees in repair so there shall be no waste.

## Central California

Peaches will run exceptionally large this year.

Tulare County foothills near Oroquieta are shipping tomatoes.

Dinuba, Tulare County, will ship 50 carloads of watermelons.

The Tulare Alfalfa Growers' Association has decided upon a \$20 a ton price for alfalfa.

James W. McCord, a Kings County pioneer, died recently at his home in Hanford.

Charts giving an outline of the new fruit standardization law are being placed in all fruit packing houses.

Chowchilla, Madera County, reports planting of rice much larger than anticipated.

Dried fruit handlers report great interest in all markets and predict good season.

An auction of fat hogs at Modesto was recently held. The top price was \$15.60.

The creamery at Keyes has been purchased by the Milk Producers of Central California.

San Joaquin Valley's grain harvest is in full swing. Barley is showing up better than anticipated.

Oakdale, Stanislaus County, is shipping some of the finest fat steers yet sent out.

Bean growers of Salida, Stanislaus County, recently met and organized for the purpose of bettering marketing conditions.

The Turlock district expects to ship 2500 cars of melons. Shipping will not begin till about the middle of July.

An insurance company has sued the owner of a steam tractor because of a fire started from sparks. The amount of the suit is over \$8000.

Water districts of Stanislaus County have been planning for the cleaning and improving of canals. One feature of the improvement will consist of one 4000 foot tunnel.

The forest service announces examinations for positions within the national forests to be held June 19 and 20 at Sisson, Siskiyou County, Quincy, Plumas County; Truckee, Nevada County; Sonora, Tulame County; Northfork, Madera County; Hume, Fresno County.

Monterey Bay is being planted to Pismo clams. The bay was formerly well stocked with these clams but they were taken out so freely before the present law was in effect that they were entirely killed off.

Cupertino, Santa Clara County, apricot growers are discussing prices of 1918 crop. Buyers in that section have been interested in circulating depressing stories as to the year's output and as to the attitude of the government.

The Peach Growers' Inc. are rushing work on a number of packing houses which must be completed before the 1918 crop is ready. President Wilson has assured growers that facilities will be provided for handling the crop economically.

The Madera County board of supervisors has enacted a fire prevention law, one feature of which provides a six foot firebreak around every field of grain or other inflammable crop. Every harvester and tractor must be supplied with two dependable chemical fire extinguishers.

## Southern California

Riverside fair is to stage a boys and girls pig club contest.

Irvine, Orange County, is building a \$15,000 walnut packing house.

Imperial County farm bureau has succeeded in selling 30,000 sacks of barley at \$2.10 f. o. b. Imperial Valley.

Santa Ana is building one of the most modern walnut packing plants in California.

Campers in the Santa Barbara national forest must secure permits before entering.

Riverside County bee keepers recently held a picnic supper at Claremont Park.

Lemon growers are pleased as they observe the \$9000 sales of lemons in Eastern markets.

An Orange County lemon grower reports that truckloads of lemons have been stolen from his orchard.

Broomcorn growers of the Palo Verde Valley recently met at Blythe and discussed cultural methods.

Palo Verde Valley will plant early Baart wheat for which that section is well adapted.

Walnut growers have had satisfactory results on aphids by spraying with tobacco dust or sometimes tobacco dust and hydrated lime, 50-50.

A manufacturer of harvesting machinery is contracting for hemp grown in the Imperial County at prices materially above those of last year.

Fullerton orange growers are organizing to prevent stealing of oranges. One orange grower reports the theft of 20 boxes.

The directors of the Lima Bean Growers Association recently met at Oxnard and listened to reports of President Perkins trip to Washington.

Suits are still filed against some bean growers because of failing to deliver full amount of beans contracted last year when prices advanced so rapidly.

Lankershim, Los Angeles County, hopes for the establishment of a large dehydrating plant. Turnips, carrots, celery, peas and beans will be handled.

Pomona Valley Poultry Producers' Association hopes to have better treatment from Los Angeles dealers because of the efforts of Food Commissioner Cole.

Permit has been granted for the use of the waters of Snow Creek and Whitewater River in Riverside County for the purpose of generating electric power for a million dollar cement plant soon to be built.

The California Walnut Growers' Association is distributing a \$112,000 surplus to the members. The selling cost the past year was two and one-half per cent. The culls marketed by the association netted 11 cents.

Apple growers of Chino Valley have applied for articles of incorporation. The association will this year hire the Narod packing house. It is expected that the cull fruit will be handled in the cannery of the San Antonio growers' association.

Secretary Burke of the Santa Ana Valley Walnut Growers' Association estimates the walnut crop this year at 40 to 50 per cent of normal. The shortage he says is caused by the heat of last June which burned up many of the fruit stems.

## The Coast and General

Citrus crop all right yet; no abnormal June drop reported.

Boys of Portland Y. M. C. A. are picking Hood River strawberries.

Utah is planting largely to late potato crop.

The cutting of olive trees in Italy for fuel or any other purpose is now prohibited by decree of the king.

The schools of Snohomish County, Washington, have purchased \$50,000 worth of war savings stamps.

Isle of Pines farmers will produce 1500 acres of castor beans for the United States government.

Recent cold rain destroyed 270 head of sheep for one company in Washington.

England's potato acreage in 1918 approximates 900,000. Every county in the country shows an increase.

New Zealand has ruled that all imports of luxuries or other than essentials shall cease.

One hunter of Morrow County, Oregon, recently bagged 124 coyotes within 30 days.

County agricultural agent for Wasco County, Oregon, reports 25 squirrel extermination clubs organized.

Wenatchee Valley, Washington, estimated a bumper apple crop, normal apricot crop, peaches and cherries very light.

Shipments of live stock through Pittsburg stockyards have greatly decreased because of federal routing over more direct lines.

The governor of Idaho has proclaimed that all pool halls shall be closed from 6 a. m. to 6 p. m. This because of the labor shortage.

A Canadian order in council has been made providing that all persons between ages of 16 and 60 must be engaged in useful occupations.

The Argentine government estimates the corn crop this year will aggregate 4,355,000 tons. Two and a half million tons of that amount can be exported.

Arkansas saved over 40,000 barrels of wheat flour which has been sent to France, and California's conservation has resulted in releasing 65,000 barrels of flour.

The food administration has ruled that vessels leaving American ports for South American or other countries where wheat is produced may have only wheat flour sufficient to carry them to the other port.

Great Britain has purchased the whole of the Australian wool clip for the period of the war and one year after. It is the largest wool transaction in the history of the world. The first two clips will involve the sum of \$100,000,000.

All farmers of California have been asked to file blanks stating their needs for labor with Prof. R. L. Adams at Berkeley, the California Federation of Farmers Cooperative Marketing Association, or with any one of their employment agencies.

For the first time in years the great tithing granaries of the Mormon church are absolutely clean of grain. This supply of wheat has been built up under the regime of Brigham Young and his successors and came in good time to aid the world in its need.



# Development of Dried Vegetable Industry

By E. Clemens Horst



THE Pacific Coast is embarking on a new industry that seems destined to rival that of the raisin and dried fruit lines. Dried vegetables, although not new to European countries, were practically unknown to this country until the advent of the war. There are now ten vegetable drying plants in California and Oregon, and more are under construction. A great impetus was given to the industry when the war department contracted for \$1,000,000 worth of evaporated vegetables for use of the soldier abroad. In addition to the purchases made by the government, a strong and increasing demand has sprung up for the product from hotels, cafes, hospitals and public institutions, and as the many advantages of dried vegetables are disclosed to consumers by a trial, the demands for the different varieties increases.

In the drying plants are processed practically every kind of vegetable, fruit and berry suitable for dehydration, and a vast superior quality of food is produced. The army is buying dried potatoes, carrots, and these products are packed in tin cans two of which form a crate easily handled by one man. The dried vegetables intended for use in the United States are packed in paper cartons, protected against moisture by waxed paper.

California, with its long growing season, and climatic conditions conducive to large and superior crops, is admirably adapted to the growing and dehydration of vegetables. In the sunny valleys, protected against frost, and with abundant water for irrigation, it is possible to grow vegetables during most of the year, and by rotating the crops the drying plants can be kept in operation continuously. In the season when fresh produce is not available, the plants can operate on potatoes, which can be carried in storage for the purpose.

The vegetables used for drying are practically all grown in the immediate vicinity of the drying plants, thus facilitating the picking and handling of the product and resulting in securing absolutely fresh stock. Owing to war conditions, the acreage formerly devoted to hops has been greatly restricted and these lands are now used for the growing of vegetables. Prac-

tically all of the vegetable drying plants were formerly hop driers, and very few changes were needed to adapt them to their new use. In addition to the vegetables grown on my own lands, contracts are made with nearby producers of vegetables, as the demands for the dried product are so great that a ready market is assured this season for all the vegetables within reach of the plants.

The sole object of the dehydration process is to exhaust the moisture content of the green vegetable, and in doing this nothing is added to preserve the product, as in extracting the water the perishable portion of vegetables is eliminated and the dried article will keep indefinitely. The flavor, texture and good qualities of the vegetable are in no way impaired, and when the dried product is soaked in water for a short time, the original bulk is restored, and when cooked it is difficult to tell the dried from the fresh.

When the green vegetable is first received at the drying plant it is placed on sorting tables, where young women pick out weeds, imperfect parts, and remove the tops or outside leaves of the vegetables. Such produce as spinach or cabbage is then placed in large revolving drums which toss the leaves about, during which operation they are thoroughly cleaned by jets of water. From the cleaning drum the leaves are conveyed by an endless belt to the drying trays where they are deposited in thin layers and taken to the drying room. Potatoes, carrots and such vegetables as require peeling, are cut into round shapes by hand after which they are placed in revolving drums which peel them evenly and without waste. From the peeling drums they pass through machines which slice them to desired sizes. In these various machines streams of pure water are constantly playing, insuring absolute cleanliness. Inspectors watch the product at various stages and pick out unsound parts. Potatoes, before going to the drying trays, are steamed for a minute or two to make them perfectly white. The drying trays are made of flat frames which enables the warm air to reach every portion of the vegetable. The

trays are placed in grooved shelves, where a warm current of dry air circulates through the product and slowly extracts the moisture. No chemical changes occur in the vegetables during the drying process and thus the full flavor is maintained. The dried product is placed in the containers in which it will be marketed, and these are sealed immediately to prevent dust from accumulating. When the dried vegetables reach the consumer they are pure and as clean as any food product on the market, and the whole process is designed to prevent the food from coming into contact with the human hands from the time it is first sorted. The operators who spread the layers evenly on the drying trays use wooden rakes and wear cloth gloves.

There is absolutely no waste of any portion of the vegetables processed as all of the green tops, peelings and even the water which washes the product is saved and fed to cattle and pigs. The waste water is run into bins where it is mixed with the green feed and this combination is greatly relished by hogs and makes a good feed for fattening.

The development of the dried vegetable industry will mean much to the producers, because it will insure a permanent and reliable market for vegetables. The great loss through wiltage and deterioration incident to the marketing of fresh vegetables will be avoided, because the green produce can be picked in the field as needed and taken direct to the drying plant.

It will mean that a tremendous saving can be effected in the handling of food supplies. As fresh or canned vegetables contain from 60 to 85 per cent of water, the transportation equipment, handling charges, and freight or express charges are expended in handling from 60 to 85 per cent of weight and volume of something that is not food. Furthermore, in canned goods the cost of small cans and wooden crates needed for vegetables runs into big figures, whereas the containers needed to handle dried vegetables are inexpensive and can be made of material not needed for other purposes. A pound of dried tomatoes is equivalent to 20 pounds of

fresh, and a cube of compressed dried tomatoes weighing two and one-quarter ounces has the same food value as a case of canned tomatoes weighing 60 pounds. In a carload of canned goods 24,000 pounds of the total weight of the shipment is made up of tin and wooden crates, all of which the consumer must pay for when buying his food. This comparison is not intended as a reflection upon canned vegetables, for they are excellent food and serve a very useful purpose, but it is given to indicate the many economic advantages which are possessed by the evaporated vegetables. These advantages largely influenced the government in contracting for the large quantities now being purchased for the American army abroad. It is estimated that one shipload of dried vegetables is equivalent to 30 shiploads of the same vegetables in a canned state.

From the standpoint of the consumer, the dried vegetables offer many advantages. Possessing the flavor and food values of the green, their use will enable a hotel, cafe, or the housewife to serve almost any kind of vegetable at any time, in the dead of winter as easily as in the middle of summer. Such famous hotels as the Biltmore of New York, the Willard of Washington, the St. Francis of San Francisco, and scores of others are using these products regularly in their service and they report that guests are entirely satisfied. Stewards of vessels have found that the use of dried vegetables enables them to carry a larger variety of food products in less space than under old conditions, and a wide market is being built up with steamship companies. Dietitians of hospitals recommend the use of the dried vegetables because they have found them to be absolutely pure food, and superior in taste and quality to canned goods. The housewife is growing to depend upon dried vegetables because they eliminate the large expenditure of time and trouble necessary to prepare green vegetables for cooking, and there is no waste to throw away.

The evaporation of vegetables, although meeting with marked success in California, can easily be carried on in almost any part of the country where vegetables are produced, though the season would necessarily be shorter.

## Spinach Production in California



WHILE spinach has long been the principal variety of greens grown for local consumption, it is only within the last few years that it has assumed an important place as a commercial crop in California. In this state it is grown commonly for local markets, extensively for canning, in an increasing area for seed production, occasionally for Eastern shipment, and is also coming into use for an evaporated vegetable.

As a canning crop the extension of the area of spinach cultivated has been so rapid that it has been nothing short of phenomenal, and spinach is now entitled to a conspicuous place in the records of the California pack of vegetables. Close to 3000 acres were planted for the 1918 spring pack. The installation of machinery which is said to be successful in washing out grit and foreign matter has popularized canned spinach, creating an

active demand and the good prices which follow as a natural consequence. This has given spinach canning a great impetus. Cannerymen have thus been enabled to use their plants at a period of the year in advance of the fruit season, for spinach is ready for canning earlier than any other product, the canneries starting on it still earlier than on asparagus.

It is handled by 14 different plants in this state and would have been taken up by others had the supply of good seed not been short. It is packed in Southern California and as far north as Mendocino and Butte Counties, the largest growing district in the state being in the vicinity of Sacramento.

As a commercial shipping vegetable, spinach has not kept pace in California with the canning crop, yet it has attracted more attention than usual during the past winter. While the shipping of spinach from South-

ern districts has grown to such an extent in recent years that it is reported to have largely displaced hotbed and cold frame culture in the vicinity of the principal markets of the United States, there are special difficulties connected with long distance shipment of spinach which discourages the transcontinental shipment of this perishable product and makes California production for this purpose unprofitable except under circumstances which existed during the past winter. With a crop failure in other districts which usually supply the Eastern markets the Pacific Coast was called upon for spinach and sent it forward in express cars. Los Angeles and the Coachella Valley of Southern California shipped out a few cars and Walla Walla Valley of Washington also furnished a supply, both getting excellent returns. Ordinarily spinach is also shipped in mixed cars to a limited extent to Western mar-

kets. The probability is that spinach will again be grown in these districts though there are no indications that prices will equal the abnormal prices of 1918. Much of it came from the vicinity of Puente, Tropico, Glendale and Gardena.

The maximum yields of spinach run high. On good soil under intensive cultivation eight tons per acre is not uncommon in a favorable season. The average in 1917 as reported by numerous growers, canners and shippers was four tons per acre. The normal production as estimated by the same authorities in various parts of the state is six tons per acre, which was closely approximated by the 1918 yields in the Sacramento Valley. Exceptional yields of from 10 to 20 tons have been reported and in one instance a yield of 22 tons per acre, which seems almost incredible, is on record. It is true, however, that the yields vary widely

Continued on Page 763



Established 1877

Forty-first Year

# CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877  
Combined with California Cultivator 1914.  
Livestock and Dairy Journal, Established  
1901, Combined with California  
Cultivator 1916

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Saturday, June 22, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

Mr. Briggs has been up in Humboldt County and secured a fund of information from winners of the Cultivator prizes in the California Dairy Cow Competition. Mr. Copini, Mr. Iverson and Mr. Terkelsen were the three winners of the Cultivator's \$300. The reasons for the winnings of these three men, all in one county, may be in small part due to the rich natural pastures, but we think the fact that the winnings were in the county which has the oldest cow testing association in the state is more significant. We doubt not that half a dozen years ago would have found as many unprofitable cows in Humboldt County as any other, but dairymen in that county appreciated the necessity of wiping out the boarder or else the boarder would wipe out the dairy industry; hence cow testing associations; hence the type of dairy cow shown on cover of this issue.

## W. S. S.

This is a time when we are all true sports, and this is the week of War Savings Stamps. The drive will end Friday, June 28, and Mr. Vanderlip, who originated the idea, and all the rest of United States propose to see to it that before midnight of the 28th two billions in this smallest of all government bonds shall be subscribed. Two billions means an average of \$20 for every man, woman

and child in the United States. In face of the fact that we have one-fifth of us subscribed for liberty bonds, and all of us have given of our substance and service to the Red Cross and other war activities, at first thought we are inclined to say; "We have done our duty; let others take the stamps." But, as we noted, Americans are true sports, and such thought obtains only for a moment. Bring us on the war stamps; we will all do our share.

## 100 PER CENT PATRIOTIC

At the beginning of the Second Liberty Loan drive workers were rather free in their charge that the farmers were not doing their share. It was asserted that the farmers were content with answering the call to produce more and that they claimed exemption on the ground of the need of all their funds for seed, new equipment, etc. At that time the editor of the Cultivator called on those in charge of the campaign and asked if

A dispatch to the state department recently says that the Berliner Tageblatt in its issue of June 10 quoted a German general as saying that American military activity was very embarrassing to German military strategy and military writers, as it did not coincide with the German program for influencing opinion at home.—L. A. Times Dispatch.

any evidence could be given to prove such an assertion. No evidence was given; only other assertions were made. And at the close of the drive attention was called to the self-evident fact that the farmers did their share. The charge has not been made since, we believe. On the contrary we note in "The Bache Review," a summary of the general financial and business situation, issued by a member of the New York Stock Exchange just after the close of the Third Liberty Loan drive: "Fully offsetting any idea that the country is not waking fully to its responsibilities is the enormous distribution of the Third Liberty Loan. Instead of relying upon the East and the very rich, the demonstration is of the great rank and file in the West showing its earnest appreciation of the situation and the coming in of the farming communities in overwhelming volume and numbers."

We are glad to see justice accorded to the West generally and to the producing interests particularly.

## DEPRECIATION

In discussing the matter of lemon production cost before the tariff commission conference in Los Angeles this week C. C. Teague referred to the matter of depreciation on equipment. Commissioner Culbertson inquired if depreciation were generally considered by lemon growers of California, and Mr. Teague questioned whether growers generally make such deduction in figuring their costs.

We think we may safely add that too many lemon and other growers do not compute costs at all. "Rule of thumb" is proverbial in most farming operations, but citrus producers perhaps give more general attention to bookkeeping operations than the farmer of the Middle West. In the matter of depreciation the federal government has not permitted allowance for depreciation of citrus orchards, but it does permit consideration of depreciation of implements and equipment generally.

As to the depreciation on equipment used in production of lemons Mr. Teague has found that 16 cents per

box is required to cover this item so seldom considered. When a "good year" comes the fruit grower is enabled to cast aside worn out equipment and purchase other. Both ends meet, and all is well. But times like the present when definite facts are desired in the interest of the general welfare of the industry such "book-keeping" gives little comfort to those who want concrete facts. "About so much" has little force with the thinking investigator.

## THE TARIFF COMMISSION

After the long strife over the enactment of the present tariff law, suggestions were made as to the advisability of having tariff legislation referred to a commission which should make a study of the needs of the country and its various industries, and that future legislation should be based on facts brought out by this investigation. A bill was passed which was approved September 8, 1916. The announced purpose of this bill was

"for increasing the revenue and for other purposes." Six commissioners were appointed for terms of two, four, six, eight, ten and 12 years, and it was provided that thereafter all appointments should be for the term of 12 years. On March 21, 1917 President Wilson appointed Frank Taussig, who is now chairman of the committee, Daniel C. Roper, David J. Lewis, William Kent, William S. Culbertson, and Edward P. Costigan. Mr. Roper has since resigned because of appointment as commissioner of internal revenue. After confirmation the commission entered at once upon its investigations.

One of the first problems taken up was that of the chemical industry. As indicating the importance of some features of this work, Mr. Culbertson referred in one of his California hearings to that fact that in the matter of dyes this country formerly imported practically all its needs. American chemists have not only met these needs of American manufacturers, but American manufacture of dyes has increased until today this country is exporting more than all she imported four years ago.

In seeking solution of its problems the commission has carried its investigations directly into the field where conferences are held with those most vitally concerned in the industry under investigation. Experts in steel, in textiles, in chemicals, and in agricultural products are employed. All the conferences are held by members of the commission. Most of the conferences in California are for the purpose of investigating as to agricultural questions. However, in San Francisco conferences will be held with representatives of mining, manufacturing and chemical interests.

William S. Culbertson, who is conducting the conferences on the Coast, has impressed all with his entire fairness and his desire to get at the facts which will enable his commission and congress to arrive at proper conclusions. The commission will make its first extended report to the United States congress on the first Monday of next December.

A good citizen is known by the food he eats.

## This Week's War Notes

The French people and American troops in France celebrated June 13, the first anniversary of the landing of American troops in France.

There is still an occasional sinking on this side of the Atlantic. The last vessel known to have been sunk was the Samoa, a vessel of 1051 tons.

An American officer has been killed and four of his men held prisoners on the Mexican border line. General Wood has the matter in hand and is making investigation.

Premier Orlando of Italy has informed the Allies of a peace proposition made by the Central Powers to Italy, which has been rejected, and the premier has wired Washington that his people stand solidly with the Entente.

Semi-official announcement has it that the Fourth Liberty Loan drive will soon be announced. The amount asked of the people will be much greater than any preceding issue, and the interest may be higher. Secretary McAdoo has announced it will probably be for \$6,000,000,000, bearing four and one-half per cent.

The American Federation of Labor in convention at St. Paul has given opportunity to pacifists and pro-German sympathizers to make an attack upon Samuel Gompers. Copies of the socialistic German paper, New York Vorwaerts have been circulated, containing articles bitterly denouncing Gompers and extravagantly praising Schleissinger, the pacifist floor leader.

The most serious effect of the submarine activity on this side is caused by the destruction of many thousands of tons of sugar coming to this country from the Islands. This is one occasion for the new sugar order which now reduces purchases to three pounds per person per month. This, excepting in case of canning fruit needs, when a 25 pound purchase may be made on signing of pledge.

The W. S. S. drive is on this week. The half year since the drive started finds much less than one-fourth of the two billions expected from the sale of these stamps realized. Hence the present week with its whirlwind ending on June 28 is expected to afford the opportunity for the selling or at least for the pledging of the sale of the remainder of the issue. Pledges will be presented to all the people, giving opportunity to purchase a certain number month by month until December 31, when all the stamps are supposed to be purchased.

The English troops on the western front have made several minor advances, one midnight attack permitting the Tommies to advance over 500 yards. American troops have been active, and at no point have they been forced to give way. On the whole General Foch holds the advantage. Some have felt that the stopping of the German drive was a confession of defeat, but the more general impression is that the Germans have simply halted for recovery and bringing up artillery. The situation is far more hopeful to the Allies than a week ago.

The Austrian and German forces have begun their drive on the line in northern Italy, have succeeded in crossing the Piave at various points and have been vigorously repelled by English and Italian forces. The British report capture of a large number of prisoners and of Austrian guns. The Italians have done some exceptionally brilliant work, especially with artillery. Austrian prisoners captured are reported as ill fed and poorly equipped. The Italians are jubilant and are asking for four divisions of American troops, and assert that if these are given; "We will all march together into Austria." It is said that practically the entire Austrian army is now in northern Italy.



# EVERY FAMILY

## a Family of

# FIGHTERS

That is the war-time spirit of true-blue Americans---the spirit that will win the war. The day of talking patriotism has passed---the time has come to practice it. Your government has officially set

## *Friday, June 28*

## NATIONAL WAR SAVINGS DAY

On June 28 every American will be summoned to enlist in the great "army that stays at home." On that day every loyal American should "sign the pledge" to invest a definite amount in War Savings Stamps each month during 1918.

### **Remember the Date---June 28---Help the Fighters Fight**

*This Space Contributed for the Winning of the War by*

#### **Patriotic San Francisco Firms :**

REDWOOD MANUFACTURERS COMPANY, Hobart Building  
PIPE, TANKS, SILOS.

F. H. POSS COMPANY, 17-19 Main Street.  
DISTRIBUTORS AVERY TRACTORS.

F. H. STOW TRACTOR COMPANY, Berkeley, California.  
CLEVELAND TRACTORS.

ECONOMY HOG AND CATTLE POWDER CO., Hearst Building.  
LARGEST MFRS. OF STOCK REMEDIES IN THE WORLD.

#### **Patriotic Los Angeles Firms :**

JACQUES WOOD & COAL COMPANY, 2529 South Main Street.  
Coal, Wood, Hay, Grain, Carbon Briquets and Poultry Supplies.

ROGERS, BROWN & CO., 1307 Baker-Detwiler Building.  
Fertilizers, Fish Meal, Tankage, Dried Blood, Poultry Foods, Meat Scraps.

THORPE ENGRAVING CO., Chamber of Commerce Building.  
MAKERS OF CUTS---LIVESTOCK CUTS A SPECIALTY.

T. G. BERRY, 918 South Main Street.  
THOR MOTORCYCLES.

DIXON & GRISWOLD, 146-148 North Los Angeles Street.  
P. & O. FARM IMPLEMENTS, BAIN WAGONS AND ROSS CUTTERS.

#### **Results of "One a Day" Pledge**

If you buy one War Savings Stamp each day from July 1st to December 31st (184 stamps) the cost to you will be \$773.71. January 1st, 1923, the U. S. Government will pay you \$920.00---or \$146.29 more than you invested.

#### **Results of "One a Week" Pledge**

If you buy one War Savings Stamp each week starting with July 5th until the end of 1918 (26 stamps) the cost to you will be \$109.33. January 1st, 1923, you will receive \$130---or \$20.67 more than you invested.

#### **Results of "One Every Other Week" Pledge**

If you buy one War Savings Stamp every other week beginning with July 5th until the end of 1918 (13 stamps) your outlay will be \$54.65. On January 1st, 1923, the sum of \$65 will be paid to you---just \$10.35 more than you invested.



# W.S.S.

## WAR SAVINGS STAMPS

### ISSUED BY THE UNITED STATES GOVERNMENT

#### **Results of "One a Month" Pledge**

Suppose you take one War Savings Stamp each month for the balance of the year (6 months), you will pay \$25.23 for them, and on January 1st, 1923, you will receive \$30---a gain of \$4.77 over your investment.

#### **Results of the "Limit" Pledge**

If you can purchase as many War Savings Stamps as the Government permits you to (one thousand dollars' worth) then pledge yourself to buy 35 stamps in July and 33 stamps each month during the remainder of the year (200 stamps in all). The cost will be \$840.95. January 1st, 1923, you will receive \$1000---or \$159.05 more than you invested. Ask your town chairman about the Limit Club now forming.



## TEAGUE QUALITY CITRUS TREES

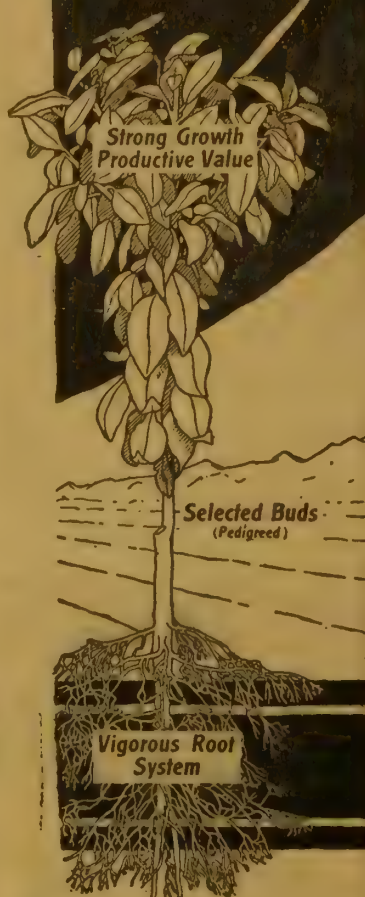
AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

**The R. M. Teague  
Citrus Nurseries**

Box 67, SAN DIMAS  
CALIFORNIA

FOUNDED IN 1889  
AT IT 29 YEARS



## Sulphuring Fruit for Drying

Written for California Cultivator By Aratus Everett



IN COMPLIANCE with your request for an article on sulphuring fruit for drying will say that I have had 35 or 40 years experience in California, mostly with apricots.

In the early days of fruit drying, and even during Dr. Wylie's crusade ten or 12 years ago against sulphuring the wise ones writing in some papers advocated from one-half to one and one-half hours sulphuring. Their lack of actual experience resulted in great loss to those who followed their advice.

We know that large sized fruit, especially near the Coast, will decay on the trays and turn dark while drying with this amount of sulphuring; also will keep turning darker with age.

The object of sulphuring is to break up the fruit cells or tissue and also to kill germs that start the decaying process as soon as the fruit is cut and exposed to the air. Therefore it should have its sulphur bath as soon as practical after cutting.

Those who have to dry in a limited way would find it to their advantage to keep the cut fruit moist by sprinkling it with salty water as sulphur will not properly bleach if the cut surface has dried over. Apples, pears and some other fruits are benefited

by dropping into salty water after they are prepared for drying till you are ready to sulphur them.

These fruits generally require heavy sulphuring. Green fruit requires more sulphuring than ripe fruit.

First it is essential to use nothing but first grade flowers of sulphur. The term flowers means a double (at least) subliming process.

Have sulphur house tight with control of air or ventilation near the place of burning as even sulphur will not burn without air.

A shallow hole or a metal pan in the sulphur house to burn it in is sufficient. Good sulphur will start readily and burn up clean. But if trouble is experienced a sheet of paper under the sulphur furnishes air and combustion.

Don't use combustible liquids to start it with; a match with a little paper is sufficient.

Various kinds of sulphuring houses are used. Cheap and efficient ones can be made of boards lined with paper or a frame covered with paper.

Tongue and grooved lumber is no good as it leaks the fumes around the grooves.

On apricots and other stone fruits use about 12 pounds sulphur to the green ton and leave it in its sulphur bath about five hours; even a longer time for sulphuring does no injury.

## Fresh Fruit Standardization

In the principal fresh fruit shipping counties of the state the horticultural commissioners are active in the enforcement of the new standardization law. Fruit interests everywhere are coming to recognize the fact that more work must be done along this line as the fruit industry develops. During the early season is a time when such work is exceedingly important. California's reputation has been injured in times past because of the shipment of immature fruit. There has always been a desire on the part of certain interests to be the first to place fruit of certain kinds in the markets of the country. This desire has led them to pick fruit while it was too green and as a consequence when the markets were reached it was practically unfit for consumption.

The county horticultural commis-

sioner now has it in his power to prevent the shipment of such green fruit from his county. Just recently Horticultural Commissioner Brosius of Sacramento County intercepted early season shipments of both peaches and apricots. While this little incident in itself might not seem to be of much consequence, in reality the effect has been far reaching. The interception of one shipment in the early season may be the means of holding back many carloads until a time when the fruit is ready for shipment. One of the biggest jobs right now for the county horticultural commissioner in any county of the state where fresh fruit is being packed for shipment is to inspect such fruit and prevent violations of the standardization act. It is hoped that no one will minimize the importance of this work, which each season will develop and will ultimately than at present.

## Millions of Dollars Due

By an Irrigator



WHEN the Newlands irrigation law was passed in June, 1902, it was provided that all money paid in from the sale of public lands should be used to reclaim the arid districts in the different Western states. Under this provision arose the national irrigation money, from which fund some of our Western states have received more than ten times over the sum that was actually due them. Some of the states that received these huge sums were Arizona, amounting to \$17,393,367, while all that was due to it from the sale of public lands was \$1,430,751; Nevada had only \$656,467 to its credit from the sale of its public domains, yet received and spent \$5,786,828. This strange method of apportioning money was due to the activity of the people in Western

states, who first raised a fund of \$5000 up to \$40,000 and with these funds carried on a vigorous campaign between their state and Washington, which ended in their getting these millions to develop the arid lands in their own home commonwealth.

Idaho up to June 30, 1916, received to its credit from the sale of its public land \$5,680,195, and in the same space of time received from Uncle Sam \$16,786,828. This was again the result of the people of Idaho being active and alert while the people during the same time in California were asleep and making no effort to get what was due to them from this sum of money held by the government.

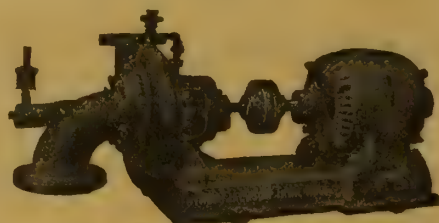
California up to June 30, 1916, received close to \$7,000,000 from the sale of its public lands, and in the same space of time received but

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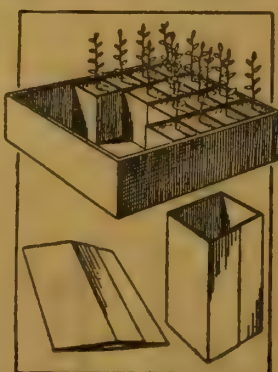
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\$870,000 for the Orland project and about \$30,000 spent on the Yuma government project, leaving something over \$6,000,000 due to our state from the sale of our own public domain, while by the allotment plan under which other states got their money, we have over \$20,000,000 due to us at the present time.

This money, \$6,000,000, arising from the sale of our own lands, was taken from California by the more alert people of other Western states and has been used by them to complete their own unfinished government projects and was paid out to them year by year since June 17, 1902, and is still being diverted to other states and will continue to be until the people of California put a stop to it by demanding this money for their own use and follow it up by making a vigorous fight until it is turned over to this state.

There never was a time in the history of this state when reclaimed land

was more in demand than at present, as we need the land; our government needs it, and every patriotic man knows that to prepare land for seeding and raise crops to feed our army and our people is as loyal an act to our country as to fight in the trenches of France.

We have 2,000,000 acres of land for which water can be secured to irrigate it, and therefore have no excuse to offer for not making use of the money that is due our state.

The California Irrigation Association is located in the Merchants' National Bank Building, San Francisco, and is back of this work of securing the money due to California in the Mohave River country and at least one new project built in the northern part of this state, the work to commence during the coming year. Northern California will be entitled to two projects providing the cost of either one does not exceed \$1,500,000, or the expense of the two canal systems does not exceed \$3,000,000.

## The Living Plant

Written for California Cultivator By Ernest Branton

**T**HERE is no great gulf existing between animal and vegetable life, as many think, and as all thought a few generations ago. Indeed, if we follow these two great divisions of life down to the lower levels we shall find plants that voluntarily swim about by their own motile power, and animal life that is as stationary as a barnacle on a rock. The differences are really of secondary importance, the greatest being in the different methods of obtaining food.

But even the stationary barnacles or other animal life exhibit some sort of activity to obtain food by causing currents of water to turn their way so that food passes close to the ever-open maw. On the other hand plants in no wise pursue their food but absorb it from immediate surroundings. Even motile plant life does this. While animal life may consume solids, plant life absorbs food only in solution, even the insectivorous plants feed in this manner, extracting from the victims the juices only. In both divisions of life the trend upward marks additional and special organization in the individual. It is often stated that circulation of blood and circulation of sap are conducted on the same system, but this is not true. There is no circulating system in a tree at all comparable with that of the arteries and veins of animals. But all the water required by the leaves does come up from the roots and is delivered to all parts of a leaf by the "veins" thereof.

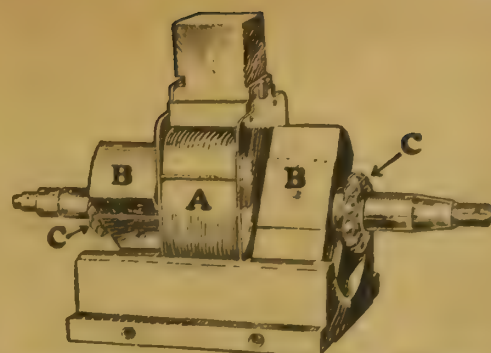
It is only through its roots that a plant obtains water or food and this it absorbs directly from the surrounding soil. Right there is a rank departure from any likeness to animal life. A short distance behind the tip of every root will be found the actual feeders or root-hairs through which the plant obtains its food. The root hairs are efficient only so long as they remain uninjured. Planters should remember that when these are dried they die and will in no case grow out again. The plant has to make a new lot. If it be in good health and vigor it does this readily. If in poor condition the plant will perish. The change of position might have proven beneficial if care had been observed, even in a weakly individual, and in this respect vegetable and animal life are strangely alike. The powerful "root pressure" is clearly shown

by the distance it forces water up a tall tree. At certain seasons, especially in spring, this pressure forces sap out from a stump for some time after a tree is felled and late pruning often shows it by the profuse "bleeding" of the injured parts. This is a distinct loss of vigor and may be compared with loss of blood in animals. It must also be remembered that in both animals and vegetable life this loss is sometimes beneficial. If this water supply is deficient the leaf area or feeding crop must be correspondingly reduced for there must be found some means of checking the loss of water. Herein is seen the chief reason why we have the "June drop" of oranges, which does not always fall in June. If foliage and fruit does not fall the difficulty must be met in other ways, for the law of supply and demand is relentless and is never defeated.

### Growing Native Plants

The greater number of native plants are benefited by ordinary garden treatment, especially those that grow in damp or shady places or in deep rich soil. But the trees and shrubs of our driest hillsides are not benefited by water and fertilizer except to make them grow faster and this is not always desired.

In the case of Matilija poppies, which I have grown extensively for a dozen years, I cannot say that they have been helped by fertilizer or additional water supply. It is certain that cultivation of the soil is positively injurious. When there is dry weather during the growing season previous to flowering it is undeniable that water is beneficial to any and all plant life. What effect water throughout the year may have upon the following year's growth, through storing of vigor in the roots I cannot say, but careful study has failed to note any. Any garden soil is richer in general plant food than the virgin soil in which this class of plants grow. The question arises, however, does the natural soil contain more special plant food than the garden soil. As a rule it does not. The matter is worth a little study to determine if the soil where a goodly supply of any native plant grows contains any special element that man could easily supply. A plant that seems to resent interference by man to a still greater degree is the yellow tree poppy, *Dendromecon rigidum*. Cultivation has brought speedy death to a majority of these plants when placed in gardens. And I have never seen larger flowers, larger leaves or better condition in any tree poppy grown in the garden than I have seen in the wilds.



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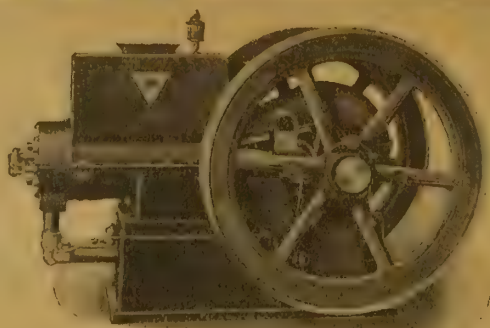
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## Citrus Conference



**WILLIAM S. CULBERTSON**, member of the United States tariff commission, assisted by Walter S. Cox, official reporter of the commission, is in California holding conferences with citrus, olive, raisin and nut growers, with poultry people and some manufacturing interests to secure information which will be of value to the commission in a revision of the tariff laws.

The hearings in California began on Tuesday morning in Los Angeles. The first one was attended by representative citrus growers, and explanation of the present condition of the industry, difficulties confronting the producers and items as to costs of production were presented to Commissioner Culbertson. The conference was most informal, the commissioner stating that it was in no sense a hearing; any producer or interested party was permitted to make suggestions or even ask questions of any one who was making a statement.

The Citrus Protective League presented through Secretary Dezell the formal statement of citrus growers. Attention was called to the difficulties of citrus growers, especially of the lemon growers, from such natural causes as the freeze of 1913, the heat of 1917, the losses from insects and fungus troubles, also to the unsettled marketing conditions occasioned in the earlier days of the war.

The greatest obstacle of all confronting the lemon industry at the present moment is not so much the tariff as the question of labor and of increased expense at all points of production, packing and transportation. The labor situation is not only a matter of increased cost but lowered efficiency. The independence of each worker when he considers the possibility of stepping out of any job he may have into another makes it impossible with many of them to secure effective work.

The report went fully into other problems confronting the industry; transportation of box shock and supplies, inability to secure cars in time of stress with a perishable product, the dumping of great quantities of Mediterranean fruit at Eastern seaboard at times.

The cost of production in 1910, as determined by extended investigations made by the league, and shown on a chart issued at the time the investigation was made, was one of the exhibits filed with the commission. As to comparative costs of production in 1918 only approximations were attempted, for no consistent investigation has been made. It was patent, however that they are vastly greater.

Attention was called to the fact that at the present moment lemons are selling at the highest price ever secured. Sales as high as \$14 have been made. This was explained as resulting from dearth of foreigners, caused by shipping conditions, by the hot weather over the East and large purchasing power of the consuming public.

This condition may be materially changed, for shipping conditions will be altered, as may be those of weather and other determining factors. For instance; at this moment on the pliers of New York or on the way across or available for immediate shipment there are 235,000 boxes of foreign lemons "within sight."

George C. Roeding, president of the

state board of agriculture, represented that body at the conference and in addition the citrus growers of Central and Northern California. Northern California sections ship citrus fruits much earlier than the central section. For instance, the Washington Navel shipping in the north may begin around November 15, and the shipping of Valencias early in April. As a lemon producing section Central California has difficulties in the continual coolness of the winter season which prevents blossoming and setting of fruit so as to ripen at a time when it may secure the longer prices of mid-summer shipment. Offsetting this obstacle to best results in the north was given the fact that land and water are much cheaper than in the southern section of the state.

Dr. Coit referred to citrus canker affecting the orchards of Florida and to diseases and troubles affecting California orchards. Frederick Maskew, state quarantine official, called attention to the fact that 1,811,000 citrus trees had been burned in Florida in the effort to rid that state of that trouble. Mr. Maskew also outlined quarantine work as conducted in this state. Dr. Webber of the citrus experiment station brought up the point that the citrus industry in California, which at one time was increasing by leaps and bounds, is now practically at a standstill, or at least increasing very slowly. He referred to the inability to secure fertilizers as one of

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the greatest problems confronting the industry.

Participating in the conference were Messrs. C. C. Teague of Limon-eira; C. W. Leffingwell, Whittier; Kenneth MacRae, Rialto; Harry Chase, Riverside; Mr. Wilson of the United States department of agriculture citrus by-product laboratory; L. V. Shepherd, Los Angeles; Stanley R. Pratt of the Mutual Orange Distributors; J. J. Pendergast, Los Angeles, and others.

#### PRUNE PRICES

In order to clear up widespread misunderstanding through abbreviated press reports of the price growers are to receive for the 1918 prune crop, Federal Food Commissioner Merritt announces that the maximum price of eight and one-half cents approved by the United States food administration at Washington meant the average base price for the average prune which the state produces.

The maximum prices on grades or sizes, recommended by the growers and approved by Washington, are as follows:

20 to 30 to the pound.....15 cents flat  
30 to 40 to the pound.....10 cent basis  
40 to 50 to the pound.....9½ cent basis  
50 to 60 to the pound.....8½ cent basis  
60 to 70 to the pound.....8½ cent basis  
70 to 80 to the pound.....8½ cent basis  
80 to 90 to the pound.....8 cent basis  
90 to 100 to the pound.....8 cent basis  
100 to 120 to the pound.....4½ cents flat  
120 and smaller, pound.....4 cents flat

The status of existing contracts will be determined later. Regulations will also be announced later relative to sack test methods which would give the grower the option of securing the advantage of premiums either on sack test or grader test.

Packers and associations are still restrained from buying, soliciting or selling 1918 prunes and will be restrained until official notice is given for them to proceed.

The above prices were agreed upon as fair, based on the increase in the cost of production and light crop conditions, by a committee representing the independent growers of the state and the California Prune and Apricot Growers' Association, Inc., and Merritt. The independent growers were represented on the price fixing committee by E. N. Richmond, W. S. Clayton, Elmer E. Chase, and E. L. Fellows, of San Jose; Frank H. Buck, Vacaville; W. C. Chisholm, Santa Rosa; Jerry Buckley and W. H. Williamson of the Sacramento Valley.

These are the highest prices California producers have ever obtained for their prunes, but through regulation of dealers' profits prices to the consumer will be stabilized.

#### THE CARBURETOR

Continued from Page 743

vice utilizing the partial vacuum produced in the inlet manifold of the engine to lift a supply of the fuel from a supply tank at a lower level. It has two chambers, one into which the fuel is drawn at intervals and the second into which the fuel flows from the first, and thence to the carburetor. The latter is always open to the air so the flow is uniform.

#### Automatic Carburetors

An automatic carburetor is one which adjusts the mixture to accommodate a varying speed of the engine. The suction varies with the speed and if an automatic feature was not provided, the mixture would become too rich with an increase of speed. Most automatic carburetors have a supplementary air valve to dilute the mixture at high speed.

#### Schebler Model "D"

This has a spring loaded supplementary air valve.

Adjust fuel valve for low speed. Adjust air valve for high speed.

#### Kingston Model "L"

Has a submerged nozzle, hence is called a "puddle carburetor." Has no air valve, but has one adjustment, the needle valve.

#### Stromberg Model "H"

Double jet carburetor with auxiliary air valve. Adjust needle valve for low speed and auxiliary air valve for high speed.

#### Master Carburetor

Multiple jet carburetor with a number of openings, furnishing fuel controlled by the throttle. Has a dash adjustment to an air "damper."

#### Rayfield Model "G"

Double nozzle carburetor with auxiliary air valve. Separate adjustment of lever mechanism to provide for low and high speed.

#### Heating

Nearly all carburetors designed for using heavy fuels have some means of heating the air before it reaches the carburetor. Although necessary pre-heating reduces the power of the engine.

#### Oil Engines

In oil engines a hot bulb is often used into which the fuel is fed to produce vaporization.

#### Semi Diesel and Diesel Engines

In these engines usually burning tops or fuel oil, the fuel is sprayed into the cylinder by a small pump each stroke. The amount of fuel discharged by the pump is controlled by the governor.

#### FAWCETT HOME

Prof. H. S. Fawcett who has been at Baltimore, Maryland, on a year's leave of absence doing special work, is again at home at the Riverside Citrus Experiment Station.

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## Parasites Control Cotton Aphis

By A. W. Morrill, State Entomologist of Arizona

**D**URING the past two weeks young cotton plants in many fields in the Salt River Valley have appeared to be in great danger of being destroyed by small greenish or greenish black insects known as the cotton aphis. The same species attacks and sometimes destroys melon vines and is perhaps better known as the melon aphis. It occurs everywhere in the United States where cotton is grown but is not ordinarily of much importance as a cotton pest on account of the effectiveness of its natural enemies, particularly a black wasp-like parasite.

There are two forms of the adult, winged and wingless females. Males are not known. The body of one of the full grown insects is about a fifteenth of an inch long. The folded wings in the case of the winged form extend approximately another fifteenth inch beyond the end of the body. The migrating or winged adults spread into the cotton fields from mallow and other weeds which have remained infested throughout the winter. Eggs are laid on the young cotton plants soon after they come through the ground. These soon hatch and the nymphs in the course of a few days develop into wingless adults.

These are each capable of giving birth to six to ten young per day. As these in turn become full grown in less than a week and are ready to reproduce it is apparent that no crop could long survive if such an increase were unchecked.

Fortunately, wasp-like or hymenopterous parasites, lady bugs, lace wing flies or chrysopas and predaceous flies known as *Syrphus* flies are very effective as a rule in preventing undue multiplication. On April 22 the writer visited several cotton fields near Chandler where severe damage by the aphis was threatened. No signs of natural enemies were found in two fields and only slight traces of them in the other fields. Samples of the infested plants were collected and brought to the office of the state entomologist in Phoenix to give the parasites, if present, a chance to develop. By the end of the week adult parasites appeared in large numbers from the aphis on these plants. It was found that out of 85 specimens of aphis present on four small plants 49, or 57 per cent, had been parasitized.

Before the death of the parasitized aphis occurs the body of the insect turns light brown in color and becomes almost globular in form. The insect before dying attaches itself

rigidly to the leaf on which it was feeding. These parasitized insects and the empty shells which remain after the adult parasite emerges are very conspicuous and a farmer should learn to recognize them.

In the Chandler fields which have been referred to the aphis is doomed, practically speaking, to extermination before it can do any appreciable damage to the cotton. Each adult female of the parasites is capable of destroying around two hundred aphis individuals. That is, each adult parasite will parasitize or deposit an egg in the body of each of two hundred or more specimens as long as the supply of aphis holds out.

The effectiveness of parasites, lady birds and other natural enemies of aphis, is dependent on the weather.

Cold weather during the crop growing season is unfavorable for the natural enemies and therefore favorable for the aphis. During warm or hot weather the parasites are capable of multiplying so much faster than the aphis that the latter are relatively unimportant among cotton pests. The natural enemies of this species of aphis for some reason are much more reliable in the control of the pest on cotton than on melons and other crops. Owing to this indirect relation of the weather to the effectiveness of the parasites it is a common belief among farmers and gardeners that the hot weather destroys the aphis. As a matter of fact the aphis will thrive in our hottest midsummer weather and do much damage if for any reason the parasites and other natural enemies are not active.

## The Woman's Land Army

**T**HE plan of the Woman's Land Army for bringing together employer and women workers is as follows: According to R. L. Adams, state farm labor agent, under whose advice and direction the land army is working, there are about 19 counties north of the Tehachapi which will probably experience a shortage of labor during July, August and September. In each of these counties the Woman's Land Army has named a local representative of the organization,

whose business it is to work with the county farm adviser and his assistants, the federal and state employment bureaus, and the farmers, orchardists and canners themselves in the matter of calling out recruits and placing them where they are needed.

Here is a summary of the facts contained in their printed leaflet entitled "Help for the Farmer." First let him get in touch with the local representative of the Woman's Land Army through his county farm adviser, or through the federal and state employment bureaus, or through the central office of the Woman's Land Army located at 521 Underwood Building, San Francisco,—they are all working together. When he has stated to this representative the nature of the job, the time, place, probable duration of service, rate of pay and number of workers desired, she will endeavor to fill the orders from the local recruits that she has enrolled, women who will live at home and "commute" to their work by bus, car, auto, etc., thus avoiding the development of the housing problem.

If, during the peak-load harvest time, this field representative of the Woman's Land Army reports that every available local recruit has been put to work and that there is still a demand for workers, then the central office in San Francisco will endeavor to send in to the orchardists or canners asking for them, groups or units of women enrolled in their reserve army, that is provided Professor Adams or the local farm adviser approves the call.

These units can be in any number, from ten to 100. They can live in small groups on individual ranches and give their services to that ranch exclusively,—or better, a large unit can be established in a centrally located camp from which they can hire out by the day to the surrounding farmers and orchards.

If the farmers of the neighborhood will club together and provide them with simple but sanitary living quarters with bathing facilities, and an adequate cooking outfit, the women will take care of themselves with no trouble or responsibility to the farmer's wife. A vacant house, abandoned hotel or tent camp would prove practicable. Each large sized unit takes with it its own cook and supervisor. This supervisor is a trained executive, the medium for all business transactions between the women and their employers.

Women Land Army workers will not be sent into any field or agricultural labor with the idea of undercut-

## IHC Machines Best Substitutes For Scarce Hired Help

### THE I H C LINE

#### GRAIN MACHINES

Binders Headers Reapers  
Rice Binders Push Binders  
Harvester-Threshers

#### HAY MACHINES

Mowers Rakes Tedders  
Combined Side-Delivery  
Rakes and Tedders  
Side-Delivery Rakes  
Hay Loaders  
Sweep Rakes  
Hay Stackers  
Combination Rakes and Stackers  
Hay Presses

#### CORN MACHINES

Planters Drills  
Cultivators  
Motor Cultivators  
Binders Pickers  
Ensilage Cutters  
Huskers and Shredders  
Shellers Stalk Rakes

#### TILLAGE

Disk Harrows  
Peg-Tooth Harrows  
Spring-Tooth Harrows  
Cultivators (One-horse)

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Kerosene Engines  
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Feed Grinders  
Stone Burr Mills  
Threshers  
Stalk Cutters  
Knife Grinders  
Binder Twine

**T**HE American farmer produces more per man than any other farmer in the world. Using labor-saving machines, he produces record crops with less hired help than is required under any other system. Therefore, in the present crisis, with help so scarce, every farmer should use the most efficient farm machines he can get, the only kind that can be depended upon to make the necessary increase in production.

The International Harvester Company of America markets the full line of high-grade machines listed in this advertisement for disking and harrowing seed beds; planting and cultivating crops of all kinds; cutting, making and storing hay; cutting, binding and threshing small grains; harvesting, husking and shelling corn; shredding corn fodder, filling silos, fertilizing fields; skimming cream; and grinding feed. It sells efficient farm power machines, engines and tractors operating on the cheapest fuels a farmer can buy. It provides wagons and motor trucks for all kinds of farm hauling.

Many of these machines have been used by American farmers for close to seventy-five years. They have helped to establish the standing of the American farmer. They are better today, more efficient and more economical than ever before. In many cases, one or another of these machines will solve the hired help and farm power problems on individual farms.

International machines are sold through ninety branch houses and over thirty thousand local dealers. Any customer can place an order, or command the services of this organization, by a telephone call to the dealer, or a visit to the nearest town.

It is important this year that all orders for machines be placed as early as possible, preferably months in advance. See the local dealer, or write us about the machines you are going to need this year, and do it now.

### International Harvester Company of America

(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.  
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah  
San Francisco, Cal. Spokane, Wash.



ting man labor or breaking strikes. While in the field or orchard the minimum wage for all land army workers will be 25 cents an hour with one and one-fourth rate for overtime. After their learning period is finished, if they wish a piece work basis they ask to be paid the going wage of the district.

It has been felt that this organization, with its semi-military and patriotic stimulus to recruiting its very effective economic and industrial machinery and the substantial backing and recognition it is receiving from men prominent in the business world of California, should prove to be a real factor in the solving of our summer labor problem.

#### BEAN CULTURE

The most complete account of bean culture in California has been made in Bulletin 294, "Bean Culture in California" by G. W. Hendry. It has an appendix in which Composition of California Varieties of Beans by M. E. Jaffa and F. W. Albro is given. In addition E. R. de Omg gives an account of insects and other enemies of beans.

In 1917 California produced on 558,000 acres, 8,035,000 bushels of dry beans, constituting 44 per cent of the entire crop of the United States, and exceeding by 4.78 per cent the combined output of the five next important states, Michigan, New York, Colorado, New Mexico, and Arizona.

California's 8,000,000 bushels last year made by far her greatest production. It exceeded that of 1916 by nearly two and a half million bushels. Other bean states last year produced as follows: Michigan, 3,514,000; New York, 1,575,000; Colorado, 1,467,000; New Mexico, 958,000; Arizona, 152,000; or a total production for the United States of 15,701,000 bushels.

To produce the 8,035,000 bushels required 558,000 acres. This was divided as follows: Southern California, 314,000 acres; San Joaquin Valley, 45,000; Stockton delta, 30,000; Sacramento Valley, 130,000; Central Coast counties, 30,000; and scattering sections, 9,000. Fifteen varieties are grown in this state. The production of these varieties in 1917 was approximately as follows: Limas, 1,224,000 100 pound bags (price for 1917 not given but average December wholesale price, 1912-1916, \$5.40); Pinks, 1,200,000, \$4.10; Small Whites, 900,000, \$5.50; Lady Washington, 610,000, \$4.95; Blackeye, 300,000, \$3.85; Cranberry, 150,000, \$4.65; Bayo, 125,000, \$4.60; Garbanzos (not given for 1916-1917 production, 90,000 bags) \$3.70; Red Mexican, 135,000, \$4.60; Red Kidneys, 20,000, \$5.90; Teparies, 100,000, \$2.50; Horse, 75,000, \$2.75; French White, 12,000, \$4.90; Spotted Red Mexican, 500, \$3.00; Henderson Bush, 116,000 (no price given). No explanation is given for the exceedingly low average price of Teparies, but we may add that last year the Tepary came to its own and commanded far better prices, in fact, last year's sales would have greatly increased the wholesale average on all varieties.

One valuable feature of the bulletin is the colored plate showing California field beans actual size.

#### WHITEWASH

Whitewash is the cheapest of all paints and for certain purposes it is the best. Lime, which is the basis of whitewash, makes a very sanitary coating and is probably to be preferred for cellars and the interior of stables and other outbuildings. The following directions for making whitewash are taken from "White Paints and Painting Materials," by W. G. Scott:

##### Ordinary Whitewash

This is made by slaking about ten pounds of quicklime with two gallons of water.

The lime is placed in a pail and the water poured over it, after which the pail is covered with an old piece of carpet or cloth and allowed to stand for about an hour. With an insufficient amount of water, the lime is "scorched" and not all converted into hydrate; on the other hand, too much water retards the slaking by lowering the heat.

"Scorched" lime is generally lumpy and transparent, hence the use of the proper amount of water for slaking and an after addition of water to bring it to a brush consistency.

##### Factory Whitewash

Interior: For walls, ceilings, posts, etc.

(1) Sixty-two pounds (one bushel) quicklime, slake with 15 gallons water. Keep barrel covered until steam ceases to rise. Stir occasionally to prevent scorching.

(2) Two and one-half pounds rye flour, beat up in one-half gallon of cold water, then add two gallons of boiling water.

(3) Two and one-half pounds common rock salt, dissolve in two and one-half gallons of hot water.

Mix (2) and (3), then pour into (1) and stir until all is well mixed.

This is the whitewash used in the large implement factories and recommended by the insurance companies. The above formula gives a product of perfect brush consistency.

##### Weatherproof Whitewash

Exterior: For buildings; fences, etc.

(1) Sixty-two pounds (one bushel) quicklime, slake with 12 gallons of hot water.

(2) Two pounds common table salt, one pound sulphate of zinc, dissolved in two gallons of boiling water.

(3) Two gallons skimmed milk.

Pour (2) into (1), then add the milk (3) and mix thoroughly.

##### Lighthouse Whitewash

(1) Sixty-two pounds (one bushel) quicklime, slake with 12 gallons of hot water.

(2) Twelve pounds rock salt, dissolve in six gallons of boiling water.

(3) Six pounds Portland cement.

Pour (2) into (1) and then add (3). Note: Alum added to a lime whitewash prevents it rubbing off. An ounce to the gallon is sufficient.

Flour paste answers the same purpose, but needs zinc sulphate as a preservative.

Molasses renders the lime more soluble and causes it to penetrate the wood or plaster surface; a pint of molasses to five gallons of whitewash is sufficient.

Silicate of soda solution (about 35 degrees Baume) in the proportion of one to ten of whitewash produces a fireproof cement.

A pound of cheap bar soap dissolved in a gallon of boiling water and added to about five gallons of thick whitewash will give it a gloss like oil paint.

An old receipt for whitewash, issued by the lighthouse board of the

treasury department, said to be very good for outdoor exposure, is as follows:

Slake half a bushel of unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt, dissolve in warm water; three pounds of ground rice put in boiling water and boiled to a thin paste; half a pound of powdered Spanish whiting and a pound of clear glue, dissolved in warm water; mix these well together and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace; and when used, put it on as hot as possible with painters or whitewash brushes.

The washes which contain milk, flour, or glue are not to be advised for use in damp, interior places, owing to danger of decomposition of the organic matter. For such locations it is better to use one of the formulae containing none of such ingredients. Whitewash is applied with a broad whitewash brush and is spread lightly over the surface, no attempt being made to brush it in as in the case with an oil paint.

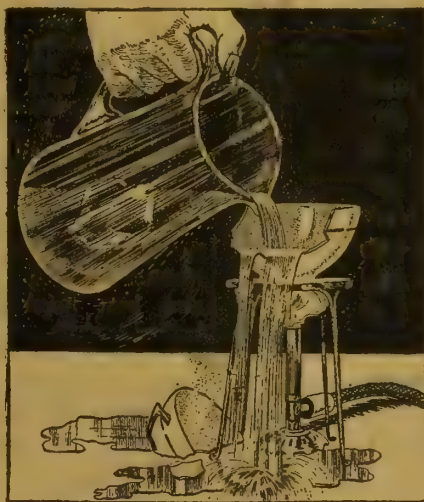
A good whitewash recommended by Dr. Colt for young trees, or where they have been heavily pruned is what is commonly known as California tree whitewash:

Quicklime ..... 30 pounds

Tallow ..... 4 pounds

Salt ..... 5 pounds

Water enough to make the mixture flow freely.



Porcelain-ware

Inferior insulators, like cheap porcelain-ware cups, break under sudden changes of temperature



Stone-ware

Stone-ware withstands extremes of heat and cold. That is why Vitristone insulators do not break

## Why 92 out of 100 spark plugs fail

*Insulators of inferior material cannot withstand modern engine conditions*

OUT of 100 discarded spark plugs, taken at random, careful examination by experts showed that 92 were rendered useless by breakage of the insulators.

Both laboratory and road tests have proved this insulator breakage is due almost entirely to inferior material.

Inferior insulators cannot withstand the severity of modern engine conditions. In spark plug service they are subjected to intense heat—2000° to 3000° F.; rapid changes of temperature; high speeds; and hammer-like blows of compression. It is only natural that they should crack and break down.

Last year 42,000,000 plugs were thrown away, largely due to breakage of inferior insulating material.

#### The development of Vitristone

After eight years of experiments in the Red Head potteries, spark plug experts perfected an insulating material that would not crack under



Chalky, inferior insulators break down under heat. Rugged, crystalline Vitristone withstands the severest conditions

the heat and vibration of the engine—the greatest advance made in spark plug construction in the past ten years.

Vitristone—the new insulator—is an artificial stone. Its rugged, crystalline structure is unaffected by rapid changes from extreme heat to extreme cold. It withstands the most intense vibration.

#### Built for years of service

Rigid tests insure gas-tightness and insulator efficiency in all Red Head plugs. If a Red Head misses, clean it, and nine times out of ten it will fire 100% right. It is easy to clean. Don't wait till your spark plugs crack and miss fire. Put a full set of Red Head plugs in your engine today. There is a Red Head plug for every requirement.

Your dealer has Red Head plugs in stock or can get them for you. If he does not, write to us for the name of the nearest dealer who can supply you.

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**Red Head Spark Plug**  
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## Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

### Feeding Smutty Oat Hay

I have 15 acres of oats that I will make hay of. It is very smutty. Is there any treatment I can give it as I put the hay in the barn so it will not be injurious to the horses that eat it? Will it kill horses? — C. C. T., Squaw Valley.

Hay made from very smutty oats is generally very dusty. For this reason, or perhaps because of the effect of the smut itself, it is likely to cause heaves in horses and may give rise to bronchial troubles. Such hay had better, therefore, not be fed to horses. It can probably be rendered a safe horse feed by moistening it slightly with water as it is placed before the horses. So far as is known, there is no danger from feeding such hay to cattle, however, and the safer method would be to feed it that way, or, if fed to horses, to feed it in moderate amounts only.—F. W. Woll.

### Garbanzos and Horse Beans

What do you think of the advisability of planting Horse beans or Garbanzos as a winter crop with grain? Has this been tried successfully? Were the beans sowed broadcast and harrowed in or put in with planter? Would early fall planting be advisable for the beans?—Subscriber, Modesto.

We would not recommend planting Horse beans or Garbanzos with grain. Neither the beans nor the grain would give best results when planted together, while if grown separately they would both give good crops. The Horse beans may be planted in early winter in drills. The Garbanzos will be better planted in early spring in drills.—D. F. R.

### Bermuda Onions

I am thinking seriously of putting out about one-half acre of White Bermuda onions and would like to know whether it would be advisable to plant the seeds sometime during this summer, raising small onions by fall and then setting the green onions in rows four to six inches apart in the row, and rows 18 inches apart. I am anxious to know whether or not they will do well during the winter, and if White Bermuda would be as good a variety as I could get? — Subscriber, San Bernardino.

By planting the seed at once sets could be grown which would be ready for transplanting in October. Or the seed could be grown in August and the young plants transplanted to the field when seven to nine weeks old in rows as you suggest. The Bermuda varieties are the ones grown in the Imperial Valley. The seed is sown from August to October and grown through the winter. These ripen in the spring earlier than any other variety.—D. F. R.

### House Fleas

Can you tell me how to get rid of fleas which seem to keep headquarters in an old milk house now used for tools and storage?—Subscriber, Glendora.

Use dry slacked lime freely about the infested room. Hosing down and washing the dust away is a help. If the lime is used slack by adding only sufficient water so it will slack into a dry powder. As insect eggs are scattered about where there is decaying vegetable matter and dust it should be removed so far as possible. In this cleaning up process relief may be

had for the operator if a liberal supply of buhach or insect powder is sprinkled into stockings and underwear before going into the room.

### Ants in Lawn

Can you give a method for exterminating ants in the lawn and yard?—Subscriber, Eagle Rock.

Mr. Neff in a former Cultivator gives the following formula for destroying ants: "Three tablespoons honey, and tartar emetic the size of a lima bean. Mix and put in two or three saucers and place where ants are proving troublesome."

### Morning Glory

I have wild morning glory in my prune orchard and want to know if distillate will kill it without injuring the trees. If not, what remedy can I use?—Subscriber, Santa Rosa.

There is only one satisfactory method for the eradication of morning glory and that is by use of the sharp weed cutter of the straight bar type. Shallow cutting is all that is necessary but it is best to cut at least twice every week. If this campaign is persistently followed for a few weeks, never allowing a green leaf to appear above the surface of the ground, the pest can be killed. Distillate over the leaves when sun is giving its greatest heat will kill some of the plants, but cultivation is more effective.

### Poison on Cabbage

Would there be danger from poison by eating cabbage that had been sprayed several times liberally with lead arsenate? Would it affect poultry if they ate the leaves?—Subscriber, Long Beach.

Presumably not. If the cabbages are hosed over before being picked there is no danger. If the spraying was properly done even the hosing would not be necessary.

### Aphis

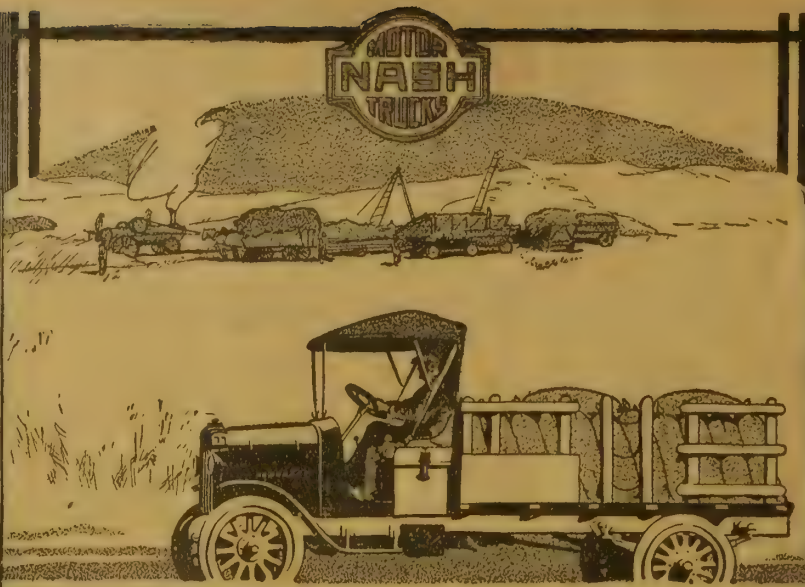
What can be done for aphis on an awfully run-down place? Trees have been sprayed once but are still covered with them, also all the vegetables. What shall I use for spraying orange trees and when?—Subscriber, Downey.

Spray the trees with tobacco extract, either by using tobacco stump or cigar factory refuse and steeping one pound in one gallon of water and reduce by adding three gallons more of water. Or a simpler way is to purchase the nicotine sulphate, 40 per cent strength and dilute at the rate of one pound to 100 gallons of water. Then be sure that all weeds or unnecessary plants are eradicated as they afford breeding ground for more aphis.

### Rose Leaf Blight

Can you tell me what is the trouble with my roses? As fast as the buds burst they seem to dry up. Is this rose blight? If so can you tell me what to do for it? — Subscriber, Elk Creek.

This is rose leaf blight, a fungus disease directly affecting the foliage. If it in any wise directly affects the blossom I am not aware of it, but it is a disease very hard to combat and is closely related to the leaf blight of the strawberry and treated in the same manner. But strawberry growers are much puzzled in seeking control over this blight. I cannot precisely define the trouble stated but believe sulphuring would ameliorate conditions. It may be that spraying with Bordeaux mixture would also aid.—E. B.



QUICK AND ECONOMICAL TRANSPORTATION

## Replace Teams With Nash Trucks

If horses were not so scarce and so high in price, Nash trucks would still be an economy hauling your loads of wheat.

Of much greater capacity and speed than the team and wagon, Nash trucks in your service not only cut down the number of trips to town in busy harvest time but release valuable harvest hands for more important work. For one Nash two-ton capacity truck will do the work of several teams and wagons, do it better and do it at less cost.

You can leave home later and get back earlier. Measured by the clock, the distance to town and back is less by hours. And the Nash truck does not have to rest, but can haul as far and as often as necessary.

The Nash two-ton capacity rear driven truck is particularly adapted to long and heavy hauls because it, like all Nash trucks, is equipped with an M. & S. automatic locking differential. When, for any reason, one driving wheel loses traction momentarily, its mate gets practically all the power and drives the truck ahead out of difficulty.

This lets Nash trucks get through where other trucks without this important feature cannot go.

Let a Nash transportation expert tell you the many ways a Nash truck can save money hauling your loads.

One Ton Chassis, - - -	\$1595
Two Ton Chassis, - - -	2075
New Quad Chassis, - - -	3250
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# NASH MOTORS

VALUE CARS AT VOLUME PRICES

(703A)



## Field Notes from the Live Stock Men

Beauty Girl Pontiac Segis is indeed a "beauty girl." If we had a few more like her the milk question would be in a fair way to be solved. This pure-bred Holstein heifer has produced in one year 1112.48 pounds of butter and 24,923 pounds of milk. With this enormous production to her credit she becomes the second highest record heifer for butter production and the highest record heifer in the world for combined milk and butter production. Beauty Girl Pontiac Segis is the highest record daughter of King Segis Pontiac Count. The daughters of this great sire hold more world's records for milk and butter in the prize division than do the daughters of any other sire living or dead. The dam of Beauty Girl Pontiac Segis is Princess De Kol Beauty Girl. This champion heifer was bred by Arden Farms, St. Paul, Minnesota, owned by Senator J. M. Hackney, and made all her records there.

Rosalie of Woodend 39337 is the first class leader to be bred at Woodend Farm, Mound, Minnesota. She finished on February 8 her second yearly test with 13,611.7 pounds of milk and 768.50 pounds of fat in class B, giving her eighth place in the class. In her test in class F she held out so well that it was thought best to retest her. Her present record of 768.50 pounds marks her as the highest producing daughter of Imp. Cora's Governor of Chilmark 8971 and she is his third daughter to pass the 700 pound mark. Another daughter, Antoinette of Chilmark 24816, started on retest in class A one day ahead of Rosalie of Woodend 39337 and escaped the 700 pound mark by only one and five one-hundredths of a pound—her record being 14,017.7 pounds of milk and 698.95 pounds of fat. Another 700 pound daughter of Imp. Cora's Governor of Chilmark 8971 is Caroline of Chilmark 24812, owned by G. W. Wilder of Colton, California, with a record of 15,185.3 pounds of milk and 722.97 pounds of fat in class A.

Ninety-six Jerseys averaged \$630 at Cooper sale at Coopersburg, Pennsylvania, on Decoration Day. The total number of animals sold was 96, for an aggregate of \$60,555. Fifty-one cows sold for an average of \$787. Thirty-two heifers sold for an average of \$412. Twelve bull calves averaged \$579. The only aged bull offered brought \$250. The great cow, Vermonia, was withdrawn when a starting bid of \$4000 was not to be had. T. De Witt Cuyler, the owner of White Horse Farms, Pennsylvania, was the leading buyer. In addition to paying \$2700 for Pretty Jersey Belle, the top-price cow of the sale, Mr. Cuyler bought nine other head that made up the total of \$11,350 for his purchases. Pretty Jersey Belle was a winner at the Royal Show on the Island of Jersey, and also has an official butter record.

The Hood Farm sale at Lowell, Massachusetts, on June 1 established new records for the sale of American-bred Jersey cattle. The leading cow was Sophie's Agnes, a wonderful cow, with good, clean lines and exceptional milk machinery. She already has two Register of Merit records as follows: 10,171.4 pounds milk, 619.89 pounds fat at three years, three months; 14,149.7 pounds milk, 834.88 pounds fat at four years, nine months. She is now on test and promises to exceed the record of her granddam, Sophie

19th, the record holder of the Jersey breed and of all breeds when long distance production is considered. "Agnes" was quickly bid to \$9000, and was knocked down to Ayredale Stock Farm, Bangor, Maine, for \$10,099. It was evident that the buyer wanted to beat the record price paid for a Jersey which was established only a few weeks ago. The ringside considered her a bargain at this figure, however.

The next highest price was obtained when three sons of Sophie 19th, one by Sophie's Torono, one by Champion Torono's Son, and the other by Sophie's Bertha's Son, were led into the ring. E. C. Lasater of Texas paid \$7500 for a choice. He selected Sophie 19th's Tormentor by Champion Torono's Son.

Tilly Alcartra still continues on her merry way. Last week she milked 114 pounds in one day and did not fall below 110 pounds any day. At present, in her fifth month, she is going over 20 pounds milk per day above the corresponding days of her world's record year and is testing higher than ever before. Not the least of the wonders of her present record is the fact that she is not receiving an ounce over 16 pounds of grain in her ration daily, completely upsetting in practice the theory that a cow must receive a given number of pounds of grain to a certain number of pounds of milk yield.

Wm. T. Miller, Ripon, unquestionably secured one of the many real bargains in the fourth Sacramento sale when he bought the heifer A. W. P. Princess Cornucopia from the Bonita Stock Farm consignment for the modest sum of \$425. She is a daughter of the richly bred proven sire, Admiral Walker Prilly and is out of a 25.97 pound dam that made 17,516.6 pounds milk and 847.55 pounds butter in one year as a four year old. She is also heavy with calf to the 32 pound sire Supreme Glista Pietje, and is herself a most promising individual.

The N. H. Locke Company Sale of registered Jerseys has been postponed from the original date June 27 to Saturday, July 6. The catalog of the big sale is now on the press and will be ready to mail out about June 25. California Breeders Sales and Pedigree Company, Sacramento, which manage the sale, report that if inquiries count for anything there will be breeders in attendance from long distances. An unusual feature of the sale is the fact that there are 40 registered Jersey bulls catalogued for sale, more than half of them ready for service, including many bulls of show quality and out of the greatest producing cows in the herd. The large number of bulls to be sold makes it a foregone conclusion that many of them will go at bargain prices, and breeders and dairymen will no doubt be on hand in numbers to take advantage of the condition.

A. W. Morris & Sons' Sale of 125 registered Holsteins has been postponed from the original date of July 11 to Thursday, July 25. The catalog is now in preparation and shows a wonderfully well bred lot of cattle that will be sold under conditions which do not promise anything but very moderate prices. Three 30 pound cows, three cows above 1000 pounds butter in one year, three sisters to Tilly Alcartra, are only a starter to the entire list in the sale. Of the total offering at least 100 head will be cows, and upwards of 75 per cent of them are bred to King Mead of Riverside and Prince Gelschê, Walker.



Your need of a  
**DE LAVAL**  
CREAM SEPARATOR  
is greater right now  
than ever before

These are the days of the full milk pail.

But if you are trying to get along without any cream separator, or with an inferior or half-worn-out machine, the more milk you get the more cream you lose.

And no farmer can afford to lose even a little cream when butter-fat is selling at from 40 to 50 cents a pound.

With butter-fat at present prices, and our country begging us to stop waste, "cream slacker" methods of skimming milk must go.

Get a De Laval right away and put all the cream in the cream can.

There is no other cream separator that can compare with the De Laval in clean skimming, capacity, ease of operation, freedom from repairs and durability.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

**DE LAVAL DAIRY SUPPLY CO.**

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.  
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme  
Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and  
Deep Well Pumps and Alpha Spraying Outfits. Catalogs of any  
of our lines mailed upon request.

61 BEALE STREET, SAN FRANCISCO  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Buy Your Next Sire at HOLLYWOOD FARM

Herd of 300 head headed by  
**Judge Segis**



Judge Segis

25 of whose heifer daughters sold for an average of \$875 in a recent Syracuse sale. JUDGE SEGIS' first daughter to be tested at over five years of age made above 37 pounds butter in seven days, and his list of tested daughters justly bestows upon him the title of the best son of King Segis in service. Let us tell you what we have on hand, or in prospect.

**Hollywood Farm** F. S. Stimson, Owner  
Hollywood, Wash.

## HEREFORDS

A large herd of selected stock to choose from.  
Everything sold is guaranteed as represented.  
Why send East for breeding stock when we can supply your needs. Save  
time and money by writing us for particulars.

**Cottrell & Packard, Tempe, Arizona**  
Members Pacific Coast Hereford Breeders Association

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT

**Hauser Packing Co.**

**Los Angeles**



## Draft Horse Production Has Declined

By Wayne Dinsmore, Secretary Percheron Society of America

Horse production has been greatly reduced in the past two years. Buyers who are much in the country report that there are very few foals in sight this spring and not many yearlings. This is borne out by field investigations made the last week of May, 1918, by the Percheron Society of America. While some communities have kept up fairly well on horse production there has been a tremendous decrease as a whole. Thousands of farms in the corn belt states have not enough young horses coming on to supply their own requirements for replacement. Instead of having surplus to sell, they must buy.

There is a shortage in the world's supply of draft horses. War interfered with horse breeding operations in France and Great Britain and drew heavily on their existing supply. The real lack of heavy teams has been felt most acutely in the past ten months.

### Few States Produce Surplus

It must not be forgotten that the area in which draft horses are produced in such numbers as to provide a surplus over local needs is very limited. The United States is the only nation in the world producing any surplus of this kind, and only a few states in the Union have the foundation from which to rear a surplus of heavy horses. The states east of Ohio and south of the Ohio River do not produce enough draft horses and mules to supply their own farm needs; and the same is true, so far as grade draft horses are concerned, of all the states south of Kansas or west of Nebraska. Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, Nebraska and the Dakotas are the only states producing a surplus of heavy draft work animals, and only four of these produce any considerable surplus of real drafters. These few states of the Middle West must produce draft horses to supply the world.

On any well managed farm enough colts should annually be reared to make it possible to keep farm work going at maximum efficiency and to render feasible the sale of horses sev-

en or eight years old. This eliminates depreciation and reduces losses by death to less than one-half of one per cent. If horses are produced as they should be on our farms, appreciation rather than depreciation in value will result.

We are being urged to increase the production of foodstuffs by better crop methods and increased acreage; but it must not be forgotten that the existing need for such increased production will last for several years, and without abundant horse power on our farms our desires will be set at naught. It is folly to permit our supplies of horses to be reduced and then seek to fill the gap with tractors, for every man capable of working on tractor manufacture is far more urgently needed in the shipyards, gunships and munition works where trained mechanics must be had in ever increasing numbers. It is up to the farmers of the central west to see that draft horses are produced in sufficient numbers to make it possible to divert these trained steel workers into the shipyards and munition works without limiting our farm power in any degree.

### Horse Power Essential to Low Production Cost

Horses—big horses and plenty of them—have made it possible for the American farmer to produce more per capita employed on farms, than the men of any other nation. The yield per acre has not been as high as in countries where laborers cost but a few cents per day, but the total yield and the high yield per man stands to our credit. The best informed farmers and horsemen in America are united in declaring that increased draft horse production is more urgently needed, and needed now.

From the standpoint of your pocket book, your need for farm power, and your desire to do all you can to aid in winning this war, you should breed draft horses and encourage others to do likewise. Percherons are the seed stock which must be had in abundance to carry forward this increased production of drafters. Care for them well.

## Fill the Silo

Written for California Cultivator

**P**RESUMABLY the silo crops are planted and the silo is either constructed or planned by this time. But its filling may not be planned, so, as a suggestion, may we not refer to the fact that some dairying neighborhoods have united in purchasing cutter and equipment for filling. In the present labor situation the neighborhood "bee" proves entirely satisfactory.

Ten acres of corn will produce approximately 100 tons of silage; it will feed 30 head of cattle 180 days.

Approximately 100 tons of silage equals 33 tons of alfalfa hay. Thirty-three tons of alfalfa hay is worth—but the dairyman has figured this often enough to know it's worth some money. The 100 tons of silage is worth, or will cost to grow and place in the silo ready for feeding, say around \$2.00 per ton, or, with labor at present enormous profits, we can say \$3.00 per ton, and still, value for value, corn silage and alfalfa carefully compared shows the silage to be far the

cheaper. In fact, some dairymen who are careful calculators estimate that with moderate priced silo the saving in feed costs will cover construction of a silo the first year of its use. But a year like the present where every acre is expected to do its utmost, and, still more, a year like this when the dairyman, the beef feeder, and even the pork producer finds feeds beyond all reasonable cost, he may well consider the value of his own time and acreage in producing this cheap feed.

Regarding silage the New York college of agriculture says:

"The usefulness of silage is not confined to dairy cattle. It is of great value to stock which would otherwise be wintered on dry roughage. The thrifty condition of animals thus fed is a guarantee of economical returns. The judicious use of silage makes it possible to keep more stock on a given area, to balance nutrition and thereby to increase the feeder's profits. For growing, wintering and fattening beef cattle, no roughage may be of more value than silage if proper-



**PURE BRED** **REGISTERED HOLSTEINS**

## King Korndyke Pontiac

grows in popularity around our place as those splendid calves continue to be dropped to his service.

We know that you too would class him as highly as we do if you could see the beautiful sons and daughters of his that we now have in the herd.

None of his daughters are for sale, they will be kept right here and developed, but we have a few of his sons that will fit your herd and pocketbook.

You owe it to yourself to investigate this wonderful young sire, for his blood would mean much if introduced into your herd through one of his sons, and we are proud of the dams of these young fellows.

Visit the farm if you can, but get in touch with us some way and find how reasonably we offer these good young bulls and what liberal terms we are offering.


## Prince Gelsche Walker Korndyke

is shown below. His blood should nick particularly well with that of King Korndyke Pontiac, and we are making the cross in our matings.

## JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C.W. YOUNG SUPT.



## Have You Been Keeping Posted

on the wonderful records made during the past year by daughters of Pontiac Korndyke and his son King of the Pontiacs? This great sire and his great son stand in a class by themselves for proven power to transmit high production, and they are great grandsire and grandsire respectively of our wonderful young herd sire

## King Korndyke Pontiac 20th



who is out of the great heifer, Miss Valley Mead De Kol Walker, holder of two world's records, and who recently finished a test covering 339 days during which she produced 21,975.8 pounds milk and 1114.66 pounds butter, the second highest record ever made by a junior three year old even covering a full year.

A NUMBER OF FARSIGHTED BREEDERS HAVE BRED SOME OF THEIR BEST COWS TO THIS RICHLY BRED YOUNGSTER, AND WE WILL STILL ACCEPT A LIMITED NUMBER OF SERVICES FOR APPROVED COWS.

All we have to sell is a few choice bull calves sired by PRINCE RIVERSIDE WALKER, our senior herd sire, who is by the same sire as Miss Valley Mead De Kol Walker and out of the same dam as the world's yearly official butter record cow, Aaggie Acme of Riverside 2nd.

Our Entire Herd is Tuberculin Tested

## Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman



## Santa Anita Rancho Anoakia Breeding Farm Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

## Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce that amount of butter in one year.

We have a few of his sons, out of good record dams, for sale.

Inquiries or orders by mail will receive careful and prompt attention.

**SANTA ANITA RANCHO**

Anita M. Baldwin, Owner

**Santa Anita, Cal.**

W. H. Taylor Supt.



ly used. In combination with coarse roughage it keeps the bowels regulated and the animal in readiness to respond to change in feeding designed to promote growth or finish for the block. Cows do not age more rapidly, lose their teeth sooner nor fail to breed more regularly because of the use of silage.

"There is no better assurance that silage is without detrimental effect on the milk of a dairy cow than the fact that the large milk companies encourage the use of the silo among their patrons. Consumers are likely to prefer milk from cows thus fed."

The United States department of agriculture, says:

"Silage is a quick finishing roughage in that it produces large daily gains, a glossy coat and a soft, pliable skin. It can be used to advantage at times for carrying cattle for a longer

period so as to pass over a time of depression in the market or to carry the cattle along in a thrifty condition so that they can be finished at a later period. The theory that silage fed cattle shrink very heavily in shipping to market is erroneous. For 36 hours previous to shipment nice, bright hay should be substituted for the silage in the ration. Silage-fed cattle usually make more desirable carcasses than cattle fed a dry ration. Calves may be fed silage with safety when they are about three or four months old."

According to the University of Arizona college of agriculture the feeding value of one ton of corn silage, compared with other succulent crops is as follows: 1.5 tons sugar beets, 1.8 tons rutabagas, 1.8 tons carrots, 2.2 tons turnips, 2.4 tons mangels, 1.4 tons parsnips.

## Tales of a Traveler

Written for California Cultivator By C. A. Briggs

All things hum in Humboldt County. Men and bees reap nature's bounty, gather cash and gather honey, everybody's making money. No one there is living hard, measure rainfall by the yard, green grass grows the year around; milk checks just like money found.

A nationally known bulb grower and potanist is Carl Purdy of Mendocino County. He is well known practically everywhere but in California, making true again the old truth "that a prophet is not without honor save in his own country. California should wake up to what California and Californians are doing. Perhaps you might make a dollar if you woke up. Does that hit you?

"Fred" Johnson, that "feller" over in Napa County has got a number of just the very best Duroc-Jersey pigs it's ever been my good luck to see. Better look for 'em this year at the state fair. You'll have to go some if you beat 'em.

As fine a field of wheat as I ever saw will help beat the Germans this year, just beyond Napa on the road to Sonoma.

Anchorage Leader 5th, a son of Grand Leader now on Fair Oak Ranch, the home of Wm. T. Chapple of Willets, is an especially promising young boar and shows the type of his "dad."

## Care for the Sheep

At this time of the year maggots are prevalent and foxtail is becoming dry and troublesome, and the young sheep farmer should see his flock once a day. A beginner may not be fully aware of these minor ailments, and by reason of field work he may neglect his flock and incur losses.

Maggots are the result of eggs laid by the blow fly on a wet, foul, or bloody place on the wool, the most common place of infestation being about the rear when filth and moisture accumulate. The eggs hatch in a few days and the larvae crawl down and irritate the skin; this attracts more flies and the sheep may soon be alive with maggots spreading all through the wool.

When a ewe is twitching at the dock and seems restless you may be certain that she is infested by maggots. In very bad cases sheep will be found lying down separate from the main flock.

The treatment is simple, the important part being to get at the trou-

ble sure marks 'em. Another good boar at Fair Oaks Ranch is Royal Rival 6th. He has a good back, heart girth and the rest of his good points include almost all the points there are.

That was sure some sale of Guernseys on May 16 at Arcady Farm, Lake Forest, Illinois, where 67 head sold for a total of \$102,925; a bull sold for \$10,000; a cow, for \$5300; a two day old heifer calf brought the Red Cross \$20,500. The bull "topper" was Don Diavolo of Linda Vista, six years old, bought by John C. Hartz of Boston. The cow was Langwater's Luxury, four and one-half years old, sold to Frank D. Stout of Angus, Wisconsin, but the thing that interests the "Traveler" is that our old friend "Bert" Nixon of Yountville, Napa County, was there and brought two of the best ones home. I saw them and I don't blame him, for they are beauties; two straight clean heifers, Cora of Gerar 3d, who set "Bert" back \$2500, and Pencoyd's Secret Rose that made another hole in the bank account to the tune of \$1075. They surely look as if they were worth it. Guernsey lovers should see them.

The "Traveler" attended the two day sale of Holsteins at Sacramento June 5 and 6 and will tell you all about it later.

ble early. Clip the wool from the infected part and wash well with a five per cent solution of sheep dip (two tablespoons to a pint of water) and apply pine tar, which is healing and also keeps off the flies.

Make certain that you have destroyed all the maggots and watch the sheep for a few days. Also keep flock properly "tagged" to prevent wet or foul places that will attract flies.

An important preventive is to burn or bury all dead carcasses, sheep tails, etc. as the blow fly will breed only in decayed flesh. Destroying the breeding places in this way will reduce the blow fly attacks.

Foxtail

With the grass becoming dry there is considerable trouble from foxtail spears getting into the sheep's eyes. Lambs are especially affected as they have considerable wool about the face and eyes to which foxtail spears adhere readily. As soon as a lamb or ewe appears wet below the eye, or

## Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

**Pelandale Holsteins**  
Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.  
J. A. Pelanda, Rt. B, Modesto, Cal.

**Segis Pontiac De Kol Dutch**  
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

**Registered Holsteins**  
Young sons of Prince Hiske Walker out of A. R. O. dams for sale.  
H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.

**HOLMES STOCK FARM**  
Registered Holsteins of best breeding. Young bulls for sale.  
R. L. Holmes Modesto, Cal.

**White House Holsteins**  
A well bred proven herd sire for sale, also a few bull calves.  
A. M. Sibens, Rt. 1, Box 307, Modesto, Cal.

**Thompson's Registered Holsteins**  
Young bull calves for sale with yearly record backing.  
Luther Thompson, Rt. A, Box 351, Modesto, Cal.



Our Senior Herd Sire is KING KORNDYKE HENGVERELD ORMSBY 7th Five of his sisters sold at public auction for \$23,800, an average of \$4760.

This blood has made some of the world's greatest producers. Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Payne. Young bulls for sale. No females. REGISTERED BERKSHIRE BOARS, sons of the \$1500 boar Star Leader, for sale.

Kounlas Registered Stock Farms, Modesto, Cal.

## Prince Alcartra Korndyke



other cow of any age or breed. And today at past nine years of age she is making the greatest record for milk and butter of her whole career. We have only a few sons of Prince Alcartra on hand. We know if you could see them and find how moderately we price them that you would want one to head your herd. Come and see us, or write your wants.

The J. S. Gibson Co.

Williams

California

**Creamcup Holsteins** Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

## TAGUS HOLSTEINS

now comprise a carefully selected lot of well bred females headed by

**King Sadie Vale Rose**

son of King Korndyke Sadie Vale and a 27.98 pound daughter of a 32.41 pound cow. His three nearest dams average 33.82 pounds butter in seven days.

We are especially pleased with his first calves now coming on, and from now on we can furnish a limited number of his young sons out of well bred cows with good records.

Pacific States Corp.

Tulare, Cal.

H. C. MERRITT, Jr., Manager

## HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

## REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

**Whittier State School**

WHITTIER, CALIFORNIA

## SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals.


Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals to our consignment sales, or will sell your whole herd. Write us.

**California Breeders Sales and Pedigree Company**

C. L. Hughes, Sales Mgr., Sacramento - Cal





## DR. HESS DIP and DISINFECTANT

A Dip that is standardized, of uniform strength and **GUARANTEED**. One gallon makes 70 gallons of dipping solution.

### For Scab, Ticks and Skin Troubles

Dr. Hess Dip and Disinfectant cleans and makes the skin healthy. It is more than a Dip—it is also a Disinfectant. Use it freely about stables, hog pens and poultry houses to destroy disease germs and maintain good health conditions. Also for home use, in garbage cans, sinks, cesspools. Sold by 28,000 dealers on a money-back guarantee.

**DR. HESS & CLARK**  
Ashland Ohio

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

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## Cleveland Tractor



\$1600 f.o.b. Los Angeles  
F. T. Briles, S. Cal. Distributor  
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## THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

**ABSORBINE**



also other Bunches or swellings. No Blister, no hair gone, and horse kept at work. Economical—only a few drops required at an application. \$2.50 per bottle delivered. Book 3 R. free.  
W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

## Prize Winning Berkshires

Two High Class Jr. Boars, choice \$65.00. Six Fall Boars, choice \$50.00. Sired by Ames Rival.

F. P. Hall Perris, Cal.

## The Papec Pneumatic

Ensilage Cutter Beats Them All  
If you have the best silo it is the Simplex—an all one piece stave silo. For particulars write

**Santa Fe Lumber Co.**

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The Valve-in-head-type engine illustrated here, like all internal combustion engines, requires an oil that holds its lubricating qualities at cylinder heat, burns clean in the combustion chambers and goes out with exhaust. Zerolene fills these requirements perfectly, because it is correctly refined from selected California asphalt-base crude.



# ZEROLENE

## The Standard Oil for Motor Cars

### It Keeps the Engine Young!

Zerolene keeps the engine young—full-powered, smooth-running, and economical in fuel and oil consumption—because it is correctly refined from selected California asphalt-base crude. Gives better lubrication with less carbon. Made in several consistencies. Get our Correct Lubrication Chart covering your car.

At dealers everywhere and Standard Oil Service Stations.

**STANDARD OIL COMPANY**  
(California)

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Forest Home is not a full dress resort, but a delightful place for real folks who enjoy comfort, rest and a good time.

**THE HOTEL** is conducted on the American plan, with detached rooms, either close to the main building or as private and secluded as may be desired. The Table is generous in its appeal. Mountain trout dinners on the regular bill are served at least once a week, and the best the market affords is served in an appetizing manner.

HOUSEKEEPING TENTS AND CABINS  
You can have a housekeeping tent or cabin, supplied with all the necessities of a comfortable mountain home, if preferred.

For Information and Reservations Write Direct to

**Forest Home Outing Co., Forest Home, Cal.**



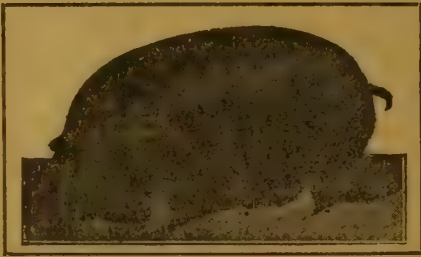
Mill Creek at Forest Home

## Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar, Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

**M. Bassett**

Hanford, Kings County, Cal.



Clean and Clear as Water



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## For Milking Machines

B-K keeps rubber tubes and teat cups sweet and clean. It penetrates milk solids and makes milk parts easier to clean—kills the bacteria that spoil the milk. B-K leaves no taste or taste of itself—makes rubber parts last longer—does not injure metal—is the cheapest in actual use. Sold under absolute guarantee.

Recommended by all Milking Machine Manufacturers

B-K has been used by thousands of milking machine owners including certified milk producers with complete satisfaction for over six years. It is the original purifier. Get B-K today—and cleaning troubles and sour milk losses. If your dealer does not have B-K send us his name with your order. We have a dealer near you.

Send for information—  
"trial offer"—  
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carrying the head a little to one side, it is well to catch her, and upon examination a foxtail spear will usually be found in the eye. This may be removed with the finger by rolling the eye backward a trifle. If the foxtail remains in the eye, the eye turns white, becomes greatly inflamed, and the eyesight is lost.

In treating for foxtail, it is important to get at the trouble early. When the eye becomes inflamed, it should be washed with a saturated solution of boracic acid or strong salt water. The eyesight is often lost, although occasionally the eye will become normal in four to six weeks.

Clip off the wool around the eyes of sheep to avoid further trouble.

### FARMERS ATTENTION

Farmers generally need to know and to understand that the federal employment service is establishing free employment bureaus or agencies all over this state to help the farmer secure the labor he needs to make and harvest his crops.

This service will not aid the farmer in any way unless the farmer will cooperate in the matter by going to and using the bureau. File your wants with the bureau agent and put it up to him to find you the help. He either will do so or will have to say that he cannot.

In event that he cannot get you the help then it is possible to get Mexican labor to aid in the harvest. The writer at the request of the farm labor committee of the state council of defense made a two weeks trip along the Mexican border and has made tentative arrangements for the bringing in of several thousand of these laborers if needed. But we must exhaust our own supply of laborers first. No one wants to have to resort to the importation of Mexican labor as long as we can avoid it, but food must be produced and labor must be had.

Once more, farmers call on your nearest free employment agent whenever you need labor of any kind. If you don't know him ask your postmaster. If he can't tell you then send a postal card to us.

This morning I walked down Second street in Sacramento and I think nearly 2000 idle men were there. The free employment office had applications for 1734 men and other employment agencies had orders for several hundred. More orders for men than there were men. Wages offered always from \$2.75 to \$5.25 per day, and yet the idle men will continue to be about the same. Who will be to blame if we have to bring in Mexican labor?

Some large employers of farm labor have indicated that in 1916 men worked an average of 11 days before laying off. In 1917 the average was seven days. This year it is five days. As the wages go up the number of days worked falls because it does not take so long to get \$15 or \$20 ahead and when they get that amount they retire until it is gone. Will laborers get wise to themselves and go to work and remain at work in time to prevent wholesale importations of foreign labor? We shall see. — J. P. Dargitz, Field Representative Public Employment Bureaus, State of California, representing the Farm Labor Committee, State Council of Defense.

### BACON QUARTERLY

The bacon hog now has an organ. Formerly this was the "Yorkshire Swine Monthly," but its field has been widened to include not only the Yorkshire but the Tamworth, both bacon type of hogs. The "Bacon Hog Quarterly" is published by R. W. Van Hoesen, Franklinville, New York.

## LONE STAR Registered Herd

800 Cows and 50 Bulls Best of Breeding Show Winners  
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.  
Scharbaud & Eldson, Midland, Texas



## HEREFORDS Unregistered Herds

4000 Head Both Sexes Same Breeding as Registered Herd  
Elevation 3000 Feet



Let Your Extra Tires for Your  
Vacation Trip Be

# HORSE SHOE TIRES

ROAD BATTLERS  
sound to Core  
GAME  
TO THE  
LAST THREAD

**PACIFIC  
RUBBER  
COMPANY**  
433-5 WEST PICO  
STREET  
**LOS ANGELES**  
DEALERS - EVERYWHERE

## CONTROL SCOURS IN CALVES

The practice of allowing calves to remain with their dams until large enough for weaning has been proved unprofitable where there is a market for milk or butter fat. Consequently most farmers who sell the product of their cows have adopted hand feeding for raising calves. The economy of this practice goes unchallenged, but there is constant danger of causing digestive troubles in the calf.

The digestive organs of the young calf are adjusted to receive warm milk direct from the udder in small quantities at short intervals. Of course it is impractical to imitate such conditions when feeding by hand, but they should be duplicated as nearly as possible to avoid scours. Prevention, says M. H. Fohrman of the University of Missouri college of agriculture, is the best means of control. Over feeding, irregular feeding, dirty pails, cold milk, sour milk, or old milk will cause trouble. These, however, can be avoided.

Constant vigilance is the price of healthy calves, and the feeder must always be on the lookout for indications of scouring. At the first indication of disease he should effect a quick cure before the condition becomes chronic. Where calves are fed from the pail it is easy for the feeder to watch tails and hocks for indications of scouring. As soon as trouble is detected the feed of the calf should be reduced at least half. Administer a dose of castor oil in warm milk by means of a small drenching bottle. This will tend to remove all irritating substances from the bowels. Feed should then be gradually restored to the normal amount, and formaldehyde solution should be added to the milk at the rate of one teaspoon per pound of milk fed. This formaldehyde solution should be made up as follows: One part of formalin (40 per cent solution of formaldehyde) to 31 parts of water. If prompt improvement does not follow this treatment, repeat the dose of oil, and accompany it with another reduction in the quantity of feed.

The most critical periods in the life of the young calf are at the age of four to six weeks when the feed is changed from whole to skim milk, and six to ten weeks, when the calf is beginning to eat grain and hay.

Calves are always greedy, and for this reason over feeding should be avoided. This is true particularly when alfalfa hay is being fed, as it is exceedingly palatable, and the animal is apt to gorge itself beyond the capacity of its digestive ability.

## NEW YORK'S DAIRY SHOW A GREAT SUCCESS

New Yorkers turned out by thousands to see the National Milk and Dairy Farm Exposition at the Grand Central Palace. And the exposition that greeted their eyes more than measured up to expectations. The New York state department of agriculture was the largest exhibitor, and its exhibit showed the entire process of milk production, while the home economics department, by women demonstrators, conducted a dairy restaurant at which it was possible to secure a strictly dairy meal at the cost of about seven cents. This was made up from seven very satisfying courses from soup to dessert, at one penny each.

The most elaborate exhibit at the show was that of the New York Milk Distributors. This was made up almost entirely of the ponderous machinery that is required to handle the great supply of milk from New York City. There were giant clarifiers, pasteurizers, filling and capping machines, and a conveyor system which almost eliminates human labor. The most interesting and educational feature of the show was the exhibition of rats fed on various forms of seed food, which showed that dairy products are absolutely necessary for animal health and growth.

## Grasp This Opportunity

No matter how busy you may be, no matter how long a trip you must make to reach Lockeford, you will be amply repaid for the trip in the bargains you are bound to find in the

## N. H. Locke Co. Sale

**85 Registered  
Jersey Cows in Milk  
45 Registered  
Jersey Bulls and Heifers**

**Lockeford, California, Saturday, July 6, 1918**  
(Postponed from June 27)

Never before has such a superb lot of Jersey individuals been offered at public sale in the west, including all of the famous show ring winners in the Locke herd.

KING'S VALET IMP., veteran grand champion winner at many first class shows, will be sold together with 35 of his daughters, 28 of them now in milk.

BORELLO'S GOLDEN LADDIE, himself a prize winner, will be sold together with all of his daughters, most of them in milk.

FOURTEEN DAUGHTERS OF VALET'S KING OF L are in the sale, and they are all in milk and a most promising group of heifers.

GERTIE'S LAD has three daughters in the sale, all of them beauties and large producers.

The cow testing association records of each individual cow is shown in the catalog, and you will know just what sort of cow you are buying.

OVER 40 BULLS ARE IN THIS SALE, more than half of them from one to two years old, and the large number to be sold makes it a certainty that many of them will go at exceedingly low prices. At the prices at which these bulls seem bound to sell a dairyman can well afford to make a long trip to take advantage of a condition in this sale which is likely never again to be duplicated in a California Jersey sale.

Remember also that every animal sold is positively guaranteed to be a breeder, is tuberculin tested and sold subject to tuberculin retest by the buyer.

LOCKEFORD is in San Joaquin County, about 7½ miles east of Lodi, on paved highway. There are only limited hotel accommodations in the town, and parties from a distance would do well to secure accommodations at Lodi, where it will be easy to secure motor transportation to Lockeford the morning of the sale. PLEASE NOTE—That on account of the large number of animals to be sold in one day it will be necessary to start the sale

Catalog now ready. Write for one.

MANAGEMENT

**California Breeders Sales and Pedigree Company**

C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneer—Col. D. L. Perry, Columbus, Ohio.

**Thursday, July 25, 1918**

*will be the date of sale when we will sell*

**125 Registered  
Holstein Cows, Heifers and Bulls**

—FOR—

**A. W. Morris & Sons Corporation  
Woodland, Cal.**

This sale was originally announced for July 11, but has been postponed to the date mentioned above.

This is going to be the real bargain sale of the year, from every present indication, and buyers make the very most of this unusual sale to secure for themselves some of the famous high record animals that seem bound to sell at very moderate prices.

There will be 100 cows in this sale, at least 60 of them bred to King Mead of Riverside and Prince Gelsche Walker, including THREE 30 POUND COWS, three sisters to

TILLY ALCARTRA, four daughters of IGNARO DE KOL, three cows with records above 1000 pounds butter in one year, several DAUGHTERS OF PRINCE GELSCHER WALKER,

several daughters of SEGIS PONTIAC DE KOL BURKE, four daughters of DE KOL BURKE, one of them a 32 pound four year old, TWO 29 POUND COWS, 38 cows with YEARLY RECORDS UP TO OVER 1000 POUNDS BUTTER, and a large list of high record, splendidly bred females.

There will be in this sale about 18 high record cows with blemished udders, most of them unmistakably with calf, and they will present an unusual opportunity to secure sons and daughters of the famous Morris herd sires at very moderate prices.

All, or nearly all, of the 100 cows are bred or else will be fresh just prior to

sale date, and a very large number of them are far along with calf. There will be some great buys among them.

PLEASE NOTE—Watch next week's issue for place of sale and more detailed announcement of the individuals to be offered.

Catalog now in preparation. Write for one.

Management

**California Breeders Sales and Pedigree Company**

J. M. Henderson, Jr., President

Sacramento, California.

C. L. Hughes, Sales Manager

Auctioneers: Col. Ben A. Rhoades, Harold B. Rhoades, Col. Cy N. Clark



# Cutter's Refined Germ-Free Anti-Hog Cholera Serum

*Produced in the Most  
Up-to-date and Best  
Equipped Anti-Hog  
Cholera Serum Plant  
in the World.*

Does away with the risks that necessarily attend the use of a serum that is not germ-free.

It is 20% more efficient, measure for measure, than the old type, "bloody" serum, is much more quickly absorbed, does not discolor the flesh at point of injection, and carries no liability of producing abscesses.

80 c.c. of Cutter's Refined Germ Free Serum is just as efficient as 100 c.c. of the best old type "bloody" serum.

But we make the old type serum, and do the job so well that though we have sold several million c.c. since we started production in 1917, there has been not even one complaint of failure to protect, or of bad effects following its use.

So, whether you use the old or the new kind, insist on "Cutter's," for in either case you will be getting the best that can possibly be produced.

Remember, a serum may be "clarified," or "clear," and still not be germ free. Such a serum is almost as dangerous as a "bloody" serum. Cutter's Refined Serum is not only clear but it is Germ Free.

Write for our two new booklets, "Hog Cholera Prevention," and "Special and Detailed Information Concerning Hog Cholera Immunization." From the latter you will learn what constitutes good work and why a competent veterinarian should be employed.

## Prices.

Cutter's Refined, Germ-Free, Anti-Hog Cholera Serum is 2½ cents per c.c.

Cutter's Regular, or "old type" Serum, is 1½ cents per c.c.

Cutter's Hog Cholera Virus, for use with either type of serum, is supplied at 1½ cents per c.c. It is dependable.

We prepay shipping charges.

Let your veterinarian order for you and encourage him to be liberal in estimating the amount of serum to use; safety lies in giving more than may be needed rather than trying to figure too fine.

Should he be prejudiced in favor of some other serum, there is a reason that concerns him but not you, except insofar as it should make you more insistent that Cutter's Serum be used. In such case do your own ordering direct from us. You will get "Cutter's" promptly, prepaid.

The Cutter Laboratory, Berkeley, Calif.  
(U. S. LICENSED)

"The Laboratory That Knows How"

## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy  
Perkins, Cal.

## GESTATION TABLE

The average period of gestation with horses is 337 days; cattle, 282 days; swine, 113 days; sheep, 148 days.

Date of Service	Mare	Date on which animal is expected to give birth.	Cow	Sow	Ewe
January					
" 1..Dec.	2 Oct.	8 Apr.	22 May	27	1
" 6.. "	7 "	13 "	27 June	1	6
" 11.. "	12 "	18 "	May 2 "	11	11
" 16.. "	17 "	23 "	" 7 "	16	16
" 21.. "	22 "	28 "	" 12 "	21	21
" 26.. "	27 Nov.	" 17 "	" 17 "	26	26
" 31..Jan.	1 "	7 "	" 22 "	31	31
February					
" 5.. "	6 "	12 "	27 July	1	6
" 10.. "	11 "	17 June 1 "	" 6 "	11	11
" 15.. "	16 "	22 "	" 11 "	16	16
" 20.. "	21 "	27 "	" 16 "	21	21
" 25.. "	26 Dec.	2 "	" 16 "	25	25
March					
" 2..Feb.	1 "	7 "	22 "	2	7
" 7.. "	6 "	13 "	27 Aug.	7	12
" 12.. "	11 "	18 July 2 "	" 12 "	17	22
" 17.. "	16 "	23 "	" 17 "	22	27
" 22.. "	21 "	28 "	" 22 "	27	31
" 27.. "	26 Jan.	2 "	" 17 "	31	3
April					
" 1..Mar.	3 "	11 "	22 "	1	6
" 6.. "	8 "	12 "	27 "	6	11
" 11.. "	13 "	17 Aug. 1 Sept.	" 11 "	11	16
" 16.. "	18 "	22 "	" 16 "	16	21
" 21.. "	23 "	27 "	" 21 "	21	26
" 26.. "	28 Feb.	1 "	" 26 "	26	31
May					
" 1..Apr.	2 "	11 "	21 "	1	6
" 6.. "	7 "	12 "	26 "	6	11
" 11.. "	12 "	16 "	31 Oct.	11	16
" 16.. "	17 "	21 Sept. 5 "	" 16 "	16	21
" 21.. "	22 "	26 "	" 21 "	21	26
" 26.. "	27 Mar.	3 "	" 26 "	26	31
" 31..May	3 "	8 "	" 30 "	31	3
June					
" 5.. "	7 "	13 "	25 "	5	10
" 10.. "	12 "	18 "	30 Nov.	10	15
" 15.. "	17 "	23 Oct. 5 "	" 15 "	15	20
" 20.. "	22 "	28 "	" 20 "	20	25
" 25.. "	27 Apr.	2 "	" 25 "	25	30
" 30..June	1 "	7 "	" 30 "	30	3
July					
" 5.. "	6 "	12 "	25 "	5	10
" 10.. "	11 "	17 "	30 Dec.	10	15
" 15.. "	16 "	22 Nov. 4 "	" 15 "	15	20
" 20.. "	21 "	27 "	" 20 "	20	25
" 25.. "	26 May	2 "	" 25 "	25	30
" 30..July	1 "	7 "	" 30 "	30	3
August					
" 4.. "	6 "	13 "	24 "	4	9
" 9.. "	11 "	17 "	29 Jan.	9	14
" 14.. "	16 "	22 Dec. 4 "	" 14 "	14	19
" 19.. "	21 "	27 "	" 19 "	19	24
" 24.. "	26 June 1 "	" 14 "	" 24 "	24	29
" 29.. "	31 "	6 "	" 16 "	29	3
Sept.					
" 3..Aug.	5 "	11 "	24 "	3	8
" 8.. "	10 "	16 "	29 Feb.	8	13
" 13.. "	15 "	21 Jan. 3 "	" 13 "	13	18
" 18.. "	20 "	26 "	" 18 "	18	23
" 23.. "	25 July 1 "	" 13 "	" 23 "	23	28
" 28.. "	30 "	6 "	" 18 "	28	3
October					
" 3..Sept.	1 "	11 "	23 "	3	8
" 8.. "	9 "	16 "	28 Mar.	8	13
" 13.. "	14 "	21 Feb. 2 "	" 13 "	13	18
" 18.. "	14 "	26 "	" 18 "	18	23
" 23.. "	24 "	31 "	" 23 "	23	28
" 28.. "	29 Aug. 5 "	" 17 "	" 28 "	28	3
Nov.					
" 2..Oct.	4 "	10 "	22 "	2	7
" 7.. "	9 "	15 "	27 April	7	12
" 12.. "	14 "	20 Mar. 4 "	" 12 "	12	17
" 17.. "	19 "	25 "	" 17 "	17	22
" 22.. "	24 "	30 "	" 22 "	22	27
" 27.. "	29 Sept. 4 "	" 19 "	" 27 "	27	3
Dec.					
" 2..Nov.	3 "	9 "	24 "	2	7
" 7.. "	8 "	14 "	29 May	7	12
" 12.. "	13 "	19 April 3 "	" 12 "	12	17
" 17.. "	18 "	24 "	" 17 "	17	22
" 22.. "	23 "	29 "	" 22 "	22	27
" 27.. "	28 Oct. 4 "	" 18 "	" 27 "	27	3

## Weights for Barn Use

A quart of the following feeds weighs the pounds or fraction of a pound opposite each:

Cottonseed meal, 1.5 pounds; linseed meal, old process, 1.1 pounds; wheat bran, coarse, .5 pound; wheat shorts, coarse, .8 pound, and fine, 1.1 pounds; corn meal, 1.5 pounds; oats, 1.2 pounds; crushed oats, .8 pound; barley meal, 1 pound.

## DON'T WASTE FEED

At least 37 per cent of the digestible material of the corn plant is left in the stover when the ears only are used. When corn is ensiled this 37 per cent goes into the silo with the 63 per cent in the ear. The importance of this saving will be more apparent when given a money value. With a yield of 50 bushels an acre, the value of grain is \$65, at \$1.50 a bushel. Since the stover contains more than one-third of the food nutrients it is worth at least one-half as much as the grain, or \$32.50. How many farmers will willingly leave in the field \$32.50 an acre? Yet this is done in many sections of the country where the corn is husked and the stover left in the field.

But suppose the dry stover is fed as roughage. Even then it is not saved as completely as in silage. When, under ordinary farm conditions, corn is cured in the shock the loss of dry matter is approximately 25 per cent and may be as high as 45 per cent. These losses are due to the breaking off of leaves by the wind

and in handling, and to destructive fermentations. The loss of dry matter in the silo is very slight when the silo is tight and the silage well packed at the time of filling. As silage the cornstalk is all consumed, but as stover only the leaves are eaten unless it is shredded, and even then a great part of the stalk is discarded. Some feeding experiments show that even in shredded stover the portion discarded is as high as 31 per cent. This is in addition to the loss of dry matter during the curing process.

Too frequently an unfavorable season like that of last year results in the loss of the whole corn plant or in immature soft corn that is of little value. By far the best method to utilize corn which is immature at harvesting time is to put it into the silo. Even frost-

ed corn will make satisfactory silage if harvested at once. If it becomes dry; it may be saved by adding water during the filling process.

The making of as much silage as can be used will do much to conserve the feed supply. Have you planned to fill that silo?

## WHAT THE COW TESTING ASSOCIATION CAN NOT DO

It can not compel a dairyman to dispose of his poor cows if he is determined to keep them. It can not make him feed according to production nor practice economy in the management of his dairy herd. It can not require him to dispose of his scrub bull and buy a better one. It has never yet demanded the planting of legumes and the building of silos. It never will compel, but it always will encourage, economical improvement of the herd, of the farm, and of the business.



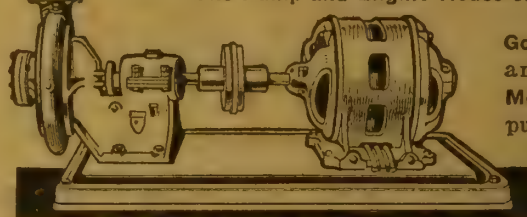
## PUMPS

**Are Helping To Win This War  
By Raising Water To Raise Food Stuff's**

What are you doing with your land? Big yields are necessary now and it is easy to sell what you raise at a high price. We know from experience what pumps and power are necessary to deliver the amount of water required at the lowest cost.

DEALERS:—Write for Unoccupied Territory.

**SMITH-BOOTH-USHER CO., Los Angeles**  
The Pump and Engine House of the Pacific Coast



Gould's Centrifugal Pumps and Crocker-Wheeler Motors reduce the cost of pumping. See our engineers and get first hand information.

## Boiling Points

—are vaporizing points. In Red Crown gasoline they form a continuous, uniform chain—giving steady, dependable power. Look for the Red Crown sign.

**STANDARD OIL COMPANY**  
(California)

## The Gasoline of Quality

Clean and Clear  
as Water



Awarded  
Gold Medal  
Pan-Pac. Expo.

## For Retained Afterbirth

When a cow fails to "clean" promptly, she should be flushed out with B-K. A retained afterbirth neglected may cause Abortion or Barrenness.

B-K as a douche brings the afterbirth naturally—saves removing by hand. B-K kills the infecting germs and foul odors—heals the uterus—removes slime and acid—no straining—no irritation. B-K is much more effective and safer than lysol, carbolic acid, Lugol's solution and oily coal-tar disinfectants, which do not cleanse the uterus, but make it more acid.

If your dealer does not have B-K, send us his name.

FREE BULLETINS: Send for complete information—"special trial offer" and bulletins No. 52, "Contagious Abortion," and No. 136, "Calf Scours."

**General Laboratories**  
3135 So. Dickinson St.,  
Madison, Wis., U. S. A.



Save Your Hogs

**Live Hogs Mean \$\$\$  
Dead Hogs Mean Loss**

## Economy Powder

Will Keep Your Hogs Well. Sample and Stock Book Sent Free  
**Economy Hog & Cattle Powder Co.**  
Hearst Bldg. San Francisco, Cal.

MAIN 1259 HOME 25679

**Rhoades & Rhoades**  
Expert Live Stock Auctioneers  
Pure Bred Stock Sales a Specialty  
Sales conducted in all parts of California  
and adjoining States. Twenty-five  
Years' Experience.

BEN. A. RHOADES, Auctioneer  
1501-3-5 So. Main St., Los Angeles, Cal.



## Experience in Insect Control

Horticultural Commissioner Bremner of Sonoma County writes:

"A mild winter and spring may possibly be responsible for the abundance of many of our common and some very uncommon insect pests in orchards and garden. In treating this condition we have found an old formula very effective in destroying all leaf eating forms.

"Dust the affected parts thoroughly, using either a coarse sack, blower or perforated can, with the following mixture: ten pounds hydrated lime (A grade), one pound Paris green. Sift the hydrated lime and mix thoroughly with the Paris green before placing in the dusting apparatus.

"For cutworms or beetles cutting off tomatoes or other similar plants near the ground, a perforated can is best as the stems must be covered at the surface of the ground. The cost of the materials for tomatoes is approximately \$1.00 per acre.

"Also wish to call attention in grape growing sections to the greater efficiency gained in controlling powdery mildew by the use of the more finely ground sulphurs now on the market. We wish particularly to recommend a product now being sold under the trade name of 'ventilated sulphur.' We also find this makes a very fine paste for use on red spider. In mixing sulphur paste we have found that more glue is necessary than at first supposed. We use at least one ounce to each five pounds of sulphur; the formula being as follows:

"Dissolve one ounce of dry glue in boiling water and dilute to one gallon. Stir this slowly into five pounds of sulphur. This is sufficient for 100 gallons of spray.

"This preparation is improved by standing and should be made up at least twenty-four hours before using."

## Financing Farmers

A number of San Francisco business men, working with bankers of Stanislaus County, have taken up the plan proposed by the California Development Board for financing food production. In a word, the plan is:

A group of men subscribe to a list by which they loan their credit to the banks, guaranteeing certain loans. Suppose Stanislaus County needs or could place \$100,000 or extend that amount of credit to practical farmers to increase the production of food-stuffs, but who had no security to offer the banks, 100 or 200 men can loan their credit to the banks in sums of \$500 or \$1000 each and through a board of trustees selected by the subscribers pass upon and endorse each loan made under the form of guarantee.

The plan decided upon, the next problem was where to get the money if the banks should need it. The development board was instructed to confer with the officials of the federal reserve bank, a branch of the United States treasury, to that end. This instruction was followed, and the resulting conferences with federal reserve officials proved that they were willing to do anything in reason to assist. Gavin McNab and Luther Elkins, attorneys for the federal reserve bank, and Geo. T. Wright, counsel for the chamber of commerce, drafted an underwriters agreement, form of note and endorsement that were entirely satisfactory to the bank, and the plan was successfully launched. There is little or no chance for loss; it is the intention to cooperate where possible with county councils of defense and their many patrols who will report all untitled acreage, advise where possible and report where aid is needed.

The business man and farmer are the same under the skin and this is simply a revival of the plan of our forbears helping a neighbor with teams and men in emergencies, only in this instance the business man loans his credit instead of teams. There is another much-to-be-desired result which this plan will aid in bringing about; the interests of the farmer and business man are absolutely interdependent, for everybody knows that when the farmer is broke we are all broke. These are critical times, and by settling himself in the collar alongside the farmer and pulling with him the business man proves that he is the farmers' friend, and to-

gether they will prevent others from rocking the old Ship of State. The majority of men yet believe that at least 95 per cent of their fellows will pay their debts if they have the money and will back their belief with their credit. The chief difficulty of the farmer has been his lack of organization and not knowing to whom to make the high sign for help when in trouble. It is hoped this plan will, to a great extent, remedy that.

As a business proposition the plan is an excellent one to develop the re-

sources of the county and state, but in the present emergency "business" is a side issue. When our forbears, with one hand on the Book and the other raised before their God, pledged their lives, their fortunes and their sacred honor in support of a document which their children's children are fighting to maintain, they took no thought of business.

### SHORT COURSES

The University Farm at Davis is issuing formal announcement of the short courses which will be given at University Farm, September 30 to November 8, 1918.

The purpose of the short courses in agriculture is to enable persons, especially those of mature years and ranch experience, to acquire a knowledge of the fundamental principles of agriculture and of the results of the latest investigations in the production of fruit, field and forage crops and live stock of the various classes.

There will be courses in general agriculture (including animal husbandry), horticulture, poultry husbandry and dairy manufactures. These courses will be followed by two-week courses in: Market milk production, November 11-22; butter making, November 11-21; cheese making, December 2-13; milking machines, December 2-13; beekeeping, December 2-7; gas tractors, November 11-19; gas tractors (experienced men only), November 20-22.

Thousands die every year from over eating—don't dig your grave with your teeth.

The U-boats are wasting our food; don't be a U-boat.



## Side Hills

The steel balls in the Yuba Ball Tread Tractor run in a steel ball race forming a tube. The thrust of the weight of the machine is borne just the same sideways as from the top. The round balls roll on an angle as easily as along the level. The Yuba is the tractor for side hill as well as level land.

Investigate this feature from Ball Tread owners.

**YUBA**

Manufacturing Company

Department B  
433 California Street  
San Francisco

## Yuba Tractors

John Deere Plows and Wagons  
Contractors' Equipment

**A. F. George Co.**

200 N. Los Angeles Street, Los Angeles, Cal.

## Reliance Irrigation Meter

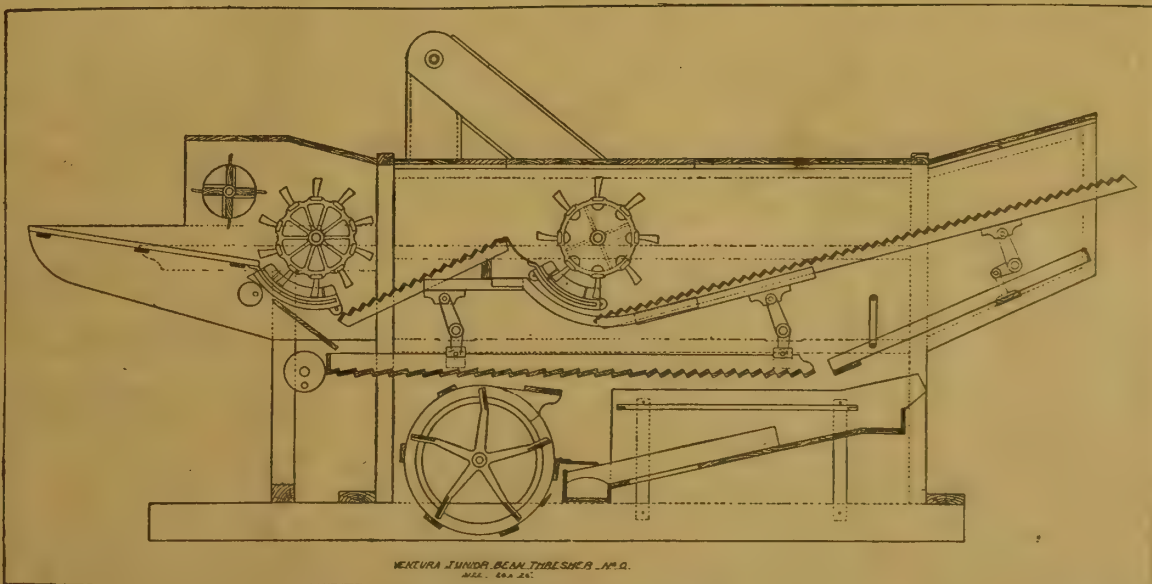
For Open Ditches, Reservoirs and Gravity Pipe Lines

The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch.

**Hydrometric Co.** 955 North Main St. Los Angeles, Cal.

When Writing Advertisers, Mention The Cultivator.

## Two Men Can Thresh Beans With This Don't Risk the Loss of a Valuable Bean Crop by Rain When You Can Get a Satisfactory Small Machine



VENTURA JUNIOR BEAN THRESHER, No. 2.

To meet the demands of hundreds of bean growers who have a comparatively small acreage, too small, perhaps, to obtain the services of threshing outfits employing 40 or more men, we offer the Ventura Junior No. 2 Bean Thresher, a thoroughly practical and satisfactory small machine that can be operated by only two men. It is made on the same principles as our larger machines that have given satisfaction in California for the past 22 years and will thresh every variety of beans. Can be operated by tractor or gas engine and easily loaded and moved from place to place.

It is sold mounted or unmounted and with or without gas engine. This thresher is equipped with cylinder teeth as found by experience to be far superior to machines made elsewhere equipped with round iron pegs for teeth. The cylinder teeth in the Junior O can also be equipped with clips,—special Ventura devices for quick accurate adjustments.

We make six sizes of bean threshers. Write us regarding bean threshing machinery, stating what acreage and power you have and in what capacity machine you would be interested.

Our manufacturing facilities here are such that we offer our customers superior service as compared to service from the east necessitating long freight hauls on heavily loaded roads. If you want a bean thresher it would be prudent to order early and order where you know delivery can be made and where parts can be obtained on short notice.

**The Ventura Manufacturing and Implement Co.,**  
Ventura, Calif.



## Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 31,000 readers, weekly.  
Liner rates: Single insertion 3c per word;  
yearly contracts 2½c per word; 35c per issue minimum charge.

### TREES

**For Sale to Nurseriesmen or Large Planters**—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by July 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

**For Sale**—Extra fine Valencia trees, ¾ to 1½, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, California. Phone, Anaheim Pacific 403-J.

**High Prices For Figs**—Insure a large crop of Smyrna figs this year by using plenty of Capris. Make reservation now for June-July delivery of guaranteed Capri Figs. Price \$6.00 per thousand. Write stating quantity desired. L. C. Collins, Ceres, California.

**For Sale: Citrus Trees**—Choice stock, young and thrifty. Selected buds, Valencia and Washington Navel, Eureka and Rialto seedless lemon. Marsh seedling grapefruit; also young seedlings. W. W. Burns, 631 Security Bldg., F 3110, Los Angeles.

**100,000 Sour Orange Seedbed Trees**—50,000 sweet; choice new stock. Trees lined out this year sure to hit high market. Better plant a few thousand next spring. Southland Nurseries, 1941 East Colorado, Pasadena.

**Valencia Oranges and Eureka Lemon trees** one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

**For Sale**—5000 one year old seed bed stock. 150 Italian Cypress 5 to 7 feet balled. 100 Feijoa 3 to 5 feet balled. Enterpriser Nursery, R. D. 2, Box 305, Pasadena.

### SPECIAL

**SHARPLESS AVOCADO TREES** Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

**Citrus Trees**—All kinds, any quantity. Butler's Morning Side Nursery, La-Manda Park, California.

**Citrus Nurseries**, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

### SEEDS AND PLANTS

**Bean Seed For Sale**—We have good seed beans on hand of following varieties: Limas, blackeyes, large white, small white, pinks, Teparys, Henderson bush, Mammoth bush. Now selling bean bags for fall delivery. C. C. Collins Company, Santa Ana, California. Sunset 71; Home 172.

**Early Amber Sorghum** makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

**Sudan Seed 17½c**, Amber Cane 7½c, Feterita, Egyptian Wheat, Red and White Milo Maize, Hickory King Corn extra good. Dwarf White Milo Maize yields 21 sacks per acre. S. Peruvian Alfalfa. Box 501, Fowler, California.

**Belladonna Seed** for sale in from 1 pound to 50 pound lots. Selected seed from strong thrifty plants. Prices reasonable. Address Bellatopia Ranches, P. O. Box 1470, Los Angeles.

**Sudan Seed** makes good quick feed, 17½c per pound. Wm. Ritchie, Riverside, Arlington, California.

**Yellow Sweet potato plants** \$1.00 per thousand. W. L. Lutz, R 3, Santa Ana.

### ENGINES

**Several New and Slightly Used Engines**, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

**For Sale**—One 15-30 Gas Pull Rumley engine, cost \$2000.00, will take \$1500.00. Abram Marron, Jr., Box 10, Oceanside.

### PATENT ATTORNEYS

**Patents that protect** are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

**Patents**—Copyrights, trade marks and labels registered. Solicitor of American and foreign. James R. Townsend, 712 San Fernando Bldg., Los Angeles. Phone: Home A4619; Sunset Main 347.

### LUMBER

**Lumber-Sash-Doors-Plumbing**—Supplies—Building materials of all kinds. New and second hand. A. R. W. shingles 60c per bundle. Send list for estimate. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

### GOVERNMENT LAND

**Be Patriotic**—Raise stock. Oregon, California openings. Valuable land marked plainly on County sectional map. \$2.50 any county. Booklet Free. Joseph Clark, Sacramento, California.

### MACHINERY

#### FOR SALE—WHY BUY NEW?

**SAVE YOU HALF MATERIAL GUARANTEED**  
**IRRIGATING PIPE**—1000 ft. 4-in. at 16½c; 400 ft. 10-in., 44c; 4-in. riveted 16c. **WINDMILLS**—8 ft. \$29; 10 ft. \$39; 12 ft. \$55 to \$65; 16 ft. \$95 to \$125, cost \$280 new; costs nothing to run.

**DEEP WELL PUMP, BULLDOZER**, 20-in. stroke, with 7-in. cylinder, 100 ft. 8-in. casing, rods, all for \$225.  
**HOW'S THIS?** 25,000 gal. redwood tank, \$125; 1500 gal., \$22; galv. drums, \$4; 30 gal. hot water boilers, \$350; 8000 gal. heavy corrugated galv. tank, \$150; 900 gal. heavy riveted steel wagon tank, \$68; wagon tanks, \$28 to \$48; new, used redwood, galv. tanks, all sizes.

**ODDS, ENDS—CHEESE CUTTER**, \$5; automatic chicken feeders, \$2.50 capacity 50 chickens; large rendering kettle, \$10; alfalfa cutters, bone grinders, blower, cable; heavy log chain and drag hooks, \$10; big hay fork, \$6.75; low down tank pump, \$7.50; wheelbarrows.

**DEEP WELL PUMP, DOUBLE-ACTING AMES**, pumps more with less power, \$145, or complete with 7-cylinder 100-ft. 8-in. pipe and rods, \$375. Large Myers Bulldozer pump, \$78; small size, \$42.50. No. 4 vert. B. & J. two-step centrifugal pump, \$150. Many others.

**USED PLOWS, MOWERS, RAKES**, cultivators, single disc riding plow, \$47.50; 14-in. Gilpin Deere riding plow, \$32.50; 4-gang Stockton, fine shape, \$27.50; spike harrows, mowers, rakes, bean cultivators, \$45; spring tooth harrows.

**SUNDRIES, CHEAPEST IN TOWN**: material guaranteed. Office DEMMITT CO., 120 N. Main, upstairs. Yards 816 Yale. Phone 15191, Edwy. 1984, Los Angeles.

#### REMANUFACTURED PIPE

All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.

#### WEISSBAUM PIPE WORKS.

169 Eleventh St., San Francisco.

**Automobile Motors for Sale**—These used motors in fine condition; for stationary work, pumping or for tractor. Bargain prices. Big supply. Send for catalog. Economy Auto Parts Co., 490 Golden Gate Ave., San Francisco.

**For Sale**—1 Russell thresher, 30x50 fully equipped. 1 Rumely GasPull Tractor 15-30; both in first class condition and have had little use. Will sell cheap. L. A. Skiles, Neenach, L. A. County, California.

**Gasoline Engines**, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

**For Sale**—Holt 1911 Sidehill combined harvester 16 ft. header 24 inch cylinder, \$500; cash or terms. B. Buckley, Berkeley.

**For Sale**—Stationary thresher complete outfit including engine. Ready for field. A real bargain will sell cheap. Route C, Box 82, Hanford, California.

**Sandusky Tractor** with three gang plow. Perfect condition, nearly new. Price \$1500 cash which is half value. Owner 319 Central Building, Los Angeles.

### WANTED

**Wanted**—Motormen and conductors by Pacific Electric Railway. Age 18 to 35. Apply in person to Superintendent's office, 218 Pacific Electric Building, Los Angeles.

**Position Wanted** as foreman on orange ranch. 30 years experience, understands soils and trees, formerly seven years with San Dimas Nurseries, W. T. Preston, Glendora, Cal.

### LIVE STOCK

**D. E. Kellher**—Importer and Breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of yearling Hampshire rams sired by Walnut Hall and Butterfield Rams, purchased at Salt Lake, August, 1916, also a few yearling ewes of same breeding. Inspection and correspondence invited.

**Sheep for Sale**—About 1000 head of Black Face and Merino Ewes. A good buy. Address John G. Mee, St. Helena, California.

**For Sale**—300 Angora goats not over three years old. Frank Motte, Box 107, Arlington, California.

**Shetland Ponies**—Dispersal sale. Write for list. N. C. Sorensen, Onalaska, Washington.

### RABBITS

**Go into Business for Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**A Fortune in Rabbits**—Have raised the price we will pay to \$8.00 per pair. Want you to raise them for us. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

**For Sale**—Rabbits, New Zealand and Flemish Giant, young stock. Paul Krueger, Watsonville, California.

**Rabbits, Remedies and Supplies**. Send for price list. Caldwell Rabbit Farm, Los Angeles.

### CATTLE

**SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies**. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Gullford, Owners.

**Pedigreed Bull Calves**, Registered \$50.00, unregistered \$25.00. Service bulls \$75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

**For Sale**—On account of dissolution of partnership will sell thirteen registered Guernsey cows. Choice individuals just in their prime. P. J. Weisel, Santa Fe Springs, California.

**Registered Holstein Bulls** from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, Cal.

**Registered Holstein Bull**—Straight, strong constitution, well marked, good pedigree. Write to Sunnybrook Ranch, Willits, California.

**Registered Shorthorns**, cows with calves at foot, yearling heifers and bulls for sale. Prices on application. Fair Oaks Ranch, Willits, Cal.

**Venadera Jerseys**, the herd with official yearly records. Calves of both sexes for sale. Guy H. Miller, Route 1, Modesto, Cal.

**Ayrshires** (registered)—A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

**Elkhorn Farm Ayrshires**—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

**Sunshine Farm Jerseys**—Bulls from officially tested dams for sale. E. E. Greenough, Merced.

**Five Fine Jerseys** for sale, three cows, two heifers, fresh and coming fresh, priced right. R. T. Waters, Box 66, Route 6, Bakersfield.

**For Sale**—One registered Guernsey bull four years old. Abram Marron, Jr., Box 10, Oceanside.

**Registered Holstein Bulls** of various ages for sale. Milbrae Dairy, Milbrae, Cal.

**REGISTERED JERSEYS FOR SALE**. J. R. CARHART, FULLERTON, CAL.

### FARM LANDS FOR SALE

#### Attention Land Buyers!

Here's an excellent proposition: 40 acre farms selling for \$15 to \$25 per acre, long time payments, 6 per cent interest, in the best agricultural part of Snohomish County, where you have all the modern conveniences, paved roads, railways, schools, churches, mills and factories. This district has proven its worth by the many successful farmers now located there. We also have some beautiful water front 10 acre tracts. OPPORTUNITY knocks at every man's door ONCE, but believe me, it does not continue to knock forever nor does it pound the door down. For further information address the owners, BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

**For Sale or Exchange**—60 acres rich, alluvial silt soil. Level. Irrigated, ready for crop. Real alfalfa land. Domestic water on place. Plenty of irrigation water. 1¼ miles from town, churches, grammar and accredited high school. Half cash, half trade, anywhere. Make your proposition now. Chas. McNeely, Alpaugh, California.

**Retail Dairy** with modern equipment. 30 select cows, fine 20 acre ranch, beautiful 11 room house, barns, silos, pumping plant and many other things to go with the ranch. ½ mile from high and grammar school. Los Angeles suburb. Address V. Care Cultivator.

**For Sale**—Big snap, acre, piped, fenced, plowed, 5 room plastered house, bath, gas, 535 W. 92nd. Worth \$3500; only \$2250; \$1000 mortgage. \$250 cash, balance rent. O'Donnell, 937 E. First St., Long Beach.

**For Sale**—Fine Paying Lemon and Orange grove. Upland district, none better; 10 acres, ample water stock; good improvements. C. W. Knapp, El Centro, California.

### POULTRY

**Our Annual Cockerel**, pullet and hen sale. 45 Eureka, Pasadena. 200-250 egg strain, 25 per cent 50 per cent off. 50c up. Leghorn, Wyandottes, Reds, Rocks, Anconas, Minorcas, Orpingtons, ducks, turkeys. Our early maturing winter layers develop rapidly into money makers. Hens clearing \$5.00 yearly. Chicks, thrice weekly 15c, 17c, 20c worth double. James Beeson, Pasadena.

**\$13.00 per 100 Barred Rox**, Reds, B. Minorcas, White Leghorns \$9.00. Terms \$2.00 with order, balance C. O. D. Ship Monday and Wednesday. A. G. Rowe, Inglewood, California.

**Black Orpingtons Lay**, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

**Wanted 500 or more White Leghorn pullets**, February or March hatch preferred. Samuel Eyer, Tulare, California.

**Buff Orpingtons, Buff Ducks, Bourbon Red turkeys**. The Ferris Ranch, S. Reservoir, Pomona, California.

**Eastman's Bred-to-Lay Barred Plymouth Rocks**. Hatching eggs. Fairmead Poultry Farm, Fairmead, California.

### AGRICULTURAL IMPLEMENTS

**IMPLEMENTS AND RANCH SUPPLIES**. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.

ARNOTT & COMPANY, INC., The Yellow Front. Established 1892. 112-118 S. Los Angeles St., Los Angeles

### PIGEONS

**Pigeons**—White Kings, Giant Runts, mated and young stock. F. Sanderson, 1170 Bird Ave., San Jose, Cal.

### HOGS

#### BERKSHIRES GUERNSEYS GRAPE WILD FARMS

A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application. A. B. HUMPHREY, Escalon, San Joaquin County, California.

**Poland-China Hogs**—On account of the draft must sell 4 tried brood sows bred to an extra good son of I. B. A. Wonder. 3 at \$75 each and one \$150. Also two yearling sows big, smooth, long and bred \$65 each. Also 4 September Big Bob gilts out of an imported sow will breed to Meddling Wonder \$55 each. One February boar \$50, two at \$35 and two at \$25. 4 February gilts at \$30 each. All recorded, crated and transferred f. o. b. Allen M. Lester, Care N. M. Lester, Gridley, California.

**Poland-Chinas**—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

**"Billiken" Chester Whites**—The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

**Superba, World's Grand Champion Poland-China** boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

**We Pay Cash for Hogs of All Sizes**, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170, 3030 E. Vernon Ave., South 2712-J, Los Angeles.

**Rancho Rubio Durocs**—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for \$25.00. Elmer Lamb, Ceres, California.

**Mule Foot Hogs**, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California. "The Blue Gums."

**Duroc-Jerseys**—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Callistoga, Cal.

**Large Type Poland Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

**Duroc-Jerseys**—We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, California.

**HEWITT'S BIG TYPE POLAND-CHINA** gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, Cal.

**Berkshires**—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. F. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

### BIG TYPE POLANDS

W. H. BROWNING, WOODLAND, CAL.

### MISCELLANEOUS

**Good Auto For Sale**, cheap. Late model Baby Grand Chevrolet, 5 passenger touring car, fully equipped. Electric starting and lights, demountable rims, extra tire. Looks and runs like new. This model now selling for \$1155. Sacrifice for \$550 to quick buyer. Terms. Call or write 55 E. Laurel Ave., Sierra Madre, California.

**For Sale: Fruit Cars**—100 used fruit cars in good condition, size 3-ft by 5-ft. outside measurement, to fit track 25¼ inches; also 1500 feet ¼ by 1 track iron. Price cars \$4.50, iron 6c per lineal foot, f. o. b. Santa Ana. C. C. Collins Co., Santa Ana.

**For Sale** to citrus fruit growers: 10,000 gallon smudge oil; 1000 Dunn 7-gallon heaters; one 500-gallon tank wagon; two 6000-gallon storage tanks; 10 Canco torches; 10 5-gallon filling cans. L. G. Baldwin, Upland, California.

**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

### FERTILIZERS

**Slacked lime** corrects sour, heavy soils, prevents gum disease and by correcting your soil wrongs, you get better results from your fertilizers. Alfalfa, beans and peas are lime plants and need lime. Slacked lime acts quickly. Price low for immediate shipment. Gypsum supplied. H. B. Matthews, 495 Douglas St., Pasadena.

### GOATS

**Toggenburg Milch Goats**—Rae P. Williams, Federal Realty Building, Oakland, California.



## SPINACH IN CALIFORNIA

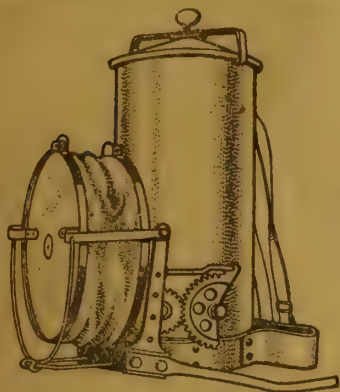
Continued from Page 745

and usually run from two to ten tons per acre, except in cases of total failures or remarkable success.

The variety used is of utmost importance. It has been estimated that the loss from the use of a variety introduced in California in 1917 from Japan was 60 per cent. In some in-

stances it was not harvested at all. Bloomsdale Savory has also proved to be much less desirable for canning than other varieties, although it has been extensively used from necessity. Prickly Winter has been the favorite variety, but Long Standing has been used for late plantings and is well liked. De Gaudry and Italian spinach are two other varieties which are being used for the first time this year.

## American Beauty Dust Sprayers



### Kill the Spider!

Corn Ear-Worm,  
Mildew, Aphis, Etc.

Send for our book

At your dealers or send to us

Standard size .....\$18.00

Junior size .....\$16.00

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The Liquid Flame

Gopher and Squirrel Exterminator

The California Sprayer Co.

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Los Angeles.

Reedley, California



## Norwalk Tires

As you ride in a Norwalk-equipped car, planing along the boulevard or bounding over rough county roads you can feel the very wizardry of these casings. Boulevards seem more velvety; the ill-smoothed contour of the rugged highway seems less noticeable. Norwalks form an effective barrier against road vibration and assist in producing luxurious riding comfort. Ask for Price List.

Factory Distributors:

Lichtenberger-  
Ferguson Co.

Los Angeles, San Francisco, Fresno

## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

### Note in Oregon

How long before a note is outlawed in Oregon? Will a letter showing that the maker of the note asks for extension of time and promising to pay extend the life of the note? — Subscriber, Hemet.

In Oregon actions upon contract must begin within six years from the date of maturity of the contract. The letter, as stated in the question, would be sufficient to renew the obligation.

### Collecting Rent

A tenant moved out of my house and failed to pay several months rent. He is married and works for wages. How much of his wages, if any, can I obtain through legal action? — Subscriber, Gardena.

House rent is considered a necessary of life. One-half the earnings of the debtor for his personal services rendered at any time within 30 days next preceding the levy of execution or attachment are subject to the writ and for earnings prior to said 30 days the whole thereof are subject to the writ.

### Road Right of Way

There is an old road running across my land which has never been laid out or surveyed and there are settlers who travel across the road. Is it lawful for me to have barbed wire gates placed on the road across my land? — Subscriber, Aguanga.

The settlers may have acquired some right of way over this road. In the absence of such an established right you would be entitled to close the road. With the present information, however, it is recommended that you take the matter up with the board of supervisors of your county. Under subdivision nine of section 2643 of the political code they are vested with power to provide for the establishment of gates on highways and prescribe rules for opening and closing the same with penalties for violating such rules, provided that the expense of erection and maintenance of such gates be borne by the parties for whose immediate benefit they are ordered.

### Tree Nuisance

Some of my neighbors permit a tree known as a "cigarette tree" to grow on their land. This tree has very fine seed which the wind scatters over my land with the result that considerable labor is caused me to keep my land in condition. Is there any way in which I can compel my neighbors to keep them cut on their land? — Subscriber, Aguanga.

The owner of land has no right to so use his land as to render that about him in any degree useless and has no right to inflict upon his neighbor any injury which can reasonably be avoided. If, therefore, he makes a use of his property which is unreasonable, unusual, and unnatural, although in itself lawful, he will be held liable for the injury caused thereby to adjoining property, provided the injury is real and not fancied. It might be possible for you therefore, to enjoin your neighbors from permitting this seed to fall upon your land, from which it would result they would have to cut down the trees complained of. You might hold them in damages for the extra labor caused you.

## THRIFT STAMPS A LA WALT MASON

"In times of war they ask us for the necessary cash to land upon the war-like Hun and deal the fatal smash.

"And it is right. To win the fight we've got to have the dough, and those who stay will have to pay for those who have to go.

"Buy SAVINGS STAMPS and put the clamps upon the German horde.

We'll surely win if you kick in—buy all you can afford.

"The boys who fight have every right to look to us to pay. They bear the brunt, so do your stunt, Buy Savings Stamps Today."—L. C. Davis.

We should honor the hero of everyday life, the commonplace man who fights his battle for bread and sustains a home on his broad shoulders.

## You Pay Too Much when You Pay Too Little

To buy anything today at the price you paid for it even a half year ago is practically impossible. It can't be done—you know it.

The best way to economize in overall buying is to buy overalls that wear well and last longer. Buy the ones you have always depended on for comfort, service and value!

In other words, it is *always* good economy to buy Boss of the Road Overalls—a Neustadter product. Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today.

Buy them from your local dealer

NEUSTADTER BROS.

San Francisco

Portland



**M**OST of your time is mortgaged to work, meals and sleep. Once a year at least you owe yourself a rest and vacation that will fit you for the next season. What could be more delightful than to spend a week or two at Wheelers—high above the fogs,—on the banks of a beautiful stream in the Ventura Mountains?

Everything here is conducive to health — Hot Tub Baths, Big out-of-door swimming pool, dancing, horse back riding, fishing, and when it comes to meals — Wheelers Hot Springs sets before you as appetizing meals as can be found anywhere in the mountains — they are great. Come up and bring the kiddies. Daily auto stage from Los Angeles to Springs. Write for new folder.

"Open Year Round"

Wheelers  
Hot Springs

Ventura County, Cal.

Webb W. Wilcox, Mgr.



One of Our Many Tempting Trout Holes





## Belladonna Raising Profitable

When it is taken into consideration that, when planted in rows three and one-half feet apart and spaced the same distance in the rows there are 3555 plants to an acre of Atropa Belladonna and that the leaves of this plant have not marketed for less than \$1.20 per pound (going as high as \$2.25 per pound) in the past three years it is not hard to conceive how a single acre planted at Pasadena yielded \$2400 in a single year on four cuttings of the leaves. Any intelligent boy or girl can operate a small planting of Belladonna in their spare hours and proper attention in the way of thorough cultivation after the plants are established cannot fail to bring good results. The Haas Seed Company, 1800 Lincoln Avenue, Pasadena, California, have a limited amount of high grade selected seed for sale. Any persons interested in securing guaranteed seed should write them for particulars.—Adv.

**Air is Cheap**  
Use Plenty of It



Air pressure not only affects the duration of your tires, it also has a very direct bearing on how many miles per gallon your gasoline will give you. Measure your air pressure with a

**Schrader UNIVERSAL**  
Tire Pressure Gauge

and save not only your tires but your gas. When your tires are under-inflated it takes more gasoline to drag them along the road—sometimes as much as 25% more.

**\$1.25**

A. SCHRADER'S SON, Inc.  
783-803 Atlantic Ave., Brooklyn, N. Y.

## Don't Pay for Ice



Get a Stephenson patent COOLER and have your eatables fresh at all times.

NO ICE REQUIRED  
TEMPERATURE LOW.

Made in two regular sizes. (Special sizes made to order.)

Write today for prices and particulars to  
L. ANDERSON CO., MFRS., Martinez, Cal.

## Ants Destroy Food

Thrifty Housewives drive them away and kill them with

**Talbot's Ant Powder**

It's Safe, Sure, Clean. Killing by Contact

If your dealer cannot supply you, write

Talbot Mfg. Co. Los Angeles

Plant Your Potato Land When Crop is off to

## Rhubarb

If planted then you can expect BIG PROFITS by fall or early winter.

OTHERS MAKING \$1,000 PER ACRE ANNUALLY—SO CAN YOU. Don't put it off any longer. June positively the best month to plant. Write

J. B. WAGNER, "Rhubarb Specialist"  
Pasadena California

**MACHINERY**  
OF EVERY DESCRIPTION  
**BOUGHT and SOLD**  
**BUTTRISS & McLELLAN**  
205-7 N. Los Angeles St. A-5473 Bdy. 8098

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

# Household Department

## WITH THE SAME PRIDE

One star for all she had,  
And in her heart  
One wound—yet she's glad  
For all its smart

As they are glad to bear  
The pangs of birth  
That a new soul and fair  
May come to earth,

Seeing, she too, was one  
Who from Death's strife  
Granted her first-born son  
Proudly to Life.

Now with that very faith,  
Life justified,  
She grants a son to Death  
With the same pride.

—Theodosia Garrison, in Everybody's Magazine.

## THUMBS UP

**I**T WAS Dr. Harmon who first called him Thumbs Up. Everyone was amazed to learn that it was the great surgeon who had coined the name. He was so austere and strictly "professional" in his manner that no one dreamed he was human enough to invent a nickname for a small patient. In secret the nurses had long referred to Dr. Harmon as the Great Bear, and until Thumbs Up came to the ward no one at the hospital ever saw any but the Great Bear side of the surgeon.

If people had given the matter thought, they would have known that beneath the impressive dignity there was deep sympathy for suffering childhood. His friend, Dr. Phillips, could tell of a day when he and the surgeon stood before a certain Sorolla canvas. A padre has gathered along the beach for a morning bath his young charges from a children's hospital. It is a painting of the infinite tragedy of handicapped childhood. Sorolla has said he will never paint another picture of the kind. Suddenly, as the two men stood gazing, one spoke.

"Man alive, Phillips, I've got to get home. This holiday business will have to wait until there aren't any suffering children." And the first steamer brought Dr. Harmon back to his profession.

Two mornings a week the clinic at St. Luke's was conducted by this great surgeon, who gave his time and mastery of surgery to the alleviation of pain.

Thumbs Up was just one of hundreds of cases. The morning he lay upon the operating table there were six other children awaiting their turn, and apparently there was nothing to distinguish him from any of the others. But individuality asserted itself as little Jack lay waiting.

The young anaesthetist smiled down at him and said, "Now, old man, I'm going to put you to sleep. What do you say to that?"

Instantly two little hands changed position. "I guess I says thumbs up. I allus do when I'm skeered to death."

Dr. Harmon turned from giving some directions to a nurse and looked at little Jack. He lay with his eyes tightly closed, every muscle in his little body taut and his hands at his sides, with both thumbs up.

"Hurry up, please. I've said it seven times a'ready. Most allus it helps a lot."

Suddenly two strong, large hands covered Jack's. Dr. Harmon grasped the little fingers in his own. "Now," he said, "while you go to sleep, I'll keep saying thumbs up for you, and when you wake up everything will be all right."

No one ever called Dr. Harmon the Great Bear again.

Some time afterwards a little figure was laid upon a little white bed. When Jack entered the room, it was known as Ward C. Months later, when he left it, there closed behind him a door bearing a brass tablet upon which were the words:

Thumbs Up Ward  
Named in Honor of a Brave Little Patient, John Henry Grayson.

But we are anticipating the story.

The days were tediously long for John Henry after his operation. A very heavy something swung from one ankle and his back ached "from using it so much," as he said to his nurse. Everyone who took care of him wore

a blue dress and a white apron, and all the young doctors looked alike in their white suits, and so there was a pitiful absence of variety in what he saw. All the other little boys were ill, too, and they all occupied the same kind of bed. Life was deadly dull. But the young physician who had "put him to sleep" visited him every day, and his coming always cheered the boy. Jack loved the doctor, and the doctor loved Jack.

One day when Dr. Billy was sitting on the side of Jack's diminutive bed, the little patient in the next bed began to cry.

"Here, what's the matter to starboard? Helm steady, old man." Dr. Billy was inclined to be nautical. "Thought I told you last night that as long as you're on the White Bed line you've got to show your nerve. Tell the captain what's the matter. We're standing by to help."

A great deal was the matter. Benny was frightened. There was a burning thirst and a pain all the way from the first mate's head to his feet, and in particular there was pain where a heavy "anchor" swung from the larboard ankle.

Crushed ice wrought a miracle in Benny's burning throat. Then Dr. Billy suggested to Jack that he, too, help the first mate. "Tell him about thumbs up, old man. You know how it helped us that morning."

So Jack revealed to the mate of his sister ship just how it is possible to hold fast to one's courage. "Just keep a-sayin' thumbs up, and pretty soon you'll be so busy you'll forget to be skeered. And you must do it, too. See, this is how."

That is the way it began. Within a week 30 little passengers of the White Bed line were playing the game. The nurses and internes played it with them. Everyone in Ward C knew the way to keep brave. Dr. Harmon heard of the success of his little patient in buying up others like him in the hour of distress. He had never forgotten the morning when Jack lay before him with his little thumbs up. He was deeply interested in the child and in the psychological element involved in the expression.

One drowsy morning four months after Jack entered Ward C there was suddenly a crackling noise outside the door. Miss Herbert, on duty, hurried to see what had caused it. She found the corridor on fire.

Quickly she turned to Jack. "Sweetheart," she said gently. The child was asleep, and she did not dare to startle him. "Sweetheart, wake up. You've got to help the lady captain. There's a fire outside, and we've all got to leave. While I run to the telephone, you think of a way to help."

Outside, the crackling noise was growing louder and curling smoke slipped in round the door. Jack's bed was the first one in the ward. He had come in by that door. He knew they would all have to leave by it. He could see Miss Herbert flying from bed to bed, wrapping blankets round each little patient.

"No, you don't!" he said, when she reached him. "No, sir, I'm going to stay till the last feller's out! I says thumbs up."

And thumbs up it was. As strong men rushed in and bore little patients, Bradford frames and all, out into the smoke, Jack lay by the exit calling shrilly, "Thumbs up, fellers, thumbs up! Don't be skeered! Say thumbs up."

He felt very drowsy when he awoke—just the way he did after Dr. Billy had put him to sleep. Some one was holding his hand, and he could hear a man's voice saying, "Bravest thing I ever knew. Dear little man!"

He opened his eyes. It was not Dr. Billy who sat beside him, but a very famous surgeon, whose eyes were misty with tears. His beard was singed and there was a gash across his cheek.

"Well, Capt. Jack, how do you feel? You were pretty brave this morning. You're a real live hero."

Jack took a long breath, and found it was a painful operation. "Why, I didn't do nothin'," he said. "I couldn't run if I'd wanted to with that anchor on my leg. I'm glad if Miss Herbert thinks I helped, but I didn't do noth-

## The Cultivator Patterns



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PATTERN DEPARTMENT

California Cultivator  
Los Angeles



in', really. I just called thumbs up when the fellers went."

Dr. Harmon closed a white little hand in both of his. "You did a good deal, little man. When I picked you up and started into all that smoke, I was 'skeered to death.' But you said thumbs up, and I said thumbs up, and here we are."—Youth's Companion.

#### HOUSEHOLD QUERIES

**Canning Pimientos, Asparagus and Peas**

Please give a recipe for canning pimiento peppers; also asparagus and peas.—J. C. H., Modesto.

Complete directions will be found on Page 721 of last week's Cultivator. These canning instructions are so concise and complete that they will be invaluable for ready reference by every Cultivator housekeeper. A suggestion in regard to canning pimientos—put them in small cans. They do not keep long after opening and as they are used for seasoning and are rich one needs to use but little at a time.

#### Drying Figs

How are figs dried?—Reader, Santa Ana.

Allow figs to remain on the tree until they drop naturally; with the exception of the large ones they are then dried sufficiently to keep and are much better eating than those that are dried hard in the sun. Place on trays and stack in sunny, airy place so that the dry air can penetrate the layers, covering top layer of course from direct sun rays. After two days sort out the hard, leathery feeling figs and bird pecked and imperfect fruits, leaving soft figs in stacks until dried. Then place all perfect dried fruit together in deep boxes or bins or piles in protection of a shed where they may remain for two weeks to "sweat," or equalize the moisture. (Figs may be piled in these "sweat" boxes three to six feet deep). They should be turned over with a shovel daily if possible. After this the figs should be thoroughly washed in brine having strength of four ounces of salt to one gallon of water. Let figs remain in this brine ten to 15 minutes. Place again on trays two or three inches deep and expose to direct sun for a half day to dry off. Trays are again stacked for two days, after which time figs are ready for packing away.

#### Yeast Bread

Can I use dry yeast with wheatless bread recipes?—Subscriber, Santa Ana.

Subscriber will find two recipes for wheatless bread with dry yeast on Page 713 of the Cultivator of June 8.

#### Bread too Crumbly

What makes my cereal bread so crumbly? My recipe is: One cup of ground rolled oats, one of corn meal, one of flour, one teaspoon of salt, one heaping tablespoon of shortening, two teaspoons of baking powder, one egg, one and one-half cups of milk.—Subscriber, Santa Ana.

In using this recipe, it would help the crumbliness somewhat to use more milk, say two cups. One cup of corn meal will care for one cup of liquid. We would suggest, however, that the best plan would be to use at least half of barley or rye flour with corn meal or oat meal. They will do away with the crumbliness. Where one wishes to use wheat flour, this same proportion can be maintained. As a general rule we believe it has been found more satisfactory to make corn bread straight, occasionally, using all corn meal, remembering to use equal quantity of liquid. Then use your barley flour or rye flour in combination with rice flour or milo flour or oat meal for breads that are not in the least crumbly. There is an almost infinite variety of combinations which can be made with these and other cereals we are just becoming acquainted with, but try them alone or in combinations of two to get the individual flavors, rather than try to find one standard mixture. There is opportunity to suit all tastes.

Here is a recipe for oat meal-barley quick bread or muffins: Two cups rolled oats, one cup barley flour (or wheat flour) two tablespoons sugar,

four teaspoons (level) baking powder, one teaspoon salt, one egg, one and a half cups milk, two tablespoons (level) shortening. Pour milk over oats and let soak half hour. Add egg and melted (cooled) shortening. Add to dry ingredients which have been sifted together.



#### FIVE WAR-TIME RECIPES

Written for California Cultivator  
By E. S. F., Madera County

I am sending several recipes—using flour substitutes, which have been evolved and tested during the recent and present "period of reconstruction" of culinary ideas, consequent upon the need for conserving of wheat flour. A large cup is used in all recipes.

#### Roll Jelly Cake

Three eggs, three tablespoons cream, one cup milk, one cup each barley and white flour, two rounding teaspoons baking powder, saltspoon salt, flavoring. Beat yolks of eggs, add cream, sugar, milk and flour, into the last of which put baking powder and salt, whites of eggs beaten stiff, folded in last. Bake in sheet one-half inch thick in quick oven, spread with jelly or jam and roll while hot.

#### Easter Braids

Two cups corn flour, two cups white flour, two well rounded teaspoons baking powder, one-half level teaspoon salt, eight tablespoons sugar. Mix these dry ingredients well together. In separate dish beat well four eggs, add several tablespoons water (amount varies). Into dry ingredients rub four tablespoons each butter and lard (or drippings). Add egg and enough more water, if needed, to make a stiff dough like pie dough. Roll out one-quarter inch thick, cut in strips ten inches long and one-half inch wide. Braid three together, making both ends meet and pinching together. Place these braided circles on large greased pans and bake in quick oven. A pleasing novelty for special occasions. We make them an Easter institution for the children.

#### Adaptable Cake

Three eggs, one-third cup shortening—cream, lard, butter, drippings, oil (you pays your money and you takes your choice); one cup sugar, two cups milk, one cup rice flour, two cups white flour, into the last of which put two and one-half rounding teaspoons baking powder and a pinch salt; add stiffly beaten whites of two eggs last. Cover a large pan about one-half inch with part of batter and bake in quick oven; cut in two when cold, and place together with custard filling. Into one-half of remainder of batter stir tablespoon cocoa or same of molasses. Drop in a loaf pan alternate spoonfuls of white and dark batters and bake slowly covered at first with a butter or bread paper. Add white of one egg, beaten, to a plain cornstarch custard, flavored.

#### Doughnuts

One egg, one cup sugar, one teaspoon melted grease, one-half teaspoon salt, nutmeg to taste, two and one-half cups butter milk, two and one-half cups barley flour, two and one-half cups white flour, two level teaspoons soda. Mix to as soft a dough as can be handled, knead slightly to make smooth, roll one-quarter to one-third inch thick, cut and fry as usual in piping hot grease. Drain on absorbent paper. When cool roll in fine sugar.

#### Hot Cakes for Sunday A. M.

Three cups white corn flour, one cup white flour, or four cups corn flour alone, one and one-half level teaspoons soda or less if milk not very acid, one level teaspoon salt, one or two eggs beaten and added with milk, enough butter milk or sour milk and little cream, to make "loose" batter as usual for hot cakes.

Yes, they are holding the line, but the folks back home must bring up the reserves.

## "—use foods that require less sugar"

THIS is one of the most important recommendations of the Food Administrator: "In cooking and baking use foods that require less sugar."

In other words—use Ghirardelli's. Use it freely and wisely—in place of other less nutritious and more expensive foods. Not only will you save money but you will help in food conservation.

Cooking and baking require less sugar when you use Ghirardelli's. Because—it contains in itself the sweetening flavor you need. More than this—it adds a new touch of richness to your icings, your puddings and other desserts.

In  $\frac{1}{2}$  lb., 1 lb. and 3 lb. cans; a  
tablespoonful—one cent's worth—  
makes a cup.

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## Los Angeles Market

Los Angeles, June 19, 1918.

## BUTTER

Produce Exc. Quotations.  
Prices to trade 1½ to 2½¢ higher.  
California extra creamery.....43  
Dairy Exchange price past week on ex-  
tras.  
June 12 13 14 15 17 18  
'18 ... 42 42 42 42 42 43  
Rcts. wk. ending June 18, 173,750 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. ....24  
Eastern Daisies .....26  
Domestic Swiss .....38  
Oregon triplets .....26@26½

## EGGS

Exchange quotations. Prices to re-  
tailers 2 to 3 cents higher.  
Case Count .....33½  
Fresh extras .....39  
Pullets .....35½  
Dairy Exchange prices past week on  
fresh extras.  
June 12 13 14 15 17 18  
'18 ... 37½ 38 37½ 39 39  
Rcts. wk. ending June 18, 1543 cases.

## POULTRY

We quote to producers:  
Broilers .....23@30  
Fryers .....30  
Hens, small, 19; heavy .....25  
Ducks, lb. ....18@24  
Roosters .....30  
Roosters, old .....15  
Turkeys .....25@27  
Geese, young, lb. ....22  
Rabbits, live, 17@18; dr. ....40

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, June 19,  
by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs.—11.50@12.00  
Hefers, good .....8.50@9.00  
Cows, good .....8.00@8.50  
Canners .....5.00@5.50

Hogs—  
Av. 125 lb. ....16.00  
Av. 150 lbs. ....16.50  
Av. 175-225 lbs. ....17.00

Rough, docked 20 lbs.; piggy sows, 40  
lbs., stage, 40 per cent.  
Prime wethers .....11.00@11.50  
Ewes .....10.50@11.50  
Lambs .....14.50@15.00  
Yearlings .....11.00@11.50

## POTATOES

Wholesale selling price:  
Northern .....1.80  
Idaho Russets .....1.80  
New, lug .....65@70  
Sweet, lug .....2.25

## ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. ....1.15  
Crystal Wax, 50 lb. cr. ....2.50  
Garlic .....1.12

## VEGETABLES

Wholesale prices:  
Artichokes, doz. ....60@85  
Jerusalem, lb. ....7½  
Asparagus, lb. ....11@12  
Beans—Wax, lb. ....5@6  
Ky. Wonder .....7@7½  
Limas, lb. ....12@13  
Beets, sk. ....1.50  
Cabbage, lb., 1½; sk. ....1.25  
Carrots, doz. ....30  
Corn, sugar, doz. ....60  
Cucumbers, bx. ....60@65  
Egg Plant .....8@9  
Horseradish, lb. ....15  
Lettuce, doz. ....45@50  
Leeks .....35  
Mint, doz. ....40  
Onions, green, doz. ....25@30  
Peas, Tel., lb. ....10  
Peppers, Chili, lb., 14@15; Bell .....30  
Parsnips, doz. ....40

Ranch Foreman  
Wanted

For deciduous orchard and general farm  
in Sierra Nevada foothills; married man  
between 35 and 50 with wife willing to  
act as housekeeper for ranch boarding-  
house with four to six men to cook for;  
man must be skilled in all branches of  
farm work and in the handling of live-  
stock; experience in orchard and nursery  
work desirable but not essential if skilled  
in the other lines; must be sober, willing  
to take the lead in all work, and of a dis-  
position enabling him to handle other  
men without friction. Not a job for a  
lazy man or a crank. A good man will  
find a permanent position, every modern  
convenience in his work, best of living  
accommodations, and splendid location  
from standpoint of health. None but  
loyal Americans need apply. Give refer-  
ences and complete details of farm ex-  
perience, also state salary expected. Ad-  
dress Ranch Foreman 33, care California  
Cultivator.

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Parsley, doz. ....20  
Radish, doz. ....30  
Rhubarb, C. W. bx, 1.15; Strawberry 1.30  
Romaine, doz. ....40  
Spinach, doz. ....80  
Squash—Summer, lug .....80@85  
Cream, lug. ....65  
Tomatoes, cr. ....1.65  
Turnips, doz. ....50  
Watercress, doz. ....85@40

## FRUITS

Wholesale prices:  
Apricots, cr. ....2.10  
Bananas, lb. ....6½@7  
Cantaloupes—Ponies  
Standard .....3.00  
Cherries, Black, lb. ....12@13  
Currants, cr. ....2.25  
Figs, bx. ....1.50@1.75  
Gooseberries, lb. ....12  
Loquats, lb. ....9  
Peaches, cr. ....2.25  
Strawberries, tray. ....1.30

## CITRUS

Lemons, packed, 8.50; loose .....7.00  
Juice .....4.00  
Oranges—Valencias .....7.00  
Grapefruit .....8.50@8.75

## DRIED FRUITS

Date for making contracts on 1918 crop  
postponed again by government order to  
July 15.

## BEANS

These are prices made by wholesaler to  
retailer.  
Lady Washington .....13.50  
Limas .....14.00  
Pinks .....8.50  
Manchurian Reds .....9.00  
Baby Mex. ....9.50  
Garbanzos .....9.50@10.00  
Blackeyes .....13.50  
Tepary .....9.00@10.00  
Lentils .....25.00  
Mex. Red .....9.00

## HONEY

Jobbers' prices:  
White extracted .....20@22  
Light amber extracted .....15@18  
Amber extracted .....10@11  
White comb, per case .....7.00  
Lt. amber comb, per case .....5.00@6.00  
Beeswax .....36@40

## HAY

Quoted prices remain the same as  
last week but market conditions are  
much firmer and a possible advance may  
be made.

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
carlots:  
Tame Oat .....26.00@28.00  
Volunteer Oat .....14.00@16.00  
Wheat .....23.00@26.00  
Barley .....23.00@26.00  
Alfalfa .....18.00@21.00

Quotations furnished by California  
Alfalfa Growers' Association, Riverside,  
California.  
Number 1 alfalfa hay is \$25.50 carlots  
f. o. b. L. A.; common shipping points  
\$1.50 carload rate to destination. Prices  
from points where a higher or lower rate  
applies to destination will be correspond-  
ingly lower or higher.

## GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:  
No. 1 bright feed barley.....\$2.60 \$2.65  
Milo maize, local .....3.50  
Oat middlings .....36.00

## San Francisco Markets

San Francisco, June 18, 1918.

## BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound, as follows:  
Two-pound squares, parchment wrap-  
per, ¼¢; 1-pound squares, parchment  
wrapped, 1¢; 2-pound squares, in cartons,  
1½¢ to 2½¢; 1-pound squares, in cartons,  
2¢ to 3¢.

Dairy Exchange quotations, lb.:  
Extras .....47  
Firsts .....44½  
Prices Extras past week and year ago.  
June 11 12 13 14 15 17  
'18 ... 45 45½ 45½ 45½ 46 47  
'17 ... 37½ 36 35 35 35  
Rcts. wk. ending June 17, 563,800 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal. Flats .....23@24½  
Jack Cheese, full cream .....22@23  
Cal. Y. Am. ....24@25  
Ore. Y. Am. ....25

## EGGS

Dairy Exchange Quotations:  
Extras .....44  
Firsts .....40  
Selected Pullets .....40  
Firsts .....38  
Prices Extra past wk. and yr. ago:  
June 11 12 13 14 15 17  
'18 ... 41 41½ 42 42 43 44  
'17 ... 31 31 31 31 31  
Rcts. wk. ending June 17, 24,056 cases.

## POULTRY

We quote to producers, lb.:  
Large hens, 26@28; small, do. 24@25;  
broilers and fryers, ¾ to 1½ lbs., 32@35;

1½ to 2 lbs., 33@38; 2 to 3 lbs., 38@45; old  
roosters, 20@22; ducks, lb., 22@28.  
Squabs, doz. ....2.50@4.00  
Belgian Hares, live, lb. ....14@15

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾¢  
more.  
Steers, lb., 10@12½; thin, 8@9; cows  
and heifers, 7½@8½; thin, 4½@6; calves,  
7@10½.

Sheep—Per lb. gross weight: Unshorn  
wethers, 11@11½; ewes, 9½@10; lambs,  
yearlings, 11½@12; milk, 14@14½; shorn  
sheep, 1½@2.

Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 16; 140 to 300 lbs., 16½; 300 to  
400 lbs., 16.

## POTATOES

Wholesale selling prices at wharf, cwt.:  
River, new .....1.35@1.50  
Oregon .....1.35@1.50  
Garnets .....1.50@2.00

## ONIONS

Wholesale selling price on wharf, cwt.:  
Garlic, lb. ....3@4  
New Red, sk. ....85@1.00  
New Yellow, sk. ....1.00

## VEGETABLES

Wholesale selling price.  
Artichokes, doz. ....12½@30  
Asparagus, White, lb. 4@8; green, 3@5  
Beets, sk. ....75@1.00  
Beans, lb. String, 5@7; Wax .....4@6  
Beets, sk. ....1.50  
Carrots, sk. ....50@75  
Cauliflower, doz. ....40@60  
Celery, cr. ....1.50@2.00  
Cucumbers, bx. ....50@65  
Corn, green, doz. ....20@60  
Egg Plant, lb. ....8@10  
Lettuce, doz. ....25@30  
Onions, green, bx. ....65@75  
Parsnips, sk. ....85@1.00  
Okra, lb. ....12½@15  
Peas, lb. ....4@6½  
Peppers, Bell, lb., 10@25; Chili, 10@20  
Rhubarb, Straw, bx. ....1.25@1.75  
Squash, Summer, lug. ....75@1.00  
Italian, bx. ....50@60  
Spinach, cr. ....50@75  
Tomatoes, cr. ....1.15@1.50  
Turnips, sk. ....50@75

## FRESH FRUITS

Apples—Newton Pippins .....3.00@3.50  
Apricots, cr. ....1.25@1.50  
Bananas, lb. ....7@7½  
Berries—Ch.: Strawberries, choice, 9.00@  
12.00; blackberries, 9.00@10; Santa Clara,  
13.00; cr., 1.00@1.25; logan berries, 8.00@  
10.00; raspberries, 14.00@18.00; cr., 1.25@  
1.50; gooseberries, lb., 5@8; English, 10.  
Cantaloupes—Ponies .....2.25@2.50  
Standard .....2.50@2.75  
Flats, 1.00; Honey Dew .....2.50@3.00  
Cherries—Drawer, 1.25@1.75; loose, lb.,  
black, 4@7; fy., 10@12½; Royal Anne,  
8@10.  
Currants, dr. ....65@85  
Figs—Bx., Brunswick, 1.50@1.75; Mission,  
1.50@1.75; white, 75@1.00.  
Peaches, cr. ....1.25@1.50  
Plums, bx. ....1.00@1.25  
Pineapples, doz. ....5.00@6.00  
Watermelons, lb. ....3@4  
Lemons, bx., according to size: fy.,  
7.50@9.00; lemonettes, 5.50@6.50; grape-  
fruit, fy., 2.50@3.00; ch., 2.00@2.50. Or-  
anges, bx.: Valencias, 6.00@6.50.

## DRIED FRUITS

(See Los Angeles markets.)

## HONEY

Jobbers' prices:  
White extracted .....20@22  
Light amber extracted .....15@18  
Amber extracted .....12@14  
White Comb, cs. ....4.50  
Light amber comb, cs. ....3.50@4.00  
Beeswax .....36@40

## HAY

We quote today wholesale prices in  
carload lots as appear from dealers'  
transfers upon the hay market—for  
prices to consumers charges of cartage,  
commission and handling must be added  
according to conditions:

Fancy Wheat Hay  
(light 5 wire bale) .....27.00@28.00  
No. 1 Wheat or Wheat and  
Oat Hay .....23.00@25.00  
No. 2 Wheat or Wheat and  
Oat Hay .....20.00@22.00  
Choice Tame Oat Hay .....24.00@26.00  
Other Tame Oat Hay .....21.00@23.00  
Wild Oat Hay, new .....17.00@19.00  
Barley Hay, new .....17.00@19.00  
Alfalfa, new, first cutting .....14.00@18.00  
Stock Hay, new .....13.00@15.00  
No. 1 Barley Straw .....50@80

## GRAIN

As to grain and feed prices see note  
under Los Angeles grain prices.  
Wheat—Government prices: Common  
white hard, base price, \$3.50 per cenal,  
or \$2.10 per bushel of 60 pounds deliver-  
ed in terminal warehouses in bulk; soft  
white, base prices, two cents per bushel  
less, or \$2.08 per bushel; white club (in-  
cluding Sonora), \$2.00 per bushel. If  
wheat, after cleaning, weighs 60 pounds  
or more to bushel, base price stands; if  
58 to 60 pounds to bushel, three cents per  
bushel reduction; if 56 to 57 pounds six  
cents per bushel less; if less than 56  
pounds, grain becomes sample grain and  
sells on its merits up to within one cent  
per bushel of 56-pound wheat. Addi-  
tional charge made for sacks.

## SEEDS

Prices in round lots, lb.:  
Millet, re-cleaned .....5@5½  
Alfalfa, lb. ....20@21  
Flax .....7@7½  
Hemp .....5@5½  
Rape .....2½@3

## WEATHER CONDITIONS

San Francisco, Cal., June 15, 1918.  
Rainfall—Temp.  
Stations Wk. Season. Norma. Max. Min.  
Eureka .....02 24.34 45.68 64 48  
Red Bluff .....08 12.10 24.87 110 62  
Sacramento .....00 10.61 20.09 103 54  
San Francisco .....T 11.48 22.25 81 51  
San Jose .....00 9.36 16.78 92 46  
Fresno .....00 10.28 9.88 103 64  
San Luis Obispo .....T 18.06 20.51 104 50  
Los Angeles .....02 13.85 15.64 94 58  
San Diego .....T 7.98 10.01 76 58

## Citrus Fruit Market

Los Angeles, June 19, 1918.  
Spectacular market conditions still  
prevail. Eight dollar prices for fancy  
Valencias of regular sizes are not uncom-  
mon.

Grapefruit is strictly in the dumps. One  
explanation given why grapefruit is re-  
ceiving so little favor, is that the sugar  
conservation is turning people to sweeter  
fruits. If we could only induce the con-  
suming public to try salt it would soon  
prefer it to sugar.

Although a large number of lemons  
are on the way to Atlantic markets long  
prices are still being commanded.

Shipments of citrus fruits to date since  
November 1, 1917: Southern California:  
Oranges 11,124, lemons 3599, total 14,723.  
To same date last season oranges 29,729,  
lemons 5304, total 35,033. Central Cali-  
fornia this season: oranges 2527, lemons  
115, total 2642. Last season to same  
date: oranges 4417, lemons 164, total  
4581. Northern California: oranges 203,  
last year same date, 845.

## AT THE AUCTIONS

June 12  
New York: 17 cars. Val. 3.75-7.55.  
Sweets 5.15.  
Boston: 7 cars. Val. 3.60-6.80. Grape-  
fruit 85, lem. 7.60-8.70.  
Cleveland: 3 cars, 3 oranges, 2 lem.  
Val. 4.15-6.65, lem. 6.80-8.50, Sweets 5.00.  
St. Louis: 4 cars. Val. 4.60-6.85.

June 13  
New York: 16 oranges, 1 lem, 1 grape-  
fruit. Val. 4.90-8.25, lem. 10.70-11.15,  
Grapefruit halves 1.40-1.65.  
Boston: 9 cars. Val. 4.95-7.00, lem.  
9.25-9.35, Sweets 5.80-6.40, Grapefruit  
halves 1.25-1.40.

June 17  
New York: 24 oranges, 3 lem. Val.  
3.60-7.50, lemon, 6.55-8.60.  
Cleveland: 4 cars. Val. 4.35-6.00, lem.  
8.15-9.65.  
St. Louis: 3 cars. Val. 4.85-6.50, lem.  
3.60-9.75.

June 14  
New York: 11 oranges, 3 lem. Val.  
5.05-7.45, lem. 6.60-8.60, Grapefruit 2.60-  
2.75.  
Boston: 4 cars. Val. 5.60-6.30, lem.  
3.50-8.90.  
St. Louis: 2 oranges, 2 lem. Val. 5.25-  
6.20, lem. 7.50-8.90.  
Pittsburg: 2 oranges, 1 lem. Val. 4.10-  
6.15, lem. 7.00-8.05.  
Cincinnati: 1 orange, 1 lem. Val. 4.65,  
lem. 5.25-11.00, Grapefruit 2.10.  
Philadelphia: 3 cars. Val. 5.15-7.55.

June 18  
New York: 20 oranges, 2 lem. Val.  
3.25-7.70, lem. 7.50-8.55.  
Boston: 9 oranges, 3 lem. Val. 3.55-  
7.05, lem. 5.40-9.20, St. Mikes 6.65,  
Grapefruit 2.35-2.70.

Los Angeles, June 18, 1918

Bureau of Markets, United States de-  
partment of agriculture from its local  
office issues weekly statement from which  
following is taken:

Produce in moderate volume. Gen-  
eral carlot movement, with the excep-  
tion of new potatoes, not especially  
large for this time of the year. Peaches,  
cantaloupes, tomatoes and cabbages are  
moving liberally; strawberries, onions,  
old apples, old potatoes, peas and aspar-  
agus are declining in volume rapidly.  
The season is evidently one or two  
weeks earlier than last year, and ac-  
cordingly the various shipping sections  
are passing their greatest shipping ac-  
tivity at earlier dates. Total movement  
of fruits and vegetables in the week en-  
ding June 17 was 9948 cars compared  
with 7959 cars last week. The price  
trend in general was stronger through-  
out the week but declined during the  
past few days. New shipping sections  
are opening and total movement con-  
tinues to gain in volume. Florida and the  
Southern producing regions are ap-  
proaching the end of their shipping sea-  
son, while Virginia, North Carolina and  
Arkansas are becoming active. The to-  
tal movement of new potatoes was 4188  
cars compared with 2651 last week and  
with the exceedingly heavy movement  
of 2836 cars of the corresponding week  
last year. The movement of old pota-  
toes is becoming still lighter; there  
were only 617 cars, chiefly from the  
Great Lakes region and Maine. Old  
stock has nearly disappeared in some  
markets.

## Strawberries

The strawberry movement declined to  
271 cars compared with 585 last week  
and 1055 the week before. Michigan,  
New York, New Jersey and California  
are shipping in considerable volume, and  
southern and southwestern sections are  
nearly done. Prices advanced to higher  
levels, good berries being in light sup-  
ply. The seven Southern states are  
finishing their season with less than  
two-thirds as many as they shipped last  
year. The ripening season was unusu-  
ally early.

## Peaches

Total shipment of peaches this week  
was 748 cars compared with 321 last  
week. Demand was moderate at ship-  
ping points and in northern consuming  
markets.

## Cantaloupes

Shipments of cantaloupes again in-  
creased abruptly, to 1284 cars compared  
with 598 last week and 172 the week be-  
fore. Movement was mostly from Cali-  
fornia and prices for California stock de-  
clined heavily under steady supply, clos-  
ing the week \$1.25 lower at range of  
\$4.50 to \$6.25 for standard crate in lead-  
ing markets. The price range was lower  
than that prevailing for the correspond-  
ing week last year but was \$1.25 higher  
than for the corresponding week of 1916.  
Cantaloupes sold the last of the week at  
\$2.50 f. o. b. Imperial shipping points.  
California 45s standard crate ranged  
about as at present for the corresponding  
week of last year and sold about \$3.00  
above the comparable week of 1916.



## Raising Chicks Without Heat

Written for California Cultivator By Jean A. Koethen

**A** CORRESPONDENT writes: I have seen open-air brooders used several years ago with good success. I think it was the Philo system or brooder. Can you give me any information about it?"

Can I? Was I not one of those misguided persons who paid a perfectly good dollar for a copy of "The Philo System of Poultry Keeping?" And did I not break my back trying to take care of my chicks in those beautiful but impractical coops which require the caretaker to get down on her knees and stick her head under a six-foot wire frame, holding its weight on her shoulders, every time she wants to catch a chick? To be sure, one might prop the wire frame with a stick, but the chicks soon learn to find the least opening, and out they go. Then, when the system proved too much for flesh and blood, and the daily cleaning was omitted, did I not see my chicks die off, one by one, in the agonies of wryneck, caused by eating the moldy bran in the bottoms of the coops? The Philo system of poultry keeping has some admirable virtues. I have seen it worked successfully by several persons. Some two or three years ago I saw, not more than a mile from my own home, a man using several coops, 100 chicks in each coop. They were only a few days old, and seemed very comfortable, with the warm sun streaming through the open top, and every breath of wind excluded, but I wonder what he did when they were a month old. One hundred chicks at that age require at least two coops, and by the time they are three months old they would need five or six unless the coop was kept in immaculate condition.

The principle of the Philo System is all right. Given a warm, sunny coop sheltered from the wind 25 chicks or more can keep each other warm at night, and they soon learn to go inside to warm up if the day is chilly. The one objection to it is the immense amount of hard work it involves. For an occasional brood of 25 or 50 chicks it is quite practical. For a large flock where hundreds of chicks are to be raised the labor involved is out of the question.

It is quite possible, however, to raise chicks without heat and without the cumbersome coop which is characteristic of the Philo system. The little Philo brooder, which is merely a box 13 or 14 inches square, and from five to seven inches deep, filled with good soft litter and covered with a warm quilt, has come to stay, and is used successfully by many poultrymen. In the colder spring months it is hard to manage, for it ought to be

in a warm room, but in May or June or September it can be used in any sheltered place and keeps the chicks perfectly comfortable. The only requisite for its use is, that it contains not less than 25 chicks; for a smaller number cannot keep each other warm! If it is made a little larger than 14 inches square it will hover 50 chicks for a month. Sometimes it is made large enough for 100 chicks, but the smaller flocks do rather better, as a rule. They do not so quickly overcrowd the brooder.

My own scheme for using the fireless brooder has been to partition off with 12-inch boards the southeast corner of the feed house. A pane of glass in the south wall at the floor level lets in the sun nearly all day. If there were another pane in the east wall, the sun would shine in from early morning till sunset, but this is not necessary, for after the first week the box is carried out into a sheltered yard and the chicks have a chance to run till 4 o'clock. Then they are carried back and can play before the south window till bedtime. Carrying the box in and out is some trouble, but in the late spring it is not necessary for long. If the weather is fairly warm the chicks by the time they are three or four weeks old can be left outside in a small coop or a dry-goods box placed on its side. If the night is chilly this is curtailed with burlap, but it is surprising how very warm 25 chicks a month old will keep each other in an open coop. It is surprising, too, how little protection chicks need that have always been accustomed to the open air. The hen-brooded chick after the first week in comfortable weather asks for very little hovering, often for none at all. If it has the sun during the day and its mother's wings at night it is perfectly comfortable and makes a more vigorous growth than the chick that is brooded by artificial heat. After all chicks are very like the rest of us; the more we are accustomed to heat or clothing, the more we require.

But the person who undertakes to raise 50 chicks in a fireless brooder has her work cut out for her the first week. I use the feminine pronoun because the fireless brooder, for all it was invented by a man seems especially adapted to female use. How

many men have the patience to mother a brood of 50 chicks through the first trying week from the minute when as little helpless, chilly, things, astonished at this big cold world, they are put under their blanket for the first nap? How many men would take the time to coax them out to eat, then gently push them back to warm up and rest, fastening them in till it is time to let them out again, doing this four or five times a day for a week till they are fully "brooder-broke" and have learned where to go when they are cold and where to find their food and to eat and drink and scratch. To be sure there is always a good deal of care when chicks are brooded with heat. With the fireless brooder there must be constant watching the first week. The caretaker must imagine she is the hen-mother, and coax and fuss over the chicks till they have found themselves. Perhaps I exaggerate the mothering required, but I do hate to see little chicks die, and no fussing seems too expensive if only they are kept alive through that critical first week.

I have said so many times that warmth is the first essential in raising chicks that it seems stupid to repeat it, yet only a few days ago a friend, the wife of a college professor, called me up to ask why her chicks were dying. They were with a hen, surely she could keep them warm, for all there were 20 of them, and she was left right out in the wind all day, with a small coop set over them all at night. How could any hen keep 20 chicks warm under such conditions? Chicks must be protected from the wind. I would rather raise a brood with a fireless brooder in a warm, sheltered corner of the feed house, than leave them out in the wind with the best hen that ever lived. The thing is simply impossible. No hen can protect her brood without a windbreak. Warmth is the thing. How you secure it doesn't matter much. It may be with the fireless brooder; it may be around a jug of hot water; it may be about a big brooder stove. Don't think because you have a good hen, or the best make of brooder that therefore the chicks must be comfortable. They are comfortable when they are amply warm. They sleep when they are warm and only when they are warm. They cannot digest their food if they are chilly. Warmth is first and second and third. Keep them warm somehow, no matter how. But keep them warm.

ers was raffled and the proceeds placed in the treasury of the association.

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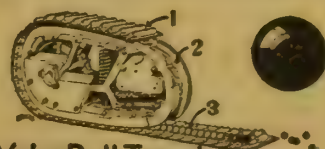
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## Save Eggs for Season of High Prices

By R. F. Palmer

It is becoming more and more necessary for both the producer and consumer to hold eggs over from the season of plenty to the season of scarcity, from the season of low prices to the season of high prices. One egg next winter will be worth as much as two and perhaps as much as three eggs at the present time. There is every indication that eggs will be even higher next winter than they were last. For that reason it will pay the producer and the consumer to find some method of preserving eggs at present prices. Next to cold storage, we have had best success by preserving in water glass, (sodium silicate.) We are also trying out two or three commercial preservatives, and the indications are that they will prove equally as satisfactory.

You should first prepare your preservative, even before you get the eggs. The water glass solution is made as follows: Use 12 times as much water as you do of the water glass. In other words, to each 12 gallons of water stir in one gallon of the water glass. If you have only a few eggs to preserve, use a smaller quantity, but in this proportion. The water should be boiled and then allowed to cool. When it is just lukewarm, you begin to stir in the water glass. You stir until it is thoroughly mixed. You are now ready for the eggs.

As a container, we use earthen jars, candy buckets, kegs or half barrels. If you use wood see that it is thoroughly cleaned and odorless. The eggs should be clean and fresh. One bad egg may spoil the lot. Place them in the container with the small end of the egg down. Then pour in enough of your solution to cover the top eggs

about two inches deep. The following day or just as the eggs are gathered, more eggs can be placed in the same container and more of the solution poured over to cover them. You can continue this process until your container is filled. See that the top layer of eggs is well covered with the solution and if there is any evaporation the container must be refilled. Cover it over with a heavy cloth and tie it on. Lay a clean board or weight over it to protect same. Place them in a cool place, cellar or basement, and they will keep for several months. White eggs preserve as well as brown eggs.

The eggs are good for any purpose, but if you wish to boil them, a small hole should be punctured in the large end of the egg before placing it in the water. In all instances, wash the eggs in water before using.

**CALIFORNIA RABBIT BREEDERS' ASSOCIATION**

The California Rabbit Breeders' Association, formerly the California Pet Stock Breeders' Association held its annual meeting May 26 at San Francisco. At that time the new officers were installed as follows: President, Mrs. L. B. Hackett; first vice president, C. A. Wilkins; second vice president, E. I. Pike; secretary-treasurer, C. J. Williams; governors, C. P. Gilmore, Hale Prather, Mrs. C. A. Eichey, M. L. Thayer, Geo. B. Nugent, E. F. DeLaMater, and Henry A. Hoyt.

A table show was held at the conclusion of business meeting with the official club judge passing upon the merits of specimens. Stock donated by E. W. Cole, Hale Prather and oth-

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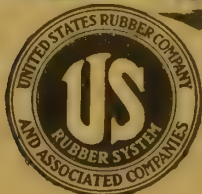
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# CALIFORNIA CULTIVATOR

*and LIVESTOCK and DAIRY JOURNAL*

*Los Angeles*

*An Illustrated Weekly for the Rural Home and Ranch*

*San Francisco*

Vol. L.

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Proclaim Liberty Throughout All Lands



Established 1877

Forty-first Year

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and LIVESTOCK and DAIRY JOURNAL

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Saturday, June 29, 1918

## OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

## THIS WEEK'S COVER

The Liberty Bell is ringing again as it never rang before. Its clear notes reach far beyond the belfry of old Independence Hall, in fact, far beyond the boundaries of the country which is glad to extend the liberty which it has secured for its own people. This year's Fourth of July will be the most glorious of all though there will be less of spread eagles and less of boasting as to our accomplishments and more of serious thinking as to these, the most wonderful days in the history of the world. The problems are great, and America is meeting them nobly.

## FORWARD

We often hear inquiry as to the attitude of former peace advocate David Starr Jordan toward the war. He has said and, we understand, bears it out in actions: "Now that we are at war, the shortest way out is forward."

## DON'T BURN IT

Many a night we have seen the illumination of the sky from thousands of miles of burning bean straw. We have appealed through these columns and elsewhere for the stopping of this waste. Now comes war and the waste will be stopped, for the federal government has taken a hand and hereafter the burning of these

valuable feeds will be a criminal offense. Even the citrus orchard may not use it as a mulch until its feeding value has been obtained.

## SAVING STRAW?

Are we saving the straw and even the weeds which have feed value? California will need every morsel this year. Live stock men are appreciating the seriousness of the situation. Those who have lands not used to better advantage should plant the sorghums, especially Sudan and all crops which will give roughage. Bear in mind the food administration will take cognizance of every violation of its order to save. The food and the feed slacker have possibilities of a penitentiary sentence.

## BOYS—FIRES

In Colorado a number of boys who were too young to understand the seriousness of a mountain fire were permitted to go into the mountains without guardians, and disastrous fires were started as a result. The boys were jailed and will doubtless suffer, or their parents will, and the fire continues to burn. The last place for children to play with fire this year is in the mountains.

Speaking of fires, if we are smokers, let's not when in the dry fields or working in inflammable stuff. A carelessly thrown cigarette stub or the emptyings of an old pipe have caused many a serious loss; let's forego this year.

## WAR SAVINGS SOCIETIES

W. S. S., which mean War Savings Stamps or War Savings Societies, have been magic letters for the past seven days. The campaign has been on with much vigor, and from reports in many sections with not as liberal returns as were expected. Too many have considered W. S. S. as standing for child's play rather than for the serious work of building merchant marine, but the need of our country is no greater than along the line of the merchant marine, and the two billion dollars is needed, every penny of it, for payment on these ships which are to be delivered before December 31, 1918. But note again: W. S. S. stands for more than two billion dollars. War Savings Societies, which should number in their membership a hundred million people, have taken this pledge:

"I further pledge myself to save and economize to win the war."

"Save and economize" means pennies, more, it means now lumps of sugar and cups of flour.

The W. S. Stamp campaign may end soon but the W. S. Society campaign must not end till the history of the World's Great War is being written.

## SLACKERS

We do not believe there has been a time since the war began when California farmers have felt the sting which comes from unjust treatment as at this moment. After answering the call to buy liberty bonds, war savings stamps, aid Red Cross, Y. M. C. A. and other activities, and also responding to the call to produce food for starving peoples, the farmer is today confronted by a situation which prevents him from getting his foods to those who need them. The Imperial Valley is stacking up thousands of tons of barley and other grains for which no opportunity, or at least little opportunity, is offered for dis-

posal. Potato growers are saying, "Never again."

And latest, the apricot growing sections are faced with enormous loss or with taking last moment offers from dry yards and canneries. When appeal is made to those who are fitted with dry yard appliances to make a reasonable offer for the fruit, buyers have simply thrown up their hands and charged to the food administration a condition "which prevents us from buying." This has been taken up with the food administration, and complete denial is made as to any order which would prevent handling of apricots or any other crop on a basis which would permit of reasonable profit. But profiteering has been prevented in the interests of the consumer, and it has resulted in backing the situation up to the grower from whom it seems to be considered that the profits can be squeezed without hindrance.

Some apricot producers are buying trays or buying shake or other material and making, but without other appliances for handling the crop, which ripens within ten days or two weeks, and with the inability to handle the large amount of labor required, the loss will be very great unless some steps are taken to aid these people. A great quantity of California's most healthful fruits may be lost.

## Y-O-U

Individual responsibility for the success of our arms in this war has not been fully appreciated. We have told ourselves that we could not be too serious or we would become despondent, hence we must have our pleasures and follow our even tenor of life so far as possible. The editor of the Saturday Evening Post remarks:

"Before you can win in France you must take Broadway and all the little Broadways of America in hand. You must do something to the swine soul of the crowd that leads the jazz life; that swills and guzzles as usual; that brags as if its \$50 Liberty Bond were engraved in its heart's blood; that cheers everything, including the chorus that comes out in American-flag petticoats; and that proves its patriotism by its hoarseness and its alibi buttons."

More, before we win in France, we must take a greater personal responsibility upon ourselves. "We must be fired with the old American pioneer spirit, each shouldering his share of the burdens of the long trail. There can be no vicarious sacrifice. We must go to it with one big boss, one big people and one big punch. Then—You will win the war."

One of the steps which we, you and I, must take, is to devote a bit of our time between now and election day to informing ourselves as to the qualifications of congressmen and others asking for our suffrages. The candidates may be patriotic; they may be honest; they may be men of great intelligence; but we must have all combined. Our congressmen, as well as our president, are holding the lives of our boys in their hands, and we must have men with ability to see and to quickly decide the great questions before us. For once in the political history of this country we care not whether a candidate is a Republican, a Democrat, Socialist or what not politically.

## This Week's War Notes

"Drive to Berlin through Austria-Hungary" is the latest slogan.

The new war freight rates have been in force since last Tuesday.

Presumably congress will soon make declaration that a state of war exists between the United States and Turkey.

Brazilian war vessels are aiding in the patrol of the Atlantic and are most helpful convoys for American troop ships.

Because of sub destruction of millions of pounds of sugar appeal is made to all the people to save sugar as never before.

A movement has been started to secure signatures to a pledge that the signer will purchase no German made goods. Such a pledge is unnecessary.

London reports city of Irkutsk, Siberia, captured by Alexieff, former Russian commander in chief. He is in command of Czecho-Slovak troops.

The Fourth of July will be celebrated this year by the launching of more vessels at many coast points of the United States than ever slid into the water in the history of the world.

The suggestion has been made that Central and South American troops be officered and drilled in this country, later to take their places in trenches with the Allies on the western front.

The number of American troops in France is not definitely known but the war department has announced that it will not be long before the number will reach 1,000,000. There is no day now but vast numbers are leaving for France.

A dispatch from Copenhagen states that Nicholas Romanoff, former Russian emperor, has been murdered in his reprimand at Tobolsk. Another dispatch from Berne, Switzerland, quoting from a German paper, states that the former Russian emperor has been transferred to Moscow.

The Allies are passing the Russian situation up to the United States. It is possible intervention may take place and it is thought a movement is on in Russia which will make possible the sending of Allied troops to aid the Russians in redeeming their country. There are 35,000 loyal Russians who still retain their arms and are ready to oppose the Bolsheviks, especially Lenine and German sympathizers.

The Allies are watching the internal situation of Austria-Hungaria with interest. There have been strikes and riots which have resulted in much bloodshed. The rioters charge that the food is all taken to Germany and that they are starving. General Ludendorff has been sent and given absolute power. It is generally considered that Austria's emperor is now only the vassal of Kaiser William. It is believed that Berlin finds it necessary to sacrifice her ally in order to save the western front.

The Italians and the Allies have won a glorious victory. All is still confusion but it appears that with the loss of well up toward 200,000 men, 50,000 of whom are prisoners, the Austro-Hungarians are in a disorganized fight. Vast stores, especially large guns including many which were captured by the enemy in their plunge into Northern Italy some months ago, have been taken. The Italian troops have been in fine spirits, have fought valiantly, have been aided by French and English reserves. It is also reported that American flyers have rendered much assistance. Italian cavalry has been effective in cutting off the escape of many of the Austrian troops. The victory has been made greater by the flooded streams which have cut off the retreat. The only report made by General Diaz, commander in chief of Italian armies, is, "Yesterday, we obtained a great victory."

The western front gives occasion for great hopefulness to the Allies. Excepting in front of Rheims, there have been only light raids during the past week but all gains have been on the part of the Allies. Artillery action has been almost incessant and American gunners have won many compliments. The heaviest assault of the week in the Rheims sector was on the line held by Italian troops. It is rumored that promises were made German soldiers of entire freedom of the champagne cellars in which millions of bottles of champagne are stored. However, the defeat of the Germans has been complete. The German program has been made more difficult by the Piave defeat. Last moment advices indicate a massing of Teuton troops for the mightiest of all onslaughts on the Western front. Intelligence service and air service unite in reporting great masses of troops only a short distance behind trenches. Immense ammunition dumps have also been placed and new field hospitals erected.



# Winter Injury to Fruit Trees Common This Year



WINTER injury is particularly prevalent this season in Southern California. Many orchardists have complained that their fruit trees did not leaf out well and have not made a normal growth this spring, with the result that the crop prospect is not very bright. This condition seems to apply particularly to the early varieties of peaches. Walnuts have suffered to a very large extent this season from winter injury. Orange trees, especially those situated on the lighter soils, are not looking normal and in some cases are not setting much fruit. The per cent of summer lemons in some sections is below normal. Many grape vines put out a weak straggly growth and are gradually dying.

Most of the abnormal behavior referred to seems to be the direct result of the abnormally long, hot, dry fall of last season. California growers must get away from the precedents established in the fruit districts of the Northwest and the East. In these sections, with the coming of cold weather the trees mature their wood and go dormant for the winter. In parts of the Southwest, especially in Southern California, our winter weather is not sufficient to make the trees mature their wood and go dormant. In fact, the gradual depletion of the soil moisture toward the end of the growing season is probably the most important factor in making the trees cease growth and enter a dormant condition. In a normal season, this depletion of soil moisture does not reach a dangerous point before the setting in of winter rains, accompanied by relatively cool weather, which prevents the trees from leaving the dormant condition until warm weather occurs in the spring.

Last season was exceptionally long and dry, with good growing weather until nearly Christmas, and where the trees were heavily irrigated they did not go dormant until very late in the season but retained their leaves long after the period when they normally

Written for California Cultivator  
By Robert W. Hodgson

would have shed them. The result was that they largely exhausted the food reserve which had been stored up in the trees for the development of the buds and leaves in the spring, and when spring came they put out a weak sickly growth which did not bear strong healthy blossoms. This same condition is frequently occasioned with almonds by an attack of red spider which accomplishes the reduction of the leaf area during the summer when the food reserve is being laid up.

With walnuts, considerable winter injury was caused by the trees growing late and being frosted. Succulent

walnut shoots are very tender to frost and a very light frost is sufficient to injure them. The injury may not show up until spring. This type of winter injury is largely confined to orchards situated on lands of low elevation, and more especially where the water table is high, which provides conditions favorable to late growth. Of course, a certain amount of dying back in walnuts can be attributed to the heat wave of last season.

However, even in orchards which were not late irrigated, there was considerable winter injury which may be laid to the extremely dry atmospheric

conditions prevailing last fall. The wood was properly matured but the soil moisture was depleted to an injurious degree long before the winter rains set in. For several months the weather was extremely dry and warm after the trees had gone dormant, and they simply dried out. This type of injury occurs quite frequently in deciduous trees in the Great Plains area, due to the prevalence in some seasons of dry winds during the winter which desiccate the smaller limbs, resulting in their dying back in the spring. Winter injury of this kind is common to the apricots in the Hemet section and to the walnuts on the higher lands, and may be found in dry farmed sections quite generally.

The prevention of winter injury in California is largely a matter of intelligent irrigation. Copious winter irrigation is always dangerous in regions of mild winter climate for the reason that it may keep the trees from going dormant at the proper time, or if they are dormant it may induce them to leave this condition, especially if the weather is warm. Toward the end of the growing season water should be withheld to induce the trees to mature their wood and go dormant, but trees should not be allowed to dry out. If the winter remains dry they should be given a light to moderate irrigation depending upon temperature conditions.

In the case of lemons, winter irrigation during exceptionally dry seasons is of the greatest importance because they are evergreens and do not go dormant, and in addition are always setting a new crop. However, our experience with citrus trees in general has indicated that, due to their lack of economy in the use of water, during periods of extended dry atmospheric conditions considerable shedding of the fruit may occur though soil moisture conditions are optimum. It is needless to point out, however, that where the soil moisture is deficient the loss from shedding is much greater than where the soil is well supplied with water.



Winter Injury on Walnut

Tree showing serious injury on many branches. This condition in many orchards is calling for investigation on the part of experts.

## The Rating of the Tractor



WE HAVE heard tractor salesmen make complaint because operators have expected too much and put too big loads on their machines. One farmer was found guilty of using big disk gangs, with pulverizer, drill and harrow, which should have had a tractor of nearly double the capacity of the one used. The farmer got away with it for a short time.

We have also heard the farmer complain because machines sometimes do not come up to their rating. This question has been investigated by the editors of the Farm Implement News, who say:

"Those of inquiring mind will make comparisons, and one of the first things that will strike the investigator is the discrepancy between the ratings of many machines using engines of identical size and make. While allowance must be made for efficiency in power transmission to the rear wheels or track, those elements being approximately equal, it is self-evident that one machine will develop as much power as another if the same motors are used and operated on the same fuels at proper engine speed.

"The reason for some of these dis-

crepancies is that certain manufacturers or their advertising men have overrated their machines. When Farm Implements News sent its data sheets to tractor manufacturers it was careful to specify that the ratings should be those recommended by the Society of Automotive Engineers as standard, for they are the only safe ratings to use. The standards adopted by the S. A. E. are as follows:

### Drawbar Rating

"The drawbar rating shall be 80 per cent of the horse power that the tractor is guaranteed to develop at the drawbar continuously for two hours, the tractor being in good condition and properly operated at rated engine speed. The tests should be taken on ground sufficiently firm to give the traction wheels a good footing, a firm sod being preferable.

### Belt Power Rating

"The belt power rating shall be 80 per cent of the horse power the engine is guaranteed to deliver at the belt pulley continuously for two hours, the engine being in good condition and properly operated at rated engine speed.

"It is apparent that many manufac-

turers have not followed these recommendations, and if the circumstances are not known it puts the conservative manufacturer in an unfair position. Here is the way the situation impresses the Port Huron Engine & Thresher Company in a letter received April 24 from A. E. West, the general manager:

"We are this morning in receipt of a copy of your Tractor Field Book, and in reviewing the specifications on pages 60 to 63, we feel that we have gotten the worst of it, as compared with others, in our drawbar and brake horse power ratings. In your specification sheet you particularly call for these ratings S. A. E., and we were very careful to deduct 20 per cent in arriving at ratings included in our specification sheet. Apparently others have not done this. This puts us in a rather peculiar light because others using identically the same motor we are have not observed the same rules in determining their ratings, and while we understand this, I am not so sure that the prospect, dealer or customer, would be as careful to analyze the situation as this."

"If the editors of this publication have learned anything about tractors

in their sojournings among dealers and conversations with them, it is that more tractors are 'killed' in many sections by overrating than by any other one factor. We know of one section in Wisconsin where a tractor, which we shall call the Billdab because that is not its name, can hardly be given away, let alone sold. And it all came about because the first ones sold were overrated. Farmers found that they would not stand up when loaded to the recommended pull and condemned the machines as worthless for that reason. Other tractors have since been introduced in that section, but the manufacturers and salesmen were careful to understate their abilities rather than overstate, and the result has been that the later comers are reaping the permanent trade and profits.

"For this reason we have no fear that concerns which follow the safe, conservative course, the S. A. E. standard one, will suffer in the end. It will be just the other way. The commonest boast among farmers owning tractors is that Bill's 10-20 will outpull Jim's 12-24. The capability of the underrated machine is enthusiastically

Continued on Page 774



# Agricultural News Notes of the Pacific Coast

## Northern California

The warm weather has materially improved the prospect for a bumper rice crop.

Glenn County Live Stock and Agricultural Association is planning for its fair to be held at Orland.

The wheat district about Chico, Butte County, shows about two-thirds as much wheat as in 1917.

Farmers generally over the Sacramento Valley are finding it necessary to sink wells and install private pumping plants.

Placer County board of supervisors has passed an ordinance requiring all tractors and other engines to use spark arrestors.

The state board of education is conducting training classes for agricultural teachers at the University Farm, Davis.

Yuba County is installing a large number of private pumping plants to give supplementary irrigation systems.

Thirty-one breeders of Duroc-Jerseys recently met at Placerville and organized an El Dorado County Duroc Association. Dr. L. J. Anderson of Placerville is secretary.

The district attorney of Humboldt County is calling attention of live stock growers to the state law regarding running of stock on the highways and has caused several arrests for violation.

The California Pear Growers' Association is now fully organized. Frank T. Swett is president. The crop this year will not exceed 70 per cent of last year's crop but the price presumably will be higher.

The California Cattlemen's Association has arranged with Ralph Merritt for the grazing of Yosemite Park lands during the present season. It is estimated that it will accommodate 20,000 head.

A meeting at Fresno of the independent dried peach growers of the valley, which was followed by another at Yuba City on the 11th, was for the purpose of passing on a plan of fixing maximum price for dried peaches and to gather an idea as to output for the coming year.

The labor difficulties in the asparagus growing districts along the Sacramento River have resulted in great loss in harvesting, and many deliveries which were anticipated will not be made. Over 1500 acres were not cut at all and other sections have lost greatly because of shortage of labor.

An electrical storm in the mountains of Tuolumne, El Dorado, Trinity, Lassen and Siskiyou Counties has been followed by outbreak of scores of fires, and district foresters and rangers have had a strenuous time in the endeavor to bring them under control. Several suspects have been arrested with the idea that they may have been the cause of starting some of the fires.

The McCloud River Lumber Company has agreed with the United States forest service to give compensation for its service of detecting and suppression of fires which may occur on some 275,000 acres belonging to the company, largely in Siskiyou County. In addition to this compensation, the company agrees to maintain a special fire fighting crew to be under command of the fire agent of the forest service in time of need.

## Central California

Denair, Stanislaus County, farm center has established a labor bureau.

Stanislaus County is planting a large acreage to honey sorghum.

Kings County farm bureaus are investigating labor housing conditions.

The first car of cherries from Tulare County brought \$8000.

Harry Drobish will become the acting farm adviser for Madera County. He was formerly in Riverside County.

Farmers of Tulare County are protesting before the board of supervisors the high costs of squirrel killing.

The Kern County farm bureau holds auction of fat hogs Friday of this week.

Minimum wheat price of \$2.00 per bushel has been made free on board cars at all California points.

Patterson, Stanislaus County, is complaining because of inroads of the grasshopper pest.

Over 10,000 acres of grain hay have been cut near Visalia, Tulare County. Many maintain this could have been made good heavy grain.

One live stock man in Salinas, Monterey County, recently shipped six cars of fat cattle to Los Angeles packing houses.

The Tulare County board of supervisors is discussing discontinuing work on the highways until after the war.

The "Stanislaus plan" of financing farmers is expected to greatly increase California's production of wheat next year.

Kern County farm bureau has reorganized its marketing department. Its most successful work has been in public sale of fat stock.

The Cattlemen's Association of California has tabulated the returns of Monterey County's assessor and has list of owners of all stock in that county.

Contractors and caretakers of non-resident owned orchards in Tulare County are raising prices of contract work from \$30 to \$40 per acre. Some are asking \$45.

The food administration has fixed a price of ten dollars per ton on Monterey Bay sardines. The maximum allowed to each fishing outfit is ten tons.

Owing to complaints as to Fresno County's using quantities of road oil which has a certain value as fuel oil, the board of supervisors has asked investigation from the federal oil director.

Peach growers of the San Joaquin Valley, have been asked to burn no peach pits; the war department is using them in the manufacture of charcoal which is used effectually in the preparation of gas masks.

Stanislaus County merchants will furnish fire extinguishers to farmers at cost, and the farm bureau has organized practically every community into fire fighting organizations. There will be no center meetings during the month of July.

The California Peach Growers' Inc. and the Tulare County Canning Peach Growers' Association have fixed on the prices for canning peaches: Clings, \$65 per ton; Freestones, \$45 per ton. This is \$5.00 to \$10.00 lower than anticipated this spring.

## Southern California

Chino, San Bernardino County, is planning the installation of a large bean cleaning plant.

A freak summer shower has proved of great benefit to beans in the district of Tustin, Orange County.

Valencia oranges continue to command prices entirely satisfactory to the producers.

Fred Rafferty, labor examiner for Orange County, reports more laborers than he has employers.

Southern California farmers have borrowed up to this time over \$2,000,000 of the national farm loan.

Los Angeles County farm advisers have been giving demonstrations in citrus pruning.

Buckwheat as a green manure crop is declared to have saved many an orchard from June drop.

The handling of drying apricots has already begun in many sections. The fruit will be earlier than last year.

The board of supervisors of Imperial County has passed formal resolutions urging farmers to plant extensively of milo.

Imperial Valley cantaloupe growers have had a good season and have shipped out some of the finest fruit and the best pack of any season.

Los Angeles farm bureau now has a cow testing department. Geo. E. Knight has been secured as official tester.

Potatoes have been moving fairly freely, but some growers, especially in San Diego County, have been holding off digging, hoping for fairer prices.

Members of the California Prune and Apricot growers' Association in Hemet, Riverside County, are working for a 100 per cent membership in that organization.

Arlington poultrymen have contracted for delivery of eggs to Los Angeles at 27 cents per case. This is five cents increase over last year's rate.

Riverside County has another farm adviser. A. L. Paschall, formerly of Arizona, has retired on account of health, and R. N. Wilson has been appointed.

Fish canneries at Long Beach have been compelled to close because of fish shortage, the Japanese fishermen refusing to deliver fish at the maximum price fixed by the fish administrator.

Many walnut sections are finding serious "winter injury" from which a large number of trees have been killed back. This is generally conceded to be due to the dry condition of the soil in early winter or to ill advised irrigation.

The San Diego County board of supervisors has appointed five fire wardens who will have charge of fire fighting operations in the different parts of the county. They will be under the direction of Forest Supervisor Phillipson.

The farm center at Arlington, Riverside County, which is largely made up of poultrymen, recently devoted one center meeting to discussion of poultry questions and decided that the hen must produce at least an average of 127 eggs a year to pay for the grain she eats.

## The Coast and General

Texas acreage of tomatoes will be materially short of that of last year.

Practically all walnut growing sections are predicting normal crop.

Chandler, Arizona, is shipping honey to France.

The great liberty loan parade in Manila ended with the purchase of six million pesos worth of bonds.

The hot weather in some of the corn belts has caused serious damage to corn crop.

Alfalfa growers of Chandler, Arizona, are forming cooperative marketing association.

Orchards on the hillside near Sierra Madre are being planted to alfalfa in the hope of improving soil conditions and preventing washing of terraces.

A traffic committee is to have entire charge of all freight matters in the state of California, Nevada, Utah, New Mexico and Arizona.

The Idaho state council of defense has asked the federal government either to pay farmers for wheat when placed in elevators or to finance the farmers.

Idaho's fruit crop will be materially short of that of last year because of heavy freezes occurring toward the end of May. It will not be the total loss first anticipated, but it is estimated now to be 25 to 50 per cent.

The production of sugar cane is being encouraged in Persia. Formerly it was a great industry, but during recent years it has been allowed to lapse.

One Utah farmer after careful observation in tractor management in general farming declares that one man with tractor has done the work of two men with six horses.

Another assistant farm adviser has been appointed for Los Angeles County, R. E. Nebelung of Anaheim. His work will be largely with citrus orchardists.

The cow testing association of Stillaquamish County, Washington, reports 480 cows averaging 826 pounds of milk and 36.22 pounds butter fat per month. The average feed cost per cow is \$5.41. The best cow in the association produced over 70 pounds fat.

A Nebraska farmer, dissatisfied last fall with the 800 bushel return from 32 acres of wheat, at odd times during the winter ran the straw through the separator a second time. He obtained 75 bushels which sold for \$187.50. There had been a waste of 9.3 per cent of his crop.

There will be a dairy show held at Alger, Montana, June 22. The Interstate Fair at Spokane, Washington, has chosen dates of September 2-7; Montana state fair, September, 9-14; Idaho state fair at Boise, September 30-October 5; Northwest Live Stock Fair, Lewiston, November 7-13.

A housewife in the cocoanut growing section of Mindanao, Philippine Islands, reports method of making cocoanut butter by finely grating meats of four cocoanuts, pouring over it ten cups of boiling water. This "milk" is allowed to remain over night to set when the "cream" is skimmed off exactly as from cow's milk. The "cream" is put in ice cream freezer for two hours, when it is churned as ice cream is ordinarily frozen.



# Waterfowl on the Farm

Written for California Cultivator by Jean A. Koethen



GESE and ducks, like turkeys, are much better adapted to the farm than to the backlot or small suburban place. Like turkeys they can be raised in confinement, but the cost of keeping them under such conditions is so great that there is little if any profit in it. On the farm where they can forage for part or all of their ration, eating what would otherwise go to waste, they can be kept with no small profit and require but little care. Every farm should have a few ducks and half a dozen geese. If it happens to be in a river bottom or has a little stream running through it, conditions are ideal for both.

There are half a dozen good breeds of ducks. For eggs the Indian Runners are best. I am told that many persons prefer Runner duck eggs to hen eggs. The price they bring in the markets is about the same, however. If ducks are wanted for meat, there is probably nothing better than the Pekin, which weighs four or five pounds at ten weeks of age. The Muscovy seems to be coming into more general favor as a general utility duck.

The hatching season for ducks begins in January. Runner ducks usually begin laying in the fall and continue well into the summer. For Pekins the laying period is much shorter. A breeding pen of ducks consists of one drake and four ducks. The eggs require 28 days for hatching and may be hatched either in incubators or under hens. When they are hatched in incubators the temperature must be kept a little lower than for hens' eggs, and more moisture is often recommended but seems not to be always necessary.

Ducklings do better than chicks in fireless brooders. In fact, in this climate they are seldom given artificial heat. In chilly weather it is better to take the brooder indoors at night for a week or two or to keep it in a closed coop. They must be kept penned, for they do not seem to have the sense of locality that chickens and turkeys have, and will wander away and lose themselves. They are also a tender morsel for squirrels and gophers, which will eat ducklings when they would never think of touching a chick.

In one respect ducklings are more easily raised than chicks. They are less susceptible to disease. Keep them out of the hot sun and from getting chilled or wet the first two weeks, meanwhile feeding a soft mash with a little sand to help digest it, and your duckling is as good as raised. Vermin do not attack them as long as they have water to dip their heads in, and while their brooders and pens should be kept reasonably clean there is no need of the scrupulous cleanliness chickens require. In fact, it is hard to see just how one would attain that scrupulous cleanliness with ducks, for they must have water, and where there is water there is also mud.

I suppose one reason why the duck has such a small place in the affections of the average farmer is that it is not a friendly bird. Little or big, you cannot pet them. Chickens soon learn to climb on the shoulders and knees of their caretaker; turkeys and goslings follow him from the first day. Ducks run away. They are timid, frightened to death at a stranger, so shy and nervous that in some large duck plants lights are kept burning all night. Nevertheless,

they are good eating, quick to mature, and, for those who have range, cheaply raised.

Ducklings are not fed till they are two days old. They will not eat earlier than this if food is offered them. A good first feed, given the morning of the second day, consists of cracker or bread crumbs scattered over fine sand on a board. At least this was a good feed before we began to Hooverize. Now cracker crumbs

them, as it should be after they have learned to eat heartily, it will take the place, to a large extent, of the animal food, and will hasten growth. When only a few ducks are kept they may be allowed to range when they are old enough, and will pick up most of their green feed. The mash, however, should always contain both greens and sand.

The ration of breeding ducks is similar to that of the ducklings, except



Aylesbury Ducks

are out of the question, and no one would think of feeding white bread to ducks. I fancy bran bread crumbs would be quite as good, or cracked wheat bread, and I should not hesitate to try corn bread crumbled fine. The third day after hatching, mix bran with considerable clean sand and make it crumbly wet. Feed on a board four or five times a day. Give water in chick fountains and remove after each meal. If ducklings get wet at this tender age the wetting is often fatal. The water given should not be very cold, neither need it be warmed. Ordinary tap water is warm enough.

The tenth day a little corn meal and cut up alfalfa or other green stuff is added to the sand and bran and the proportion of this, is gradually increased till at the end of the fourth week the ducklings are on a mash consisting of equal parts corn meal and bran, with 15 to 20 per cent of green stuff added. Many breeders add beef scrap after the first two weeks, but the ducks seem to do equally well without animal food. Perhaps they would grow more rapidly with it, but in war time, when beef scrap is expensive and likely to be scarce and scarcer, it is as well to do without it when it can be dispensed with. If green stuff is kept before

that the mash is mostly bran, with a very little corn meal added. If they have green range, no greens need be used in the mash. Some breeders feed cracked corn and even larger grains, but this is expensive feeding, and the ducks do better without it.

The goose has been called the most intelligent of all farm poultry. Certainly the goslings are very friendly. They are accused of being domineering after they reach maturity, but the young stock are companionable and docile. No other poultry can equal them in growth. My Emdens last year weighed ten and 12 pounds at three months of age. That is twice as large as a duck and four times as large as an ordinary chicken. If they brought as high a price as chickens or even ducks they would be the most profitable of all poultry. Unfortunately there is little demand for them except at Christmas and certain Jewish holidays, so any attempt at intensive culture is out of the question. On the farm where their feed costs but little a fine roast goose for the occasional holiday is decidedly worth raising. On the continent they are raised for their feathers, but Americans do not care much about picking live geese. The feathers are very valuable if one does not mind

taking a little more trouble for them.

Goose eggs require from 28 to 30 days for incubation. The eggs may be hatched either by hens or by incubators. If they are hatched by hens a close watch must be kept after the eggs pip, for the hen does not always like the looks of this queer foster child. Toward the end of the laying season the goose should be allowed to hatch a brood.

Goslings that are artificially brooded should be kept quite warm the first two weeks. A jar of hot water wrapped in flannel in their brooder box will give all the heat necessary, and they quickly outgrow the need of it. They can be out in the sun almost from the first day. If they have a good grass run, so much the better. But get them in before the afternoon becomes chill. They are not as susceptible to chilling as chicks, but are more susceptible than ducklings.

For 36 hours after hatching goslings need no food. Keep them warm and quiet and dry. Bread and milk may be given for the first day's feed. After this give them a moist mash three times a day. After they are on range they need very little mash. The mash may consist of bran and corn meal or of bran alone. A little sand and cut-up greens should be added if the goslings are confined but are not necessary if they are allowed to run. After the goslings are two or three months old they need but little shelter. An open coop or shed is sufficient.

Goslings are hardier even than ducks. If only they are kept warm and dry the first two or three weeks, they are thereafter immune to disease, untroubled by vermin, and quite able in most respects to look after themselves. Geese are herbivorous, and if they have good pasture need grain only during the breeding season. Add to this the fact that they are good breeders for ten years and live to a good old age, and you have a bundle of recommendations for the best farm fowl on earth.

Neither geese nor ducks require water to swim in, but both do better and are more economically fed if they have access to damp land and the vegetation which is peculiar to it. This is their natural food and the bugs and insects that are found among water plants supply the need of ducks especially for some animal food. When there is no pond or stream near by, ducks should be supplied with a pail or tub of water in which they can wash their heads. If they have no opportunity for washing the heads are apt to become infested with vermin.

## ADVISES AGAINST BUYING FOR CHRISTMAS GIFTS

The council of national defense issues the following statement:

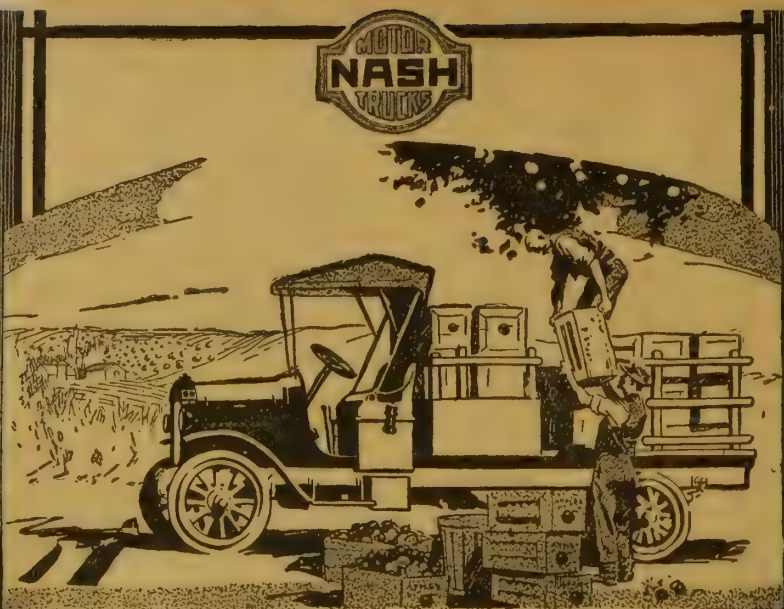
The council of national defense and advisory commission have received inquiries as to the attitude of the government toward Christmas buying. Manufacturers and merchants are desirous to be advised at this time in order intelligently to plan for their Christmas stocks. Therefore the council and advisory commission now announce that it is their belief that Christmas giving which involves the purchase of gifts should be discouraged as relieving to that extent the present heavy burden placed upon labor, transportation, and other resources of the nation, and also as being in harmony with the previous announcement of the council and advisory commission urging thrift and economy upon the country.



Reflections

A side line which may be made a profit bringer on some ranches.





QUICK AND ECONOMICAL TRANSPORTATION

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Time is the farmer's most valuable asset, in these days of intensive food production. Nash trucks save the farmer's time by hauling his loads to and from town in half the hours required by horse-drawn vehicles.

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Nash trucks are particularly suited to the farmer's needs because they are equipped with M. & S. automatic locking differentials. The driving wheels of Nash trucks cannot spin. This saves tires and saves fuel. It allows Nash trucks to get through where other trucks without this important feature cannot go.

The strong, internal gear drive rear axle of Nash trucks is not only simpler and lighter than others, but delivers more power to the driving wheels, especially at low engine speeds.

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One Ton Chassis, . . . . .	\$1595
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# NASH MOTORS

VALUE CARS AT VOLUME PRICES

(707)

## Citrus Canker in Australia

The various states of Australia propose to make a fight on citrus canker which is reported to exist in the Northern Territory. The April issue of the Fruit World of Australasia says:

"A flutter was caused by a misapprehension which got abroad through a statement made by the minister of agriculture (Mr. Grahame). The misapprehension evidently arose from the report of a question asked in the assembly as to whether Mr. Grahame's attention had been drawn to the presence of the citrus canker in Australia. Mr. Grahame replied: 'My attention has been drawn to this disease, and the necessary action is now being taken,' but by no means inferring

that citrus canker existed in New South Wales.

"In September, 1916, the commonwealth government notified by proclamation that citrus canker existed in the Northern Territory; since then the New South Wales department of agriculture has taken every precaution to prevent the entry of the disease into New South Wales, and the rigid restrictions imposed will not be relaxed. The minister has caused a further communication to be addressed to the commonwealth government regarding the representation put forward by the fruit growers association for steps to be taken to stamp out the disease before it has an opportunity to spread from the territory."

## Citrus Fumigation Described

No other gas is so effective in quickly destroying insect pests as hydrocyanic-acid gas, says the United States department of agriculture's Farmers' Bulletin 923, Fumigation of Citrus Trees, by R. S. Woglum, which also pronounces the fumigation of plants with the gas to be one of the most important discoveries in the field of insect control.

The success and rapid development of the gas treatment in California, the bulletin says, not only resulted in the almost complete abandonment of spraying as a means of controlling citrus-scale insects, but led to the introduction of fumigation into other citrus regions of America as well as into most important producing foreign countries.

Directions given in the bulletin are specifically for the control of scale and related insects infesting citrus trees, but with proper modifications they apply to the control of similar insects on other trees and plants. The bulletin deals with methods of procedure, necessary equipment, chemicals of fumigation, and effects of the gas on insects and plants, and includes dosage schedules to be employed for the control of the various common citrus pests.

### Why Fumigate Only at Night?

Fumigation should be carried on only at night because the actinic rays

of light intensify plant injury, both during and immediately after fumigation. Plants fumigated in direct sunshine or placed in direct sunshine within one or two hours after treatment usually are injured, the degree of injury depending upon the strength of gas used and the temperature of the air. Plants fumigated in diffused light appear to be no more injured than those fumigated in darkness.

Trees of the first row fumigated at night and those of the last row fumigated in the morning frequently are more or less injured. In the former case, injury resulted from operations being begun before sunset; in the latter, from work being continued after sunrise.

### Guard Against Injury

Since a much greater strength of gas is required for some insects than for others, and because different plants vary widely in their power to withstand the poison, it is necessary to consider carefully the plants to be fumigated. The foliage and branches of orange, lemon and grapefruit trees will stand without severe injury a strength of gas sufficient to destroy most of the scale insects which affect them. Apple, peach, pear and other deciduous trees in dormant condition can be fumigated without injury with a strength of gas greater than it would be advisable to use on citrus fruit trees.

## Potash After the War

There is little doubt that Germany has long regarded the possession of the Stassfurt potash deposits as one of its most valuable pieces on the diplomatic chess-board, says the May edition of the World's Work.

It has hoped to recoup a large part of its war costs by making the rest of the world pay through the nose for potash after the war, and to utilize what it has regarded as control of the world's fertility as a club to compel concessions whenever peace conferences convene. Two elements that Germany did not foresee have arisen to block this game. One will result from the restoration of Alsace to France. It has been disclosed only recently that the potash deposits discovered in that province in 1909 are even larger and more accessible than those of Stassfurt. The other is the development in America of methods of potash production that will be on the one hand adequate to supply the growing needs of American agriculture and eventually provide a surplus for export and, on the other hand be capable of withstanding any future

German attempt to destroy the industry by "dumping," without the aid of government subsidies or the shelter of a tariff wall. Alsace is in German hands, but when it shall have been restored to France its potash resources will not only break the German monopoly but provide France with a valuable export commodity to exchange for the vast supplies of all kinds she must obtain from us.

### RATING THE TRACTOR

Continued from Page 771

heralded and the reputation for delivering the goods with a safe margin is all that is necessary to establish a stable, permanent trade.

"A month or so ago a large tractor school was held in Columbus, Ohio, under the auspices of the Ohio state university. Some 20 or more different tractors were brought to the school by manufacturers to enable the farmers to study the different types of machines. As a part of the course brake tests were conducted by the students, but only on tractors voluntarily offered by the manufacturers for the



test. Nearly one-third of the machines were unable to attain their belt power ratings in the first tests instead of having some 20 per cent surplus power.

"In certain cases we understand that it was necessary to operate machines sold as kerosene burners on gasoline to obtain their belt power rating, and in others the motors had to be speeded above normal.

"Nothing but trouble is in store for the tractor manufacturer who advertises a rating which is the maximum possible under ideal conditions, for those conditions will hardly be approximated in the hands of the farmer.

"Until manufacturers generally adopt the S. A. E. standard ratings, the best way for dealers to judge the 'margin of safety' is to figure the cylinder displacement per minute per plow. To obtain this, square the bore in inches, multiply by the stroke in inches, then by the number of cylinders and finally by the r. p. m. Divide this result by the number of plow bottoms recommended. Conservative manufacturers are increasing their displacement per minute per plow each year. Not many seasons ago the displacement was around 75,000 per plow, whereas now it is nearer 100,000 or more."

Where it is possible to keep the tractor going day and night it should be done, for interest on the general "overhead" is no greater in a 24 hour service than in eight. What is more, the times are demanding very ounce of production possible, so we are glad to touch in the answers to queries this week on the point of lighting system for operation on tractor. Systems may be installed which are effective, costing from \$50 to \$200.

#### TRACTOR QUESTIONS

##### Electric Light for Tractor

Is there a satisfactory lighting system which one may attach to tractor which will make night work practicable? How much does such system cost, and is its operation expensive?—Subscriber, Fresno.

There are several satisfactory light plants to be used on tractors for plowing at night. You can get a generator, drive it from the flywheel of your tractor or from the belt which is controlled by the governor on the end of the generator shaft, allowing the generator to run at the maximum speed to handle your lights. We would suggest using a six inch spot light as used on an automobile, setting them on the fender of your tractor, using one forward and one rear for your plow. You can also equip your tractor with a storage battery and generator, which will be very expensive. This system would cost you something like \$150 and would not be very satisfactory as the dust and jar of your machine would be too hard on your storage battery. We would suggest your using the former outfit which would cost you not to exceed \$50.

##### Tractor Repairs

I have not yet dared to own a tractor. The investment is large and the repairs are an uncertainty. How serious a proposition is this matter of upkeep? My auto experience has taught me that with tires, gas and a few other things the expense is heavy, but more efficient service and greater accomplishment compensate, but tractor "service" has not yet reached the standard of auto "service." Are the manufacturers and dealers preparing to take care of our machines if we buy?—Subscriber, San Diego.

A great many of the successful tractor builders are running schools teaching the purchaser or prospect how to

take care of their bearings and oiling devices, and how to adjust them. There are a great many schools over the country that teach this at nominal

price. Various high schools in California are contemplating tractor courses another year. San Fernando High conducted a tractor course last spring.

## Keep Irrigation Water Away From Drain Lines

Many drainage systems are injured by the irrigator in careless application of water upon the fields where these drain systems have been installed.

The ordinary procedure is to backfill his trench, plow the field, run his leveler over the same, sow his seed and irrigate in the ordinary way.

When this is done the loose soil in the trenches that were opened in order to lay the tile for the drain system is sure to settle and the water following along the trench finds its way downward and into the tile, in many cases washing wagon-loads of dirt into the line, and very often completely plugging it.

This can be avoided very easily by leaving the dirt crowned over the trenches, when the backfilling is done, and then plowing a furrow or two on each side of the trench, crowding the dirt inward as much as possible with a "V." This makes a considerable ridge in the field with a ditch on each side of it, and the irrigation water entering this ditch will flow down the

same and never reach the drain line itself.

If it is necessary to carry the ditch across the drain line, this should always be done by fluming across it. Irrigate the field in this way for two or three years, until the soil in the trenches has become thoroughly settled, then the field may be plowed and crops grown directly over the drain, irrigation water applied in the usual way and no damage will be done.

If every farmer who has a drain on his farm would read the above and remember it, much money and much hard work would be avoided during the next ten years. — E. B. House, Colorado Agricultural College.

Santa Cruz County has a new horticultural commissioner. Donald D. Penny has been appointed to the office. He succeeds W. H. Volck who resigned sometime ago.

Jute wasteballs can now be secured from San Quentin at \$2.50 per thousand. There has been a serious shortage in supply.

#### FERTILIZER AVAILABLE AT CANTONMENTS

In the next few weeks contracts will be made by the office of the quartermaster general of the army for the sale of manure accumulating at all the national army cantonments, national guard camps, remount depots, and other important government posts. It is anticipated that these contracts will cover, in the aggregate, approximately 3,000,000 tons.

According to the latest published reports of the United States department of agriculture, there was used, in 1916, the third year of the war, nearly 2,000,000 tons less of commercial fertilizer than was used in 1914, the first year of the war. This was due to the limited available supplies of commercial fertilizer and consequent high prices it commanded even where it was obtainable.

The opportunity to purchase this manure from the great camps and remount depots of the country should prove a great boon to the agricultural interests of the United States.

At planting time remember the likes and dislikes of your family, and then, when canning time comes, you will not have more tomatoes than you can possibly use; and next winter your family can enjoy green beans, canned corn, spinach, sweet peppers, with all sorts of pickled relishes.

# What Samson Tire users say:

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"Glad to recommend Samson"

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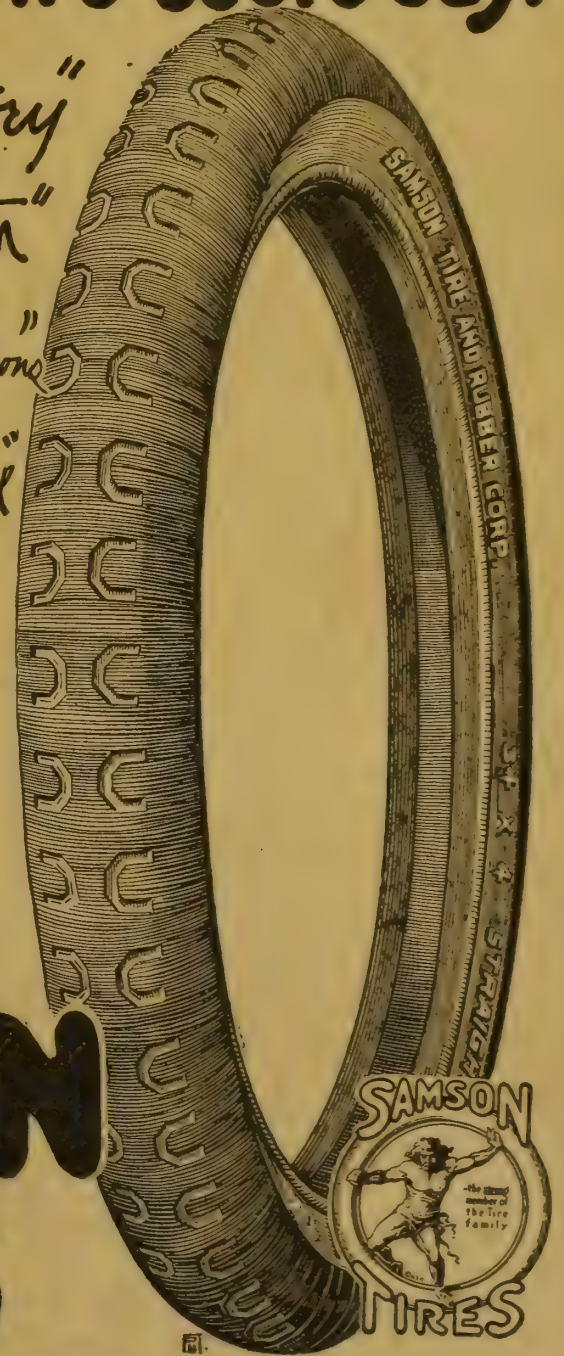
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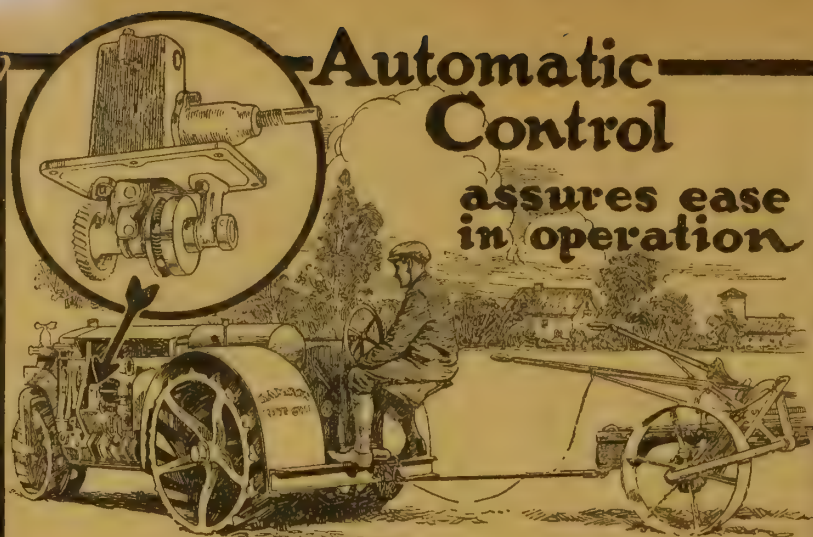
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## A New Theory as to Soil

From an Address by Prof. C. B. Lipman before Society for Promotion of Agricultural Science.



OW does modern theory in soil chemistry differ from the old theory? Let us take a specific example to illustrate and emphasize the point. A decade ago there were scarcely a handful of soil chemists who would have had the temerity to propose that we discontinue the use of the strong acid digestion method in soil analysis. The theory upon which that method was based was that it was equal to the task of indicating the portion of soil minerals which become available to crops in soils, with a fair degree of facility. This assumption was based on another assumption, to the effect that there exists in the soil, as we know them to exist in certain mineral deposits, compounds known as zeolites, which delivered up to solvents of no great power the bases held by them in considerable quantities. Moreover, the method of strong acid digestion of soil was based on an alleged correlation between the results of analyses made by it and the crops produced on the corresponding soils. We know now that the zeolitic theory and the alleged uniform correlations just mentioned are, to the scientific mind of today, wholly untenable. The facts and objections which are used in support of such assumptions and correlations may be explained very easily in other ways. Today, therefore, as contrasted with a decade ago, there are but few soil chemists who can see any value, practical or scientific, in the maintenance of a strong acid digestion method for soil analysis and as a means of indicating the crop producing power of soils.

In other words, the modern soil chemist can no longer see the cogency of methods which are wholly established on assumptions of questionable value. He cannot, in the light of modern chemistry, discern the utility, for none seems to him to exist, of the determination of a certain portion, arbitrarily delimited, of the total mineral constituents in soils. On the other hand, the methods of water extraction of soils, which a decade ago were considered by most soil chemists as wholly questionable in value to soil chemistry and soil fertility studies, are now, in conjunction with the most modern studies on the soil solution, coming to assume a position of great importance in our work. Their use may be said to be very wide, if not general, and the laws of mass action and chemical equilibrium are always had in view when applications of these methods are made. Unfortunately, the soil solution is so complex a medium as to make impossible, as yet, any quantitative application of the laws just mentioned. Nevertheless, it does make possible the explanation of much that in recent years has seemed very mysterious, and, in a qualitative way, is casting much light upon hitherto very much vexed problems.

As another example of the striking metamorphosis through which soil chemistry has passed within the last few years, we may take the soil acidity question. Not more than five years ago, soil chemists almost without exception believed in one of two theories on the origin of acidity of soils. The first was the very old theory that acidity was produced through the formation in the soil of organic acids of a large variety by the decomposition of organic matter therein. The other

theory, which was a relatively new one, consisted in the idea that soil acidity was produced by a lack of bases to satisfy so-called unsaturated silicates with the necessary base, or with the base necessary for full saturation, and hence blue litmus paper applied to soils containing such silicates must turn red without necessarily indicating the existence of free acidity. In the last five years, we have learned to consider both of these views and to evaluate them properly. We have now in hand indisputable evidence that soil acidity means nothing more nor less than an actual excess of hydrogen over hydroxylion. The distinction which even the most modern authors of textbooks on soils insist on drawing between positive and negative acidity seems to be both futile and sterile. Viewed either from the scientific or practical standpoint, soil acidity must be regarded as a condition produced by an excess of acid over base. Whether we have free acidity in the form of sulphuric acid, or oxalic acid, or carbonic acid, or some other free acid, or whether we have acid salts like the acid silicates, to which reference is made above, an excess of hydrogen ion exists in the soil solution and gives all the reactions in the laboratory and all the effects in the field which the reddening of blue litmus paper as a qualitative test indicates.

When summed up, the following points come clearly before us:

The total content of the soil in minerals containing the elements which are essential to plants gives little or no indication as to the value of a given soil for crop production.

We can no longer regard an element or compound as being available to plant roots merely because it is dissolved in the soil solution.

The reactions caused by salts in the soil solution are of equal moment with those which may be induced therein through the solvent powers of acids. Indeed, we recognize no fundamental difference between the two.

The available plant food elements in the soil solution must be measured by some method which accords more closely with the natural conditions under which plant food elements are rendered available in the soil solution than any method heretofore employed does.

Application of the laws of mass action and of chemical equilibrium in the soil solution makes it possible for us to conceive for the first time, with some measure of clearness, the laws regulating the solution of various phosphates in the soil, as well as of many other substances which are of vital importance to the plant.

The total concentration of the medium of growth, as has been recently demonstrated, is one of the important factors to consider in connection with the soil solution in our crop producing soils.

In addition, the proper balance between the nutrient elements or between the salts in a medium in general, has been clearly demonstrated to be of the highest importance in a proper comprehension of the problem of the growth of plants in solution.

These conceptions make possible a much more rational approach to the study of the alkali problem in soils and clarify much in this problem which heretofore has been extremely puzzling.

Colloids of the soil as a factor in regulating the concentration of the soil solution, both by natural and artificial means, have come to be properly appreciated only within the last five or six years.

The nature of soil acidity and the methods for its determination, as above outlined, form a part of the new contributions of modern soil chemistry.

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Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

## MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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## PEAR PRICES

The California Pear Growers' Association announces today the fixing of a price for Bartlett pears for canning purposes for this season. The price set is \$70 a ton for what is known as No. 1 pears of high quality, but at this price certain deductions will be made to canners for freight charges to nearest canneries, making the f. o. b. price at growers shipping point from \$1.50 to \$4.00, or upward, less than the \$70 a ton. Contra Costa pears, for instance, would bring the grower about \$68.50 per ton, and pears from districts more remote from the nearest cannery would bring less. A No. 1 pear is at least two and one-quarter inches in diameter, and is one that is free from scale, worms or pear-scab. A very high grade of pear is used for canning.

The price determined upon is the result of a careful investigation of the cost of growing. Years ago growers could sell pears at \$35 a ton and make a profit, but these were the days when farm labor could be obtained at from \$1.00 to \$1.50 a day, without board. In these days of labor shortage, from \$3.00 to \$4.00 is being paid. In recent years continuous and skilful work is necessary to preserve a pear orchard from disease. Between the years 1900 and 1910 half the pear orchards of California perished or were dug out on account of disease, at a loss to growers of millions of dollars. At the present time, frequently as high as \$75 an acre is paid for spray materials alone, besides the cost of applying the spray, which sometimes adds \$35 an acre, making a cost for merely spraying the orchard six or seven times over \$100 an acre. Expensive tractors are supplanting the old fashioned horse. Motor trucks haul the pears to the railroad. In 1916, when labor and material expense were still low canneries paid \$50 to \$52 a ton. The price this year represents an advance of about 36 per cent.

Last year nearly 4800 carloads of fresh pears were shipped East, many growers netting from a minimum of \$60 a ton to a maximum of \$83 a ton, the latter figure being realized by Frank T. Swett, president of the Pear Growers' Association.

This season the crop, according to careful estimates by the state horticultural commission, is at least 10,000 to 12,000 tons short of last season. While there is a strong tendency among growers to ship the bulk of their pears East as prices bid fair to even exceed considerably last year's prices, the Pear Growers' Association is calling on members to deliver 20 per cent at least of their tonnage for cannery purposes, as the association desires to see the canning of pears maintained as nearly normal as possible.

Were it not for the association, it is probable that the great bulk of all pears would move to Eastern markets, leaving very few for the canners. The association, however, believes that the ultimate good of the pear industry is dependent on keeping the pear, in all its forms, fresh, canned and dried, before the consumer. The acreage of pears in California is rapidly increasing, and possibly ten years from now, if the orchards can be maintained against the attacks of pear blight and thrips, instead of 80,000 tons of pears, there will be produced 250,000 tons of pears annually, making pear production one of the really big industries of California.

## ARGENTINE ANT GIVES AID AND COMFORT TO ORANGE ENEMIES

The chief importance of the Argentine ant in orange groves is due to the fact that certain injurious scale insects become much more abundant as the result of its presence and that it fosters mealy bugs and aphids, according to Farmers' Bulletin 928, "Control of the Argentine Ant in Orange Groves," by J. R. Horton, published by the United States department of agriculture. This ant is very

fond of the sweet substance known as honeydew excreted by mealy bugs and other soft scales and is always very attentive to them and prevents many of their insect enemies from approaching them. Thus the natural enemies of these pests are hindered in carrying on their good work, and as a result some of the soft scales become excessively abundant.

The armored scales, of which there are several that feed upon orange trees, are not protected by the ant; but in patrolling the trees constantly in large numbers in search of insect prey the ant hinders, to a certain extent, the work of the natural enemies of this class of scales. The ants also eat all insects that they can capture except those supplying honeydew, and therefore they disturb certain enemies of the armored scales and perhaps occasionally feed on the eggs of some of them.

## Control Measures

In Louisiana, where the Argentine

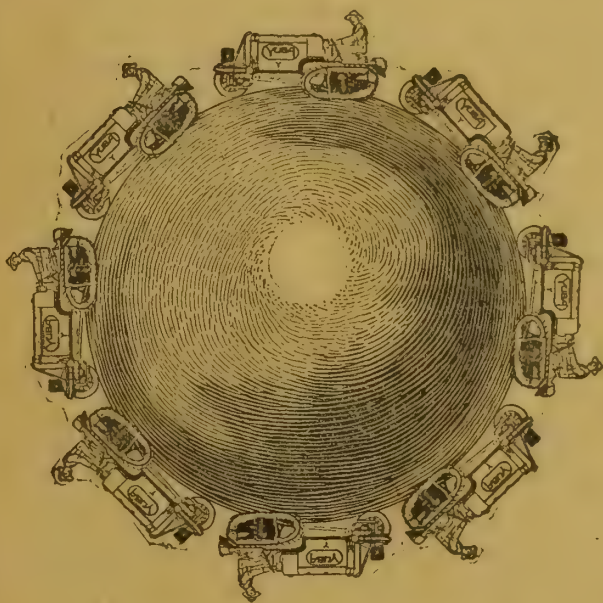
ant was introduced a quarter of a century ago, the preventive measures are: A general improvement in orchard cultural practices, including the control of such orchard pests as the armored scales, the white fly, and the rust mite; direct measures for the destruction of the ant colonies by the use of traps. By far the best and most practical means of destroying the ant in Louisiana is by trapping. It is the only method adapted to ant destruction in large groves and can be used equally well with a few trees. The trapping method is based on the fact that the ants can be induced to concentrate in artificial nests to avoid rain, and can there be conveniently killed by fumigation. The successful orange growers find that a number of small traps, usually 25 per 100 trees, is preferred to a smaller number of large ones. In order to induce more rapid concentration of the ant colonies

in the traps, the orchard as far as possible should be kept free from suitable natural nesting places such as loose boards, piles of branches or weeds or any other rubbish.

## Use of Poisoned Baits

In some cases poisoned syrups and other baits have proved successful in controlling the ants. When this method is used it is desirable that all sources of food other than the poisoned bait be eliminated so far as possible.

In Louisiana orange groves the extensive use of adhesive and other repellent mixtures for banding tree trunks to keep out ants is not recommended in view of the more positive method of destroying them by trapping; but in the citrus fruit sections of California this method is more generally and successfully employed, and the ants are reduced in numbers by the use of poisoned syrups. In California the armored scales are controlled by standardized methods of fumigation, and regular cultivation is more generally practiced than in Louisiana.



# Yuba success turns on the ball



THE ENDLESS TRACK runs on two sets of enlarged ball bearings, with friction reduced to a minimum. The weight of the machine and the wear of its motion are borne by the steel balls. They run in a cast-steel ball race, over the manganese tread links lying on the ground. There's no slack chain to pull, the power generated by the engine is centered at the draw-bar.

The large steel balls used in the Yuba Ball Tread Tractor are the "good roads" of tractordom.

The steel balls are 2 1/4 inches in diameter, each being capable of carrying 90,000 pounds without damage.

Friction is reduced to a minimum by the use of high duty roller bearings, cut gears

of high-grade steel having a special tooth shape, to aid in reducing the loss of power still further.

Please tell us the number of acres you have, and the kind of operations.

In the 20-35 the bearing area of treads is 1,680 square inches. The pressure on the ground due to the weight of the tractor is less than five pounds to the square inch.

The width of the tread is 17 1/2 inches; speed at low gear is 2.06 miles; at high gear, 3.28 miles an hour. The draw-bar rating is 20 H. P.; the maximum sustained pull is 5,000 pounds. The power as a stationary plant is 35 H. P. The total weight is 10,250 pounds. Carries 38 gallons distillate and 7 gallons gasoline.

*The sum of all these things means for you a better farming implement, deeper plowing, more thorough cultivation, at the right time, at less cost.*



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Department B

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Model 20-35  
Model 40-70



# Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

## Tanning Rabbit Hides

I would like to know how to prepare rabbit hides for market. Some that I have cured have lost the hair. What is the best way to do it?—Subscriber, Spring Valley.

When skins are ready wash them in solution of one-half tub luke warm water to which has been added one-half bar of common laundry soap, one pound of sal soda, one-quarter pound of concentrated lye and one ounce of liquid ammonia. This removes the glue from the pelt. Then mix in five gallons of water three and one-half tablespoons of common salt. When salt is dissolved in the water stir in two ounces of sulphuric acid

(liquid). Do not inhale fumes of acid when mixing. Mix this in wooden tub. Put hides in brine and let them stay covered with the brine from six to 20 days. To tell when to remove, stretch skin over knuckles, and if white like rawhide take out; if not let them stay in longer. When tanned take out, wring out and hang on line till nearly dry, then pull and stretch over edge of hardwood board in all directions. Do not let them dry too fast. Do part of this each day, rolling up skin between times. Wash hide in gasoline to clean, rubbing well with starch, then dry fur with corn starch or Fullers earth. Shake out starch or earth when dry, and then skin is ready to use. If work has been properly done results will be satisfactory.—W. D. W.

## Breeding Rabbits

Will you please tell me what is wrong with my rabbits. The buck serves them but they don't bring any young.—Subscriber, Laverne.

Take doe to buck's hutch. Let buck serve doe twice. Test him with several different does. If no results get rid of him. A good fat buck often makes a good roast. See our issue of April 27, page 545 for similar instructions under heading "Barrenness in Rabbits."—W. D. W.

## Fruit Thieves

I note in news notes that Fullerton and other Orange County sections are to deal with those who are stealing their oranges in a way to prevent these depredations. Please tell us how best to deal with this question. Porterville growers suffer greatly, and our loss during the past year has been very pronounced.—Subscriber, Tulare County.

The only method which will prove satisfactory is that tried in Pomona a few years ago. Watchmen were deputized to patrol certain sections where the thievery had been prevalent, and arrests were made and severe fines imposed. Any community which has a justice of the peace who will do his duty may soon control this evil. If, however, amongst the first who are caught in the net are some youngsters of the "first families of the state," and a floater is imposed, then the evil will only be encouraged.

## Die Back

I am sending branches from the tips of my orange trees. Orchard has been well cultivated and irrigated, yet the tips are continuing to die back.—Subscriber, Bakersfield.

This die back, or dying back of the tips, is generally considered to be something like chlorosis, or yellowing of the leaves of an orange tree. That is, it is a general indication of disease or of a physical condition which may come from several causes. There is a disease known as citrus blast which

was fully described in the Cultivator of March 30, 1918, page 388. That disease makes the tree somewhat resemble those from which these branches were taken, but we do not think this disease is in Kern County. The only suggestions for treatment are most general. In the first place, look to the soil. Is it light and loose so as to allow air access to the roots? If not, lightening up with coarse strawy manure and lime may prove beneficial. On the other hand, perhaps drainage is necessary. Irrigate so that the very lowest depth to which the roots go is reached by the water. In other words, put the soil and tree in best of physical condition.

## Poisoning Squirrels

How can I get rid of squirrels at this time of year? I have tried many methods but none have been satisfactory.—Subscriber, Long Beach.

It is possible that the ground is a little dry to secure best results with carbon bisulphide, kilmol or other gas treatment, still thousands may be killed if the holes are well filled and packed. With all feed drying up excellent results may be had by the use of poisoned watermelon rind or juicy fruits. A bit of strychnine inserted with point of knife in watermelon rind and fruits does the trick. The poisoned grain formula, which was given in the Cultivator of January 26, page 109, is good at all times.

## Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

## Storm Water

The storm water and irrigating water from several orange groves in this vicinity, according to the slope of the land, may be run into a main wash which is the natural water course, but for five or six years it has been diverted and has run across groves lower down. These lower growers object, claiming that the water should be run only in the wash. Is this objection good?—Subscriber, Covina.

The owner of a lower tract cannot object to the passage of surface water from a higher tract, which has become accustomed by natural flow to pass over his land, but this does not apply to surface water turned on the lower owners by artificial changes made by those owning land above them. Where water by such artificial changes is made to flow upon the lands of another which would not naturally flow thereon it is an injury to his right of property and a nuisance per se, the continuance of which he has a right to have enjoined.

## Trespassing Stock

Where trespassing stock is causing an injury, and it is desirable to impound such stock to prevent further damage, how may one proceed so as to be protected from loss in the costs of feeding? If notice is to be given, what is the legal form? Should it be recorded? If owner is unknown then how is notice given?—Subscriber, Los Angeles.

The person taking up an estray animal shall confine it in a secure place and within five days file with the county recorder of the county in which the estray is found a notice containing a description of the animal, with the marks and brands, if any, stating the probable value of each animal, place where the taker-up found the animal, and where it is confined; date the notice and sign his name. The county recorder is entitled to a fee

of 50 cents for recording the notice. If the value of the animal or animals together exceeds \$10, the notice must also be published in a paper of general circulation in the county at least once a week for three successive weeks, stating the time when the animal or animals will be delivered to the constable. Or, if the finder knows the owner or keeper of the animals, then within five days after the animal is taken up he shall notify such owner or keeper of the animal, which notice shall contain the same information as that heretofore described; in such instance it is, not necessary to record, but the finder is entitled to his fee of 50 cents for serving the notice personally upon such owner or keeper.

At any time within 30 days from the date of filing the notice or the service thereof, as the case may be, any person demanding possession of the animal may appear and pay the taker-up all damages, expenses and costs, and upon receiving such payment the taker-up shall immediately deliver to the person claiming the animals the possession thereof. Such payment is made up of the following items:

The recorder's fees: Fees for publication of notice, attorney's fee for preparing the notice not to exceed \$2.50; 50 cents per day for the keeping of each horse, mule, jenny, ass, cow, bull, ox, steer, or calf; 15 cents per day for every other animal; if the taker-up fails to properly feed and water the animals while in his care, he loses his right of lien.

If the claimant is dissatisfied with the fees claimed, he must tender the amount he is willing to pay and within ten days bring suit in the proper court for possession, where he must establish his right to possession; in case the amount tendered was correct and plaintiff is entitled to his costs of action from the taker-up, possession shall not be delivered until the amount adjudged due is paid to the taker-up; in case the taker-up is successful he is entitled to his costs.

If no one appears and pays or tenders the expenses of the taker-up within the 30 days after recording of notice, or fails to commence the action before mentioned, the taker-up shall notify the constable of the township, or sheriff of the county where the animals are held, which notice shall specify that he has complied with the provisions of the "Act relating to estrays, etc." that no claimant has appeared, or, if he has appeared, that he has failed to pay the expenses and costs and has failed to commence the action, or that the action has been dismissed, and that the animals are held subject to sale. The constable shall immediately proceed to sell the animals at public sale as he sells personal property upon execution. Out of the money realized the officer first retains his fees, then pays the taker-up his expenses and costs to date, and the surplus, if any, into the county treasury. Such sale conveys good and perfect title to the purchaser. If the taker-up uses reasonable care of the animals he is not liable for the death or injury of any while in his possession.

## Bee Keeping Law

I have understood that according to the state law bees cannot be kept within three miles of another man's apiary, even though upon the keeper's own property. Is this correct?—Subscriber H. E. S.

The only law concerning bees and their keeping is contained in an act concerning "foul-brood." This act provides that upon petition to the board of supervisors by ten or more

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meets the requirements of the rancher and is within easy reach of all.

Ask your dealer about it, or send direct to factory.

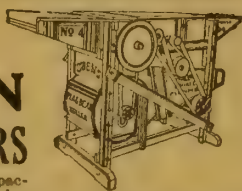
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resident, property owning, apiary keepers, the board may appoint a skilled bee keeper as county inspector. Such inspector may inspect every apiary in the county and wherever he finds any infected with foul-brood or other contagious or infectious diseases may order them destroyed as a nuisance. The inspector may also, in his discretion, order the owner or person in charge of bees infected with foul-brood, or any person within a radius of three miles of such infected brood, to transfer their bees, and in default of such transfer may order the bees, combs and hives destroyed. A law applicable only to San Bernardino County provides that any owner of 20 hives of bees is entitled to sue for and recover from the owner of any hive of bees which is infected with a contagious disease, who after ten days' notice fails to apply a remedy therefor, the sum of \$2.50 for each hive so diseased.

ANOTHER LIVE STOCK SHOW

The California International Live-stock Corporation has established headquarters on the ground floor of the Merchants Exchange Building, San Francisco, and is busy preparing for their first annual exhibition to be held in San Francisco, November 2 to 10 next.

An executive board has been appointed as follows: W. T. Sesnon, chairman; Edgar J. De Pue, M. H. Esberg, R. B. Hale, C. K. McIntosh, Vanderlynn Stow and F. L. Washburn, while Joseph E. Painter, well known live stock man, is manager of the corporation.

A preliminary classification and premium list is now being compiled, the classification committee consisting of L. F. Washburn, chairman; L. A. Nares, A. W. Foster, H. H. Gable, C. B. Cunningham, James Henderson, Dean H. E. Van Norman, H. A. Jastro, M. H. Tichenor and Jose E. Painter.

About \$30,000 in premiums will be awarded, and the national breed associations have offered through their secretaries special prizes for the various breeds. Communications have been received from many of the live stock associations, expressing their willingness to assist in every way possible. From present indications the show to be held this fall will be a huge success and the forerunner of future annual events.

Letters of inquiry are already being received from exhibitors in states as far east as Kansas, and there seems little reason to doubt, when the entries are finally made, that every available foot of space will be occupied.

NAIL IT ON THE SHOP DOOR

It too frequently happens that in going to the hardware store to purchase nails we find ourselves in doubt as to what size we want. Nails are usually sold by the pound and according to the "penny." For example, a 10d nail is 3 inches long and .15 of an inch in diameter. The following table gives information on the different common nails. Remember that brands differ from common nails only in the head and point.

Size	Length in Inches	Diam. in Inches	Nearest B. & S. Gauge	No. to the Pound
2 d	1	.07	13	876
3 d	1 1/4	.08	12	568
4 d	1 1/2	.10	10	316
5 d	1 3/4	.10	10	271
6 d	2	.11	9	181
7 d	2 1/4	.11	9	161
8 d	2 1/2	.13	8	106
9 d	2 3/4	.13	8	96
10 d	3	.15	7	60
12 d	3 1/4	.15	7	63
16 d	3 1/2	.1	6	49
20 d	4	.16	6	31
30 d	4 1/2	.21	4	24
40 d	5	.23	3	18
50 d	5 1/2	.24	2	14
60 d	6	.26	2	11

Frank P. Goeder, Colorado Agricultural College, Fort Collins, Colorado.

BEE NOTES

The amount of honey required to make up the "minimum" car under new traffic regulations is 450 cases, which is about 30 tons.

Less than half of the bee keepers of California have signed up with the cooperative marketing association, the California Bee Keepers' Exchange. This is to be regretted, for the only way of securing full return from any product is for its producers to be in a position to command rather than simply to accept the offers of the well organized buyers.

Mr. Mendleson of Ventura County reports the season has been so cool that queen rearing has been almost impossible.

California produced nearly 400 cars of orange blossom honey. It commanded 20 and 21 cents f. o. b. local shipping stations, record prices so far as California honey is concerned. Yellow beeswax is now commanding 41 to 43 cents.

SAVE THE HONEY

With present and future shortage of sugar both considered there is every encouragement to the honey producer to save every pound he can. Prices are entirely satisfactory, and the honey makers are finding this a most profitable year. California extracted honey is selling in England well up toward 50 cents per pound. It is rumored that the food administration may fix the California price around 16 or 18 cents, but with quick sales there is still opportunity of profit for the honey producer notwithstanding the fact that cost of production has increased nearly 100 per cent.

BOOSTING THE BEE BUSINESS

Production of honey will be greatly increased during 1918 in many localities, according to reports received from extension workers of the United States department of agriculture. The increase in Colorado this year will probably be 100 per cent, it is said. In many localities there has been a marked increase in winter protection, and the bees passed the cold season and were ready to begin work of gathering nectar as soon as the weather permitted.

NEW PEA

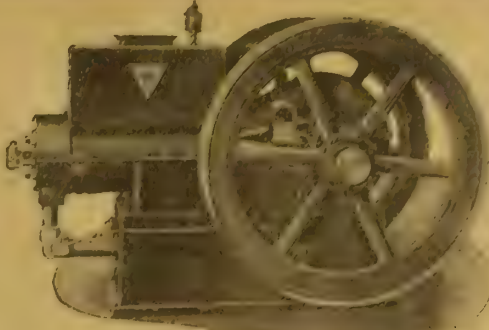
John C. Sullivan, a Napa County subscriber, sends a package of peas which should be exceptionally valuable for forage or for green manure crop. Mr. Sullivan says:

"On the driest ground these peas will produce an immense crop without irrigation. These peas stool out and when planted in rows 2 1/2 feet apart one way and 10 or 12 inches the other, three peas to a hill, will completely cover the ground. Frost does not injure them. I think they would make a fine cover crop."

A GOOD FAIR

A subscriber at Mesa Grande, San Diego County, writes regarding last year's Riverside fair and says: "This fair was so well managed last year that many from this county will attend this year." He thinks every live stock producer should exhibit at the fair for no other means affords opportunity for such information as a comparison of live stock which is possible at a county fair. Above all, the owners of pure bred should keep their live stock recorded.

Uncle Sam is today the quartermaster of a hungry world. He is playing the game squarely and counts on every American to do the same.



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IT PAYS to invest in ALPHA QUALITY—quality which provides ample reserve in every part for hard, continuous service. Power to stand up under abnormal strain. The Alpha meets with ease and certainty the grinding demands of every day service year in and year out—a constant source of gratification to their owners.

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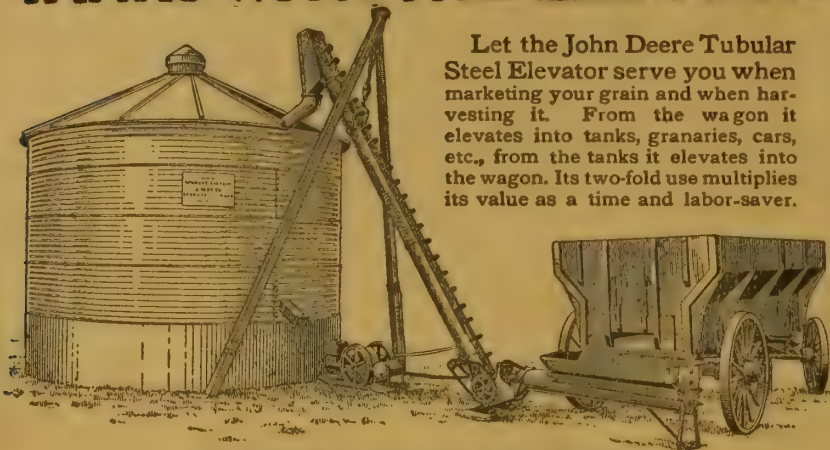
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Let the John Deere Tubular Steel Elevator serve you when marketing your grain and when harvesting it. From the wagon it elevates into tanks, granaries, cars, etc., from the tanks it elevates into the wagon. Its two-fold use multiplies its value as a time and labor-saver.

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Built of steel it cannot warp or decay—will last for years. Elevator proper made of ¾ in. steel well-casing, 6½ in. in diameter. Absolutely will not sag.

Portable outfit furnished for large ranches where quick transportation is required.

Let a John Deere Elevator pay for itself with the money it saves in time, labor and sacks. See your John Deere dealer. Act now. Shipments made from stocks at Portland, Spokane, Boise and San Francisco.

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Does your belt separate in the plies?

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Bushings

Ring Oiling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.



## New Asparagus Strain Rout "Rust" Disease

Ten years of introducing, testing and hybridizing asparagus from all parts of the world by J. B. Norton, a plant breeder in the United States department of agriculture, has resulted in the development of a new strain of asparagus that is not only larger, more uniform, and more productive than the old varieties, but is highly disease-resistant, a virtue that American asparagus heretofore has lacked. Development of the new strain is expected eventually to stamp out the "rust," a destructive disease that swept over the country a few years ago, leaving the asparagus fields brown and dead and wiping out the profits of the growers. Commercial quantities of the new type in Washington, D. C., recently sold for more than double the price of other asparagus.

The new asparagus is "highly well born." Its parents were selected from many thousands, and were not only of outstanding quality, but possessed the power of transmitting their good qualities to their offspring. In asparagus there are male and female plants, the first producing only pollen, the latter seeds, when properly pollinated. Of all the thousands of plants grown, one male named Washington has proved superior. He has been mated to many seed plants, but the progeny of two stand out above the others. One named Martha Washington is the new kind mentioned in the

first paragraph; the other, Mary Washington, promises to excel her sister family.

The method of pedigree breeding for better asparagus is expected to mean further improvements in future years when the disease is forgotten. The asparagus rust, in fact, is passing away, and the government plant doctors point to this as one of the most encouraging features of the work, as it indicates a possibility of overcoming other plant diseases through the substitution of resistant for susceptible varieties.

### Hope to Rout Disease

In the beginning of the outbreak asparagus rust was harbored and spread from every susceptible plantation. These centers of infection diminished as the old beds were killed or plowed up and replaced by semi-resistant stock, until wherever the old susceptible kinds are entirely exterminated the disease no longer prevails to any extent. In some sections, however, this replacement is not complete. Old fields abandoned by growers or plants growing wild along the roadside act as centers of infection and spread rust to cultivated fields near by. Elimination of the most susceptible varieties is very important. If this is accomplished there is reason to hope that the complete substitution of the new varieties for the old will result in partial or entire disappearance of the disease.

## Cutworms

Vegetable growers are now able to secure direct aid from the department of agriculture for their gardens and truck farms. A special field agent has been located at 800 North Marguerita Avenue, Alhambra for some months and is at the command of the growers to investigate insect control problems. "Garden Cutworms," a circular giving illustrations, life habits and general information regarding these pests is now being mailed. Control measures recommended are here given:

### How to Control Cutworms

Cutworms are not at all difficult to control, and there are several methods by which this may be accomplished. The best, however, is the poisoned bait or poisoned bran mash. The following formula is for use in a small garden:

One-quarter pound white arsenic, one pint syrup or molasses, four to six quarts water, one peck dry bran.

Thoroughly mix the arsenic in a peck of dry bran. Stir into four to six quarts of water, a pint of cheap syrup or molasses. After this has been made up into a mash let it stand for several hours to allow the bran to take up the arsenic.

Other powdered arsenicals, such as arsenate of lead, may be substituted if double the amount is employed. Dry Paris green may be used at the same rate as the arsenic. Arsenic is preferable, however, because cheaper.

Scatter the mash thinly along the rows or about the bases of the plants to be protected as soon as the cutworms appear. It is better to make the application well toward evening, or at dusk, since the cutworms feed only at night or on dull, cloudy days, and the bait is more attractive when fresh. If the cutworms should reappear, repeat two or three times at short intervals.

A grasshopper bait substantially as above with the addition of chopped lemons or oranges has been recommended, and the addition of this fruit may increase the attractiveness to cutworms.

Caution—Keep children, live stock, and chickens away from the bait, as it is poisonous. With proper care there is no danger.

### Other Remedies

In the case of severe attack by cutworms on low-growing plants, such as parsley, a lead-arsenate spray applied as for other chewing insects, will answer nearly as well as the bait, especially where there is no time to prepare the latter and the outbreak is sudden and severe.

Clean cultural methods, crop rotation, deep fall plowing, and disking are valuable in preventing recurrences of cutworm attack.

Hand picking is also useful, and experienced growers frequently become so expert in detecting cutworms that they can easily remove them by hand. The principal method is to remove them by the fore finger. The operation frequently is all that is necessary for the control of cutworms on small areas.

### ARIZONA OVER TOP

So far as known Arizona has contributed more men and more money to the prosecution of the war than any other state in the Union, according to population.

Arizona has: sent all of her class one men to France or into training camps; subscribed 205 per cent of her quota in the third liberty loan and has more than doubled her quota in the second Red Cross war fund drive.

Measure your wheat savings by the Golden Rule.



## Milo

An Imperial Valley firm which wishes to encourage more general planting of milo sends to farmers a circular from which we take the following cultural instructions:

"Make your crop before you plant it," is an old saying which holds good in the case of these crops, especially when there is danger of water shortage during July and August.

Irrigate your land, then plow it. Irrigate again, then disk it.

Irrigate again, then harrow, float and plant it, and your corn will grow to head without any more attention on most land, or without any subsequent irrigation during July and August.

-You get the benefit of all the irrigation you put upon the land by capillary attraction through keeping the surface fine and compact by your last operation before planting.

Plant feterita in double rows or 24

inches apart, and dwarf milo 30 inches apart, using about five pounds to the acre.

Some claim better results from two pounds of seed to the acre and rows four feet apart, as the heads grow larger and gathering is consequently easier. However, for a maximum yield, it must be "crowded just a little."

## A Pig 'n Chicken Ranch

Written for California Cultivator By Jean A. Koethen



SO MANY chicken ranch failures have come in past years from the erroneous idea that poultry keeping is not a profession but a job to which any down-and-outer may turn as a last resort that it is always a pleasure to find a lad who deliberately sets himself to work to learn the business, not as a last resort but as a deliberate first choice. We have an increasing number of such boys today, and one of them is Gale Poulton of Gardena, a boy who at 17 years of age has nearly finished the agricultural course in Gardena High and has now taken over the management of his father's poultry ranch with additions of his own.

Gale believes that if chickens alone are good, pigs and chickens together are a better source of income, and so he has added to the 1800 hens and pullets on the ranch several breeding sows, one of them a full blooded Belted Hampshire, and a nice pen of young shoats (that is what they called them when I was a girl). The carrots and stock beets which are raised for the chickens do equally well for the pigs, with the addition of skim milk which he is able to buy at a neighboring creamery for three cents a gallon, and no grain is fed till two weeks before the pigs are marketed. They have the run of an alfalfa patch and are almost literally "in clover." As an example of the profit which can be made on pigs, Gale gave me these figures: He purchased two 40-pound pigs for \$9.00 and sold one of them five months later for \$20. As the feed and labor for both had cost but \$17.50 for the five months his profit on the deal amounted to 50 per cent.

The ranch covers three acres, all of which, except that used for the buildings, chicken yards and pig pens, is carefully planted to green feed. There is a good sized alfalfa patch, a plot of Sudan grass, several rows of carrots, which are cooked and fed in a moist mash to the laying hens, Swiss chard, mangel beets and half sugar beets. The last named are particularly economical because the tops grow again after several successive cuttings. The chard, beet tops and alfalfa are fed morning and evening in a trough along the front of the houses, and the allowance is never skimmed, for the Poultons, both father and son, realize that home-grown green feed, especially in these days of expensive grain, must be the center and foundation of all feeding.

The laying stock is housed in seven laying houses, each 24x18 feet and accommodating 200 hens. These laying houses are combined into three long houses. Mr. Poulton has tried the double yard system but found it a failure because even in a yard 35x180 the 200 hens consumed the green growth almost immediately. He has now reduced the yards to 24x35 and plans to reduce them still more by the use of the Charles Wicks house which he is now trying out. The one house of this type on the ranch is now used for young stock. The chicks are trans-

ferred to it when they are a month old, and because of the peculiar construction of the house, which is in sections eight feet square, with low overhanging eaves and east front and gives a maximum of protection, do well from this time on without heat. At first 75 chicks are put in an eight-foot section. As they grow they are culled to 30. When the pullets weigh three to three and one-half pounds the number is reduced to 25, and when they begin to make comb they are transferred to the laying houses. We saw pullets hatched in January well developed and apparently in full production in June and were told that these pullets do not, if carefully fed, stop laying to molt in the fall.

## STATE LEGHORN ASSOCIATION

With the number of Leghorns in California far greater than all other breeds combined the Leghorn breeders have never formed a state association. Other breeds have had their interests promoted by state and county associations, but Leghorn people have been too busy giving the little egg maker opportunity to do her bit or best.

There was a meeting held Friday evening, June 14, in Los Angeles when temporary organization was formed, to be known as the Leghorn Association of California, and committees were appointed to draft by-laws and report at a meeting to be held at Assembly Room, Los Angeles Times Building, First and Broadway, Los Angeles, Friday evening, July 12. A large attendance of those interested in the Leghorn breeds is desired.

Temporary officers were elected as follows: E. E. Emerson of Burbank, president; Mrs. E. B. Martin of Downey, secretary; Mr. Bogardus of Hollywood, first vice president; John Forney of Kingsburg, second vice president.

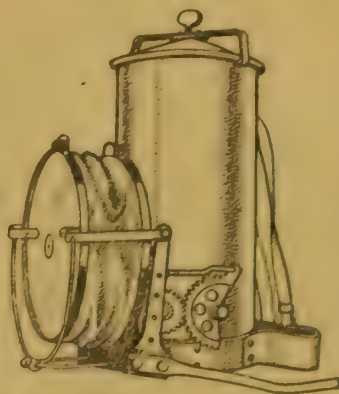
A committee on constitution and by-laws was appointed. The committee is as follows: Mrs. E. B. Martin, Downey; W. Z. Webster, Long Beach; Henry Kruckeberg, Los Angeles; Cornele G. Ross, Pomona, and Mr. Bogardus.

At a meeting of the advisory council of the National War Emergency Poultry Federation held in Chicago June 10-11 by-laws to govern the federation were completed and adopted. Permanent officers will be elected and the organization will be completed and greatly extended at the July meeting to be held in Chicago.

The plan of the federation contemplates taking in all national and state organizations having to do with the production or distribution of poultry products and supplies, but the by-laws are framed on such broad and liberal lines that any individual may become a member through his local, state or national organization. A strong effort will be made to enlist the support of every person, firm and corporation having to do with poultry, poultry products and supplies. Further information may be had by addressing Secretary H. V. Lewis, New Brunswick, New Jersey.

The San Bernardino County Poultry Association has been awarded the next annual State Poultry Show of the California State Poultry Breeders' Association. Other associations which sought to obtain sanction for the state show were, Fresno, San Jose and Los Angeles. F. E. Beardslee is president and E. D. Johnston, secretary of the San Bernardino club, and largely through their untiring efforts the show was awarded. Eighty fanciers, members of San Bernardino club, have been voted members of the State Poultry Breeders' Association.

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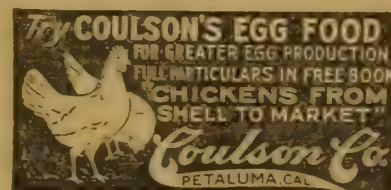
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**Want to Hear From Owner of farm or fruit ranch for sale.** O. O. MATTSON, St. Paul, Minnesota.

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**D. E. Kellher**—Importer and Breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of yearling Hampshire rams sired by Walnut Hill and Butterfield Rams, purchased at Salt Lake, August, 1916, also a few yearling ewes of same breeding. Inspection and correspondence invited.

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**Poland-Chinas**—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or L. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

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**Rancho Rubio Durocs**—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for \$25.00. Elmer Lamb, Ceres, California.

**Mule Foot Hogs**, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California. "The Blue Gums."

**For Sale**—Large smooth type registered Poland-China hogs. Brood sows, gilts, boars, pigs. Sunset Ranch, Pacoima, J. Frank Bowen, 712 Grant Bldg., Los Angeles.

**Duroc-Jerseys**—Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

**Large Yorkshires**—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

**Large Type Poland Chinas** are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

**Duroc-Jerseys**—We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

**Greenwood Farm Durocs**—"Size with Quality." H. C. Witherow, Palo Cedro, California.

**HEWITT'S BIG TYPE POLAND-CHINA** gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

**Registered Durocs of the big type**—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, California.

**Berkshires**—A few very fine March farrow pigs, sired by Fair Oaks Champion, Fair Oaks Ranch, Willits, California.

**Carruthers' Farm Berkshire Hogs**—Our herd won Premier Exhibitor prize at the P. F. I. E. Exposition, Mayfield, Cal.

**Poland-Chinas**—A few good breeding boars. S. F. Williams, Orland, Cal.

**BIG TYPE POLANDS**  
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**To Reduce the high cost of living**, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

**For Sale**—Stock feed. Carrots, fresh and good quality of 20 acre patch, \$9.00 per ton with tops, \$13.00 per ton without tops. All f. o. b. field. I. Tawa, R. F. D. No. 2, Los Angeles. Phone Boyle 3114.

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**To Make Your Garden Grow**, apply Morse's Pulverized Fertilizer and Mulcher—\$1.50 per barley sack. Write C. C. Morse & Co., Seedsman, San Francisco.

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**Will Exchange 160 Acres** improved eastern Kansas good land. Want small California ranch. J. B., 445 Lime avenue, Long Beach.



## POULTRY

**Fall Chicks For Sale**—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

**Our Annual Cockerel, pullet and hen sale,** 45 Eureka, Pasadena. 200-290 egg strain, 25 per cent-50 per cent off. 50c up. Leghorn, Wyandottes, Reds, Rocks, Anconas, Minorcas, Orpingtons, ducks, turkeys. Our early maturing winter layers develop rapidly into money makers. Hens clearing \$5.00 yearly. Chicks, thrice weekly 15c, 17c, 20c worth double. James Beeson, Pasadena.

**Mission Hatchery**—Chicks all July. Also booking orders for fall delivery. Large or small lots. Our specialties: R. I. Reds, White Plymouth Rocks, Black Minorcas, also choice strains White, Brown Leghorns. Large capacity, modern plant, means high quality, low prices, promptness. Send for circular. MISSION HATCHERY, Campbell, California.

**Eastman's Bred-to-Lay Barred Plymouth Rocks.** Hatching eggs. Fairmead Poultry Farm, Fairmead, California.

## POULTRY

**\$13.00 per 100 Barred Rox, Reds, B. Minorcas, White Leghorns \$9.00.** Terms \$2.00 with order, balance C. O. D. Ship Monday and Wednesday. A. G. Rowe, Inglewood, California.

**Black Orpingtons Lay, Weigh and Pay**—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

**Wanted 500 or more White Leghorn pullets.** February or March hatch preferred. Samuel Eyer, Tulare, California.

**Buff Orpingtons, Buff Ducks, Bourbon Red turkeys.** The Ferris Ranch, S. Reservoir, Pomona, California.

## RABBITS

**Go Into Business for Yourself**—Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

**A Fortune In Rabbits**—Have raised the price we will pay to \$8.00 per pair. Want you to raise them for us. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

**Special Sale**—30 head Flemish rabbits. Free list. Caldwell Rabbit Farm, Los Angeles.

**For Sale**—Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

dairy herd the individuals in the herd have become famous throughout the whole country through their many winnings in the greatest Western show rings, and in this way particularly have they demonstrated the pre-

potency of several families making up the herd.

There is no theory as to what might be done with these Jerseys; the herd and farm as they stand today are magnificent. Continued on Page 791

## Be One of The Lucky Buyers

AT

## THE LOCKE SALE

Lockeford, California

Saturday, July 6, 1918

70 Registered Jersey Cows in Milk

15 Unregistered Jersey Cows in Milk

43 Registered Jersey Bulls

EIGHTY-FIVE SPLENDID COWS, and only two blemished udders in the whole herd, and they are on two heifers that are producing enough to hold their own as profitable dairy cows. EMPRESS LASS, the great show cow and producer and VALET'S GOLDEN BIDDY OF L, likewise a great champion in the show ring and a producer at the pail, are only two of the many outstanding females in this sale.

The bull offering includes KING'S VALET IMP., BORELLO'S GOLDEN LADDIE, GRACE'S FOX OF VENADERA, and NORMA'S GERTIE SON OF L, the four Locke herd sires, and a large list of their sons out of the best cows in the herd. More than half the total number are of service age, and many are certain to go at bargain prices. The purchase of just one of these good bulls will repay any breeder or dairyman for the trip to attend this sale.

**CONDITIONS OF SALE**—Every animal positively guaranteed to be a breeder, is tuberculin tested and sold subject to tuberculin retest by the buyer, every animal pledged to absolute sale without reserve or limit.

LOCKEFORD is in San Joaquin County, 7½ miles east of Lodi. Parties from a distance would do well to secure hotel accommodations at Lodi, from which point an auto bus service will operate the morning of the sale.

**SALE WILL BEGIN PROMPTLY AT 9 O'CLOCK IN THE MORNING,** the early hour being necessary on account of the large number of cattle to sell in one day.

Catalog now ready. Write for one.

Management

## California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. D. L. Perry, Columbus, Ohio.

## Great Stock Sale at San Ardo

Written for California Cultivator By T. C. Mayhew

**T**HE live stock auction sale which the farm bureau of Monterey County held last Saturday at San Ardo was counted by everyone as a success. This sale is the first sale of cattle exclusively which has been held in California. Many hogs have been sold in this way but it remained for the Monterey County farm bureau to have the first cattle sale. It was demonstrated beyond a doubt that the auction system will operate successfully in regard to cattle, and that it is applicable to Monterey County.

The sale was conducted by J. H. Anlotzbehere and J. Rosenberg, who were assisted by W. J. Garthwaite, assistant farm adviser, acting for T. C. Mayhew, farm adviser for this county. Arthur Hebrun of Salinas was present and superintended the grading and weighing, and "Butch" Beevers acted as auctioneer.

Many of the packing houses on the coast were represented, but the bulk of the cattle went to Los Angeles. The cattle buyers were very eager to buy and wanted good stuff. The grade brought in is unfortunately far from being first class beef due to the shortage of feed last winter and was for that reason not wanted by the majority of the buyers. Several feeder buyers attended the sale also, but were unwilling to pay as much as the

beef buyers, their reason being that the cattle offered were not well bred enough to warrant feeding high priced feeds.

There were 140 animals sold, chiefly steers and cows, and the price ranged from \$5.50 to \$9.80, depending upon the grade and kind. The highest steers averaged \$92.20 per head, and the general average was \$75.79. In all the farm bureau sold \$10,610 worth of cattle at this sale. Everybody at the sale expressed himself as highly pleased with the results. The opinion was generally expressed that a higher price was received through the sale than could have been had on the range.

This first sale demonstrated that the auction sale system is a feasible and satisfactory method of marketing beef cattle, that buyers are eager to buy good stuff and to pay a good price for it, that it requires a high grade of beef to get competition among buyers and that feeder buyers want an animal with some breeding.

There were plenty of packing houses represented at the sale, and any number of good beef would have sold, but there were few of high enough grade. After all it was the lack of quality which kept the price from soaring. The packers want good beef, and the cattlemen of Monterey County will have to raise it for them if they would get the top price.

## Jersey Cattle Made Lockeford Stock Farm

Possibly no better example of what a dairyman may accomplish with the right kind of cattle can be found than the results secured at Lockeford Stock Farm, Lockeford, by the N. H. Locke Co. Some years ago N. H. Locke started with 70 acres of land and a small herd of grade Jersey cows that had been bred up from "Durham" or grade Shorthorn cows through the use of registered Jersey bulls. The purchase of a few registered females laid

the foundation for a purebred herd, and the increase from these registered cows gradually displaced the grade females in the herd. All this time the herd was operated as a commercial dairy, under ordinary dairy conditions, and was profitable as such. The profits enabled the owners to gradually acquire more land until Lockeford Stock Farm of today embraces several hundred acres of rich bottom land and upland. Besides making money as a

## 150 Head of Fine Jersey Cows and Heifers 150

## 7 Jersey Bulls

## TUBERCULIN TESTED

On the B. & F. Ranch, five miles east of El Monte on the El Monte and Covina Boulevard, three-quarters of mile west of

## BALDWIN PARK

We are instructed by the owners to dispose of this fine herd on above date to the highest bidders

## Positively Without Limit or Reserve

Monday, July 1, at 9 a.m.

And we also wish to call attention to the fact that this fine 87 acre ranch, with abundance of water and good pumping plant together with all buildings and exceptionally good dairy equipment is for lease.

Included in the cows are

## 35 Pure Bred Jerseys

either registered or eligible to be registered. We wish to call particular attention to the fact that nearly all of the cows in the sale were raised on the ranch and are sired by pure bred, registered Jersey bulls, one of which, Frances Victor, is by the great sire Gertie's Lad who has won more premiums than any other Jersey sire on the Pacific Coast. The dam as a two year old produced 467 pounds of butter in one year. The other sire carries a double cross of the World's Champion cow, Brown Bessie. There are 100 milkers in the herd, a number now fresh and giving large quantities of milk, others coming in soon. All are large, young Jersey cows with plenty of type and conformation. There are also six high class Holsteins in the herd. The average test is 5.3: 40 head of fine heifers, sired by the registered sires and out of the best cows in the herd. They range from 10 to 24 months old. Twelve head of heifer calves. This wonderful herd represents the efforts of years of constructive breeding. The herd has been carefully culled and nothing retained that could not show a profit. Seven head of extra good, well bred Jersey bulls including the two above mentioned.

This sale will offer buyers an opportunity to secure the best in Jerseys; don't fail to attend it.

**EASY TERMS:** \$100 and under cash, over \$100, one-third cash, balance in 12 monthly payments with approved note and eight per cent interest. Liberal discount for cash on time sums.

B. &amp; F. Ranch Company, owners.

## RHOADES &amp; RHOADES, Auctioneers

1505 So. Main St., Los Angeles, Cal.

## CALIFORNIA CHAMPION HAMPSHIRE

As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

L. A. DENKER

Boquet Canyon

Saugus, Cal.



Valet's Golden Biddy of L.





## SANTA ANITA RANCHO

Anoakia Breeding Farm

### Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

### Mammoth Jacks

We have for sale a number of two and three year old Jacks, big, growthy fellows of exceptional breeding and quality.

### Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita

Calif.

W. H. Taylor, Supt.

# TAGUS

### Duroc Jersey Swine

Herd headed by California's Defender, Junior Champion at P. P. I. E. High class young boars for sale.

**Aberdeen Angus Cattle**  
Choice breeding animals for sale in season.

### Percheron Horses

From our stud of registered Percherons we offer young stallions with quality and substance. Also at times we offer fillies, colts, and mares. Write us your wants, or visit the farm.

### Pacific States Corp.

H. C. MERRITT, Jr., Manager  
Tulare, Cal.

## Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy

Perkins, Cal.

We are selling a hog that a farmer will want to buy at a price a farmer can afford to pay.

Write for illustrated booklet telling about our Berkshire herd and

**Star Leader**

## Field Notes from the Live Stock Men

Gotshall & Magruder, Ripon, found some cattle just to their liking in the fourth Sacramento sale, and were able to gather in some very choice granddaughters of King Segis from the McAlister consignment. Their purchases in this sale strengthen greatly the preponderance of King Segis-Pontiac Korndyke breeding already present in their herd.

R. L. Holmes, Modesto, added a number of choice individuals to his select herd of registered Holsteins, in the fourth Sacramento sale. Holmes has displayed unusually good judgment in buying, for a beginning breeder, and has apparently not been tempted to buy the less desirable animals because they were selling low.

E. J. Weldon, Sacramento, again becomes the owner of Ontario Blonde Pietje, for whom he paid \$1700 in the fourth Sacramento sale. Dr. Weldon owned her as a calf, but sold her, and now bought her back from McAlister & Son after she had made a 30 pound record in their hands as a junior four year old. She will be heard from again one of these days as she appears to have a most promising future.

R. C. Sturgeon, Tulare, made a ten strike when he bought the great young bull Segis Pontiac Abbekerk for \$3200 from the Morris consignment in the fourth Sacramento sale. This bull has the distinction of being the only bull in service in California today that is out of a 35 pound dam that made over 34 pounds butter in seven days at her previous freshening. Besides the remarkable records of his dam he has a rich pedigree far back on both sides, along lines that are being actively developed in some of the greatest herds in America. The addition of Segis Pontiac Abbekerk to the remarkable group of Holstein sires already in service in Tulare County marks another step in the progress that is working to bring the community into first place as a Holstein breeding center.

L. W. Bradsley, Tulare, secured an outstandingly good young herd sire in the fourth Sacramento sale, when he bought King Mead of Riverside 7th

from the Morris consignment. As indicated by his name he is sired by King Mead of Riverside, and is out of a 26.76 pound daughter of Changeling Butter Boy that made 16,571.1 pounds milk and 636.80 pounds butter in 316 days, and she in turn is out of a 30.54 pound daughter of Tidy Abbekerk Prince, thus making her 100 per cent the same blood as the 44.43 pound cow Changeling Tidy Abbekerk Wayne. This young sire has developed into one of the best individuals that ever went through a California sales ring, and his rich breeding adds still more quality to the great Holstein blood now present in Tulare County.

Vern L. Heath has leased the Wm. Watt Dairy at Napa and will furnish inspected milk to a high class trade. Heath bought a well selected bunch of registered Holsteins at the fourth Sacramento Sale and bought a number of good grades at the Wm. Watt sale on June 15.

The Price Record for a grade cow in Napa County was smashed to smithereens in the Wm. Watt sale on June 15 when a grade Holstein cow sold for \$252.50. She went to the Carson Indian School, Nevada, which institution also secured a number of the most desirable cows in the herd. Three Nevada men were present at the sale, two of them being buyers. Outside of their purchases the bulk of the cattle went to dairymen in Napa County. The cows sold fairly well, many of the grade Holsteins selling above \$125, but the bred heifers went at unexpectedly low prices, some very good ones going at \$55 to \$65. The Red Cross netted about \$200 from the sale of a pure bred Jersey bull calf donated by Frederick M. Johnson and a grade Holstein heifer calf donated by Wm. Watt. Col. Cy N. Clark of Modesto was the auctioneer, C. L. Hughes, Sacramento, sales manager.

E. E. Greenough of Merced writes that he has recently transferred to J. U. Simmons of Palo Alto the bull calf whose dam is Duchess of Lorina, a line bred Marigold Exile King cow who has produced nearly 300 pounds fat in the first six months of her lactation period. He has also just sold a calf to P. D. Mothorn of Healdsburg, and purchased a new herd bull who is a great grandson of Sophia 19th of Hood Farm, the world's champion dairy cow. Expects to line breed with him along with his Lorna's Exile King bull.

Leeman Dairy is gradually working in pure breds. Ralph Kilgore the manager purchased 11 head of registered animals at the fourth Sacramento sale.

More than 43 pounds of butter in seven days, over six pounds of butter a day, as much butter in one week as the average cow yields in 14 weeks. That's the record of this stately Holstein matron of the dairy world who goes by the name of Tietje Queen De Kol 2d 228996. Tietje finished a seven day official test with a production of 639.3 pounds of milk yielding 43.29 pounds of butter to her credit. She freshened at the age of four years, ten months, 26 days. She is the thirty-second purebred Holstein cow to enter the charmed circle of cows that have produced more than 40 pounds of butter in a week. Her sire is Sir Pontiac Korndyke 6th 66229; her dam is Tietje Queen De Kol 95772. This is the second daughter of Tietje Queen De Kol to make better than 42 pounds of butter in a week, and the dam herself has a 42 pound record, which makes this trio an exceptional family. Tietje Queen De Kol 2d was bred by W. L. Keyes, Deerfield, New York, and is now owned by A. C. Howe, New Hartford, New York.

## THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

## Caustic Balsam

IT HAS NO EQUAL

For — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Bolls, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for

Sore Throat  
Chest Cold  
Backache  
Neuralgia  
Sprains  
Strains  
Lumbago  
Sore Lungs  
Rheumatism  
and  
all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."

OTTO A. BEYER.  
Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet K.  
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

## PREVENT BLACKLEG

VACCINATE WITH

Blacklegoids

OR

Germ-Free Blackleg Vaccine

(Aggression)

WRITE FOR FREE BOOKLETS.

ANIMAL INDUSTRY DEPARTMENT OF  
PARKE, DAVIS & CO.  
DETROIT, MICH.

## Shorthorns

Bred for Range Purposes and of Pure Scotch Blood Lines. Show Herd won highest honors in 1917.

Visitors welcome — information cheerfully given.

**T. T. Miller**

So. Normandie St., Los Angeles, Cal.

## HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

### REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee. Careful attention given to mail orders.

**Whittier State School**

WHITTIER, CALIFORNIA

### The Papec Pneumatic

Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex — an all one piece stave silo. For particulars write

**Santa Fe Lumber Co.**

16 California St. San Francisco



Write for evidence from users and our Trial Offer. Ask your dealer for our FREE Cow Book. "Bulletin 52."

General Laboratories Madison, Wis. Dept 3136

## Retained After-birth

**ORD L. LEACHMAN**

AUCTIONEER

Live Stock Broker

Pure Bred Sales a Specialty

Phone 111M

Orland, California

When Writing Advertisers, Mention The Cultivator

## Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building  
San Francisco

CARRUTHERS FARMS  
Mayfield, Cal.

**Every Hog Is Wanted**  
Save All Yours By Giving Them Regularly

**Economy Powder**

Send for Free Sample and Stock Book

**Economy Hog & Cattle Powder Co.**

Hearst Bldg.

San Francisco, Cal.



Save Your Hogs

## Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY  
IT MAKES THEM FAT

**Hauser Packing Co.**

Los Angeles



## Hog Wallows

Some farmers favor hog wallows; others are strongly opposed to them. Filthy hog wallows are a constant source of disease. Hogs wallowing in or drinking contaminated water are likely to contract disease. However, there are many advantages to be derived from wallows. A cool bath is very soothing to a hog in hot weather. It cleans the scurf from the skin and protects the hogs from flies. Crude petroleum, sufficient to form a thin layer on top of the water, may be poured in the wallow about every ten days. One man in this state has a concrete hog wallow built so that he can drive his whole herd through it every two weeks. He has kept dis-

ease down in his herd and he carries upward of 1000 head. The concrete hog wallow should be located in a shady place and made so as to contain from eight to ten inches of water. A two-inch drain pipe should be placed in the bottom of the wallow to permit its being cleaned out. And do not forget to clean it out occasionally.

In many cases a farmer is not financially able to build a hog wallow or a dipping vat. In Arizona provide plenty of shade. Also apply the dip with a spray pump or sprinkling can, or else rub on every part of the body by means of a brush. Do not apply the dip stronger than directed.—W. E. Schneider, Swine Extension, Tucson, Arizona.

## Specializing on Berks

W. F. Sandercock, who is interested in some of the rich Natomas lands on the outskirts of Sacramento, conducting a campaign for making those Na-

convert and he has just secured some of Frank Brush's prize winning stock. We have always believed in centering on one breed so far as possible in



Three Aristocrats

Frank Kiesel and three of his favorite Berks recently installed on his Sacramento Ranch.

tomas lands famous as producers of famous Berkshires. He has not only secured fine foundation blood for his own ranch but is inducing others of that section to specialize on the Berkshire. Fred W. Kiesel is the latest

every community. Prospective buyers of pure bred stock are more liable to seek out an enthusiastic community of breeders than they are to go from place to place to find individual breeders.

## Ayrshire Breeders Lose Secretary

In the passing of Mr. Winslow, secretary of the National Ayrshire Breeders Association, America loses one of its pioneer dairymen. He was a charter member of the National Ayrshire Breeders' Association, organized in 1875, and was responsible for the incorporation of the association in 1886. He was elected secretary-treasurer in 1882 and has been annually re-elected since. For 35 years he has steered this association through stormy times until today it is out in

the clear and headed forward. Mr. Winslow was a keen breeder and his exhibits at St. Louis and other national expositions were always to be reckoned with.

Mr. Winslow for many years was president of the New England Agricultural Society. He was a member of the Vermont legislature in 1894-5 and secretary of the state board of agriculture. He was for many years president of the New England Ayrshire Club and the Vermont Ayrshire Club and prominent in town affairs.

## Jersey Record Breakers

In the last report of "Jerseys Breaking Records Everywhere" we note there are no California animals, but Washington does come to the front with:

Eminent's Foxy Belle 304982, owned by J. P. Graves, 14,920.6 pounds milk, 816.65 pounds fat, three years, 11 months old; Brooketta 294025, owned by Glendale Creamery Company, 14,139.5 pounds milk, 705.01 pounds fat, four years, three months; Maysie's Fern Lassie 290819, owned by J. P. Graves, 15,606.3 pounds milk, 803.06 pounds fat, four years, five months; The Owl's Golden Queen 275736, owned by E. L. Brewer, 14,226.8 pounds milk, 918.41 pounds fat, six years, eight months Genesta's

Duchess 266615, owned by J. P. Graves, 15,293.9 pounds milk, 901.79 pounds fat, 7 years, one month.

Most conspicuous among these records is that of The Owl's Golden Queen in the state of Washington. This state can be proud of three new records, one of which was broken twice within two months. The name of Genesta's Duchess is also added to the above list, to give deserved prominence to the great quintette of cows that have just finished yearly records for a total production 4164 pounds of fat, or an average of 832 pounds of fat. This average for five cows exceeds anything that has ever been recorded from one state within a similar period of time.

# APPLETON Silo Filler

## The best silo filler improvements ever made

—that's what you'll say when you find out about the new Appleton features that save time, labor and money. Thousands who have used the Appleton have proved that it does more and better work per hour than other silo fillers; that it is practically trouble-proof, is safe, requires the least power to run it; and stands up far longer. These facts are from the statements of actual users. Now the

new features make the Appleton the best value ever built.

Be sure you find out all about it.

SILOS

Appleton Silo Filler

## Free Color Catalog

fully describes and illustrates these big improvements; silo book also free if you want it. Write today.

W. C. Shaw Co., Dept. A, Stockton, Cal.

Double-type feed  
—one of the new features.



# HEREFORDS

## Herefords

H. H. Gable  
Esparto - California

Breeding Stock for Sale

## ALAMO HERD

(Founded by the Late Gov. Sparks)

## Registered Herefords

Herd and range bulls reasonable. Largest Hereford herd in California.

W. D. DUKE, Likely, Modoc Co., Cal.

## Bar N. Herefords

Anxiety and Beau Brummel Breeding

E. A. Noyes & Son

Sutter - California

## Hereford Farms

Geo. Watterson, Owner  
Bishop, Inyo County, Cal.

Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

## Buy Your Next Sire at HOLLYWOOD FARM

Herd of 300 head headed by

## Judge Segis



Judge Segis

25 of whose heifer daughters sold for an average of \$875 in a recent Syracuse sale. JUDGE SEGIS' first daughter to be tested at over five years of age made above 37 pounds butter in seven days, and his list of tested daughters justly bestows upon him the title of the best son of King Segis in service. Let us tell you what we have on hand, or in prospect.

Hollywood Farm F. S. Stimson, Owner  
Hollywood, Wash.

## Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, \$2145 cash awards. Write to

## M. Bassett

Hanford, Kings County, Cal.



## The Best is Good Enough for You PIGS BY NOTED SIRES

## DUROC JERSEYS

High Orion 221329, has a refused price of \$3,500; Great Wonder 180989, Grand Champion at Iowa; Giant Invincible 208823, heads Waltmeyers Iowa herd; King Orion Cherry 80765, first Junior Yearling, Indiana and Ohio; King of Orions 240249, highest priced pig ever sold; Model Crimson Wonder 181217 a noted prize winner. Russel's Model 205512, second place at Nebraska.

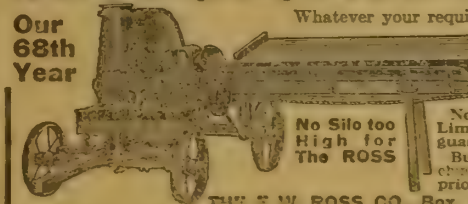
GET ONE OF THEIR PIGS

H. P. Slocum and Sons

Willows, California

## ROSS Low Speed SILO FILLERS Larger Capacity Less Power

Our 68th Year



Whatever your requirements are we have a size to suit, 4 H. P. and Larger.

We can show you The Ross will operate with Less Power and Less Speed and still produce Larger Capacity. Our selling plans make this possible.

No Limit to our Guarantee because there is No Limit to the ability of The Ross. Write your own guarantee if you please.

Buy now, Cost you Less. You can have the machine any time without cash investment in full prior to Silo Filling Time.

THE T. W. ROSS CO., Box 147, Springfield, Ohio. 68 Years' Experience  
Machinery and Repairs: Baker, Hamilton & Pacific Co., San Francisco; Dixon & Griswold, Los Angeles.



## Los Angeles Market

Los Angeles, June 26, 1918.

## BUTTER

Produce Exch. Quotations.  
Prices to trade 1½ to 2½c higher.  
California extra creamery .....45  
Dairy Exchange price past week on ex-  
tras.  
June 19 20 21 22 24 25  
'18 ... 43 43 43 43 43 45  
Rets. wk. ending June 25, 219,600 lbs.

## CHEESE

Brokers prices:  
California fresh, lb. ....24  
Eastern Daisies .....27  
Domestic Swiss .....38  
Oregon triplets .....26@26½

## EGGS

Exchange quotations. Prices to re-  
tailers 2 to 3 cents higher.  
Case Count .....38  
Fresh extras .....40½  
Pullets .....36  
Dairy Exchange prices past week on  
fresh extras.  
June 19 20 21 22 24 25  
'18 ... 39 39 39 39 39½ 40½  
Rets. wk. ending June 25, 1789 cases.

## POULTRY

We quote to producers.  
Broilers .....23@30  
Fryers .....30  
Hens, small, 19; heavy .....25  
Ducks, lb. ....22@25  
Roasters .....30  
Roosters, old .....15  
Turkeys .....25@35  
Geese, young, lb. ....22  
Rabbits, live, 17@18; dr. ....40

## LIVESTOCK

We quote cwt. f. o. b. L. A.  
Corrected Wednesday morning, June 26,  
by the Cudahy Company.

Cattle—  
Beef steers, av. 1000-1100 lbs.—11.50@12.00  
Heifers, good .....8.50@9.00  
Cows, good .....8.00@8.50  
Canners .....5.00@5.50

Hogs—  
Av. 125 lbs. ....15.50  
Av. 150 lbs. ....16.00  
Av. 175-225 lbs. ....16.50

Rough, docked 20 lbs.; piggy sows, 40  
lbs., stags, 40 per cent.  
Prime wethers .....11.00@11.50  
Ewes .....10.50@11.50  
Lambs .....14.50@15.00  
Yearlings .....11.00@11.50

## POTATOES

Wholesale selling prices:  
Northern .....1.80  
Idaho Russets .....1.80  
New, lug .....65@70  
Sweet, lug .....2.25

## ONIONS

Wholesale selling price, cwt.:  
Bermudas, cr. ....1.15  
Crystal Wax, 50-lb cr. ....1.50  
Garlic .....1.12

## VEGETABLES

Wholesale prices:  
Artichokes, doz. ....60@85  
Jerusalem, lb. ....7½  
Asparagus, lb. ....11@12  
Beans—Wax, lb. ....5@6  
Ky. Wonder .....7@7½  
Limas, lb. ....12@13  
Beets, sk. ....1.50  
Cabbage, lb., 1½; sk. ....1.25  
Carrots, doz. ....30  
Corn, sugar, lug .....1.00  
Cucumbers, lug .....90  
Egg Plant .....8@9  
Horseshoe, lb. ....15  
Lettuce, doz. ....45@50  
Leeks .....35  
Okra, lug .....1.75  
Mint, doz. ....40  
Onions, green, doz. ....25@30  
Peas, Tel., lb. ....10@11  
Peppers, Chili, lb., 14@15; Bell .....30  
Parsnips, doz. ....40  
Parsley, doz. ....40  
Radish, doz. ....30  
Rhubarb, C. W. bx, 1.15; Strawberry 1.30  
Romaine, doz. ....40  
Spinach, doz. ....30  
Squash—Summer, lug .....80  
Cream, lug. ....65  
Tomatoes, cr. ....1.65  
Turnips, doz. ....50  
Watercress, doz. ....35@40

## FRUITS

Wholesale prices:  
Apples, new, lb. ....6  
Apricots, lug .....1.75  
Bananas, lb. ....6½@7  
Cantaloupes—Ponies, cr. ....2.00  
Standards .....2.50  
Cherries, Black, lb. ....12@13  
Currants, cr. ....1.75  
Figs, bx. ....1.50  
Gooseberries, lb. ....12  
Loquats, lb. ....9  
Peaches, lug .....1.75  
Plums, lb. ....6  
Strawberries, tray .....1.10

## CITRUS

Lemons, packed, 8.50; loose .....7.00  
Juice .....5.00  
Oranges—Valencias .....6.75  
Grapefruit .....2.50@2.75

## DRIED FRUITS

Date for making contracts on 1918 crop  
postponed again by government order to  
July 15.

## BEANS

These are prices made by wholesaler to  
retailer.  
Lady Washington .....13.25

Limas .....13.75  
Pinks .....3.25  
Manchurian Reds .....8.75  
Baby Mex. ....9.25  
Garbanzos .....9.50@9.75  
Small Whites .....13.25  
Blackeyes .....8.75  
Tepary .....8.75@9.75  
Lentils .....24.75  
Mex. Red. ....8.75

## HONEY

Jobbers' prices:  
White extracted .....20@22  
Light amber extracted .....15@18  
Amber extracted .....10@11  
White comb, per case .....7.00  
Lt. amber comb, per case .....5.00@6.00  
Beeswax .....36@40

## HAY

Quotations by Nichols-Loomis Com-  
pany. Prices to growers f. o. b. L. A.  
Tame Oat .....26.00@28.00  
Volunteer Oat .....14.00@16.00  
Wheat .....23.00@26.00  
Barley .....23.00@26.00  
Alfalfa .....19.00@22.00

Quotations furnished by California  
Alfalfa Growers' Association, Riverside,  
California.  
f. o. b. L. A.; \$23.00 f. o. b. common ship-  
ping points, taking \$2.50 carload rate to  
destination.

## GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:  
No. 1 bright feed barley....\$2.60 Bld Asked  
Milo maize, local .....8.50  
Oat middlings .....36.00

## San Francisco Markets

San Francisco, June 25, 1918.

## BUTTER

The quotations on butter are on the  
basis of solid packed cubes. To ascer-  
tain the market price of butter in  
squares, add to the cubes basis price per  
pound as follows:

Two-pound squares, parchment wrap-  
per, ½c; 1-pound squares, parchment  
wrapped, 1c; 2-pound squares, in cartons,  
1½c to 2½c; 1-pound squares, in cartons,  
2c to 3c.

Dairy Exchange quotations, lb.:  
Extras .....47½  
Firsts .....46

Prices Extras past week and year ago.  
June 18 19 20 21 22 24  
'18 ... 47½ 47½ 47½ 47½ 47½ 47½  
'17 ... 36½ 37½ 37 36 37  
Rets. wk. ending June 24, 376,100 lbs.

## CHEESE

Dairy Exchange quotations:  
Cal. Flats .....23@25  
Cal. Y. Am. ....24½@25  
Ore. Y. Am. ....26  
Jack Cheese, full cream .....22@23

## EGGS

Dairy Exchange Quotations:  
Extras .....45  
Firsts .....40½  
Selected Pullets .....39  
Firsts .....38  
Prices Extra past wk. and yr. ago:  
June 18 19 20 21 22 24  
'18 ... 45 44 43 43½ 44½ 45  
'17 ... 32 32 37½ 30 30  
Rets. wk. ending June 24, 15,396 cases.

## POULTRY

We quote to producers, lb.:  
Large hens, 30@31; small, do. 29@30;  
broilers and fryers, ¾ to 1½ lbs., 32@35;  
1½ to 2 lbs., 33@38; 2 to 3 lbs., 38@45; old  
roosters, 19@20; ducks, lb., 22@28.  
Squabs, doz. ....2.50@4.00  
Belgian Hares, live, lb. ....16@18

## LIVESTOCK

Prices gross weight:  
Cattle: The following prices are for  
grass fed stock. Hay fed brings ½ to ¾  
more.  
Steers, lb., 10@12½; thin, 8@9; cows  
and heifers, 7½@8½; thin, 4½@6; calves,  
7@10½.

Sheep—Per lb. gross weight: Unshorn  
wethers, 11@12; ewes, 9½@10; lambs,  
yearlings, 11½@12; milk, 14@14½; shorn  
sheep, 1¾@2.  
Hogs—Hard grain-fed, weighing 100 to  
140 lbs., 15½; 140 to 300 lbs., 16; 300 to  
400 lbs., 15½.

## POTATOES

Wholesale selling prices at wharf, cwt.:  
River, new .....1.50@1.75  
Oregon .....1.35@1.50  
Garnets .....1.85@2.15

## ONIONS

Wholesale selling price on wharf, cwt.:  
Garlic, lb. ....3@4  
New Red, sk. ....1.15@1.25  
New Yellow, sk. ....1.00@1.15

## VEGETABLES

Wholesale selling price:  
Artichokes, doz. ....12½@30  
Asparagus, White, lb. 4@8; green, 3@5  
Beets, sk. ....75@1.00  
Beans, String, lb. ....6@7  
Beets, sk. ....1.50  
Cauliflower, doz. ....40@60  
Celery, cr. ....1.50@2.00  
Cucumbers, lug .....1.35@1.50  
Corn, green, doz. ....35@45  
Egg Plant, lb. ....8@10  
Lettuce, doz. ....25@30  
Onions, green, bx. ....65@75  
Parsnips, sk. ....85@1.00  
Okra, lb. ....12½@15

Peas, lb. ....6@7  
Peppers, Bell, lb., 10@25; Chili .....10@20  
Rhubarb, bx. ....1.25@1.50  
Squash, Summer, lug. ....75@1.00  
Italian, bx. ....50@60  
Spinach, cr. ....50@75  
Tomatoes, cr. ....65@1.00  
Turnips, sk. ....50@75

## FRESH FRUITS

Apples, green, bx. ....1.00@1.25  
Apricots, cr. ....75@1.00  
Bananas, lb. ....7@7½  
Berries—Pr. ch.: Strawberries, ch. 7.00@  
10.00; blackberries, 7.00@9.00; loganber-  
ries, 5.00@7.00; raspberries, 10.00@14.00;  
gooseberries, lb. 4@6; English, 9.  
Cantaloupes—Ponies .....1.00@1.50  
Standard .....1.25@1.75  
Flats, 50@65; Honey Dew .....2.50@3.00  
Cherries—Drawer, 1.00@1.25; loose, lb.,  
black, 4@7; fy. 8@10; Royal Anne, 8@10.  
8@10.  
Currants, dr. ....60@70  
Figs—Bx.: Mission, 50@75.  
Grapes, seedless, cr. ....3.00@3.50  
Peaches, cr. ....75@1.00  
Plums, bx. ....65@1.00  
Pineapples, doz. ....5.00@6.00  
Watermelons, lb. ....2@3

CITRUS  
Lemons, bx., according to size: Fy.,  
7.50@9.00; lemonettes, 6.00@7.50; grape-  
fruit, fy., 2.50@3.00; ch., 2.00@2.50. Or-  
anges, bx.: Valencias, 6.00@6.50.

## BEANS

Jobbers' prices, cwt., recleaned:  
Limas .....12.25@12.50  
Bayous .....8.40@8.60  
Small Whites .....Nominal  
Large Whites .....Nominal  
Mexican Reds .....8.50@8.75  
Blackeyes .....7.50@7.75  
Pinks .....7.25@7.50  
Red Kidney .....11.75@12.00  
Cranberry .....Nominal  
Teparies .....8.50@8.75

## DRIED FRUITS

(See Los Angeles markets.)

## HONEY

Jobbers' prices:  
White extracted .....20@22  
Light amber extracted .....15@18  
Amber extracted .....12@14  
White Comb, cs. ....4.50  
Light amber comb, cs. ....3.50@4.00  
Beeswax .....36@40

## HAY

Under date of June 22, Scott, Magner

&amp; Miller says:

Receipts past week, 2116 tons. Some of  
the better grades of new hay of wheat  
and wheat and oat have arrived during  
the week, although no new tame oat hay  
has been in evidence, the majority of the  
receipts consisting of wild oat, oat and  
barley, barley hay and alfalfa. There is  
so little old hay now arriving that here-  
after we will quote on the new crop only.  
Owing to the drouth this year, a great  
deal of the hay is short and carries con-  
siderable dirt which, especially when  
prices are high, causes considerable com-  
plaint. We believe this season we will  
have this trouble to a great extent. Bal-  
ing is somewhat backward owing more  
or less to unsatisfactory labor conditions.

We quote today wholesale prices in  
carload lots as appear from dealers'  
transfers upon the hay market—for  
prices to consumers charges of cartage,  
commission and handling must be added  
according to conditions:

Fancy Wheat Hay  
(light 5 wire bale) .....25.00@26.00  
No. 1 Wheat or Wheat and  
Oat Hay .....21.00@23.00  
No. 2 Wheat or Wheat and  
Oat Hay .....18.00@19.00  
Choice Tame Oat Hay .....23.00@24.00  
Other Tame Oat Hay .....20.00@22.00  
Wild Oat Hay .....17.00@20.00  
Barley Hay .....17.00@20.00  
Alfalfa, first cutting .....15.00@20.00  
Stock Hay .....14.00@16.00  
No. 1 Barley Straw, bale .....50@80

## GRAIN

Wheat—Government prices: Common  
white hard, base price, \$3.50 per cental,  
or \$2.10 per bushel of 60 pounds deliver-  
ed in terminal warehouses in bulk; soft  
white, base prices, two cents per bushel  
less, or \$2.08 per bushel; white club (In-  
cluding Sonora), \$2.00 per bushel. If  
wheat, after cleaning, weighs 60 pounds  
or more to bushel, base price stands; if  
58 to 60 pounds to bushel, three cents per  
bushel reduction; if 56 to 57 pounds six  
cents per bushel less; if less than 56  
pounds, grain becomes sample grain and  
sells on its merits up to within one cent  
per bushel of 56-pound wheat. Addi-  
tional charge made for sacks.

## SEEDS

Prices in round lots, lb.:  
Millet, recleaned .....5@5½  
Alfalfa, lb. ....20@21  
Flax .....7@7½  
Hemp .....5@5½  
Rape .....2½@3

## Citrus Fruit Market

Los Angeles, June 26, 1918.

Orange prices have declined slightly be-  
cause of immense quantities of cantalou-  
pes, peaches, and other fresh fruits in  
all markets. The demand for orange  
juice beverage is increasing.

Approaching Fourth of July has in-  
creased the lemon demand but abnormal  
prices have not obtained as they did last  
week.

## Shipments

Shipments of citrus fruits to date since  
November 1, 1917: Southern California;  
oranges 11,467, lemons 3826, total 15,293.  
To same date last season oranges 30,967,  
lemons 5752, total 36,719. Central Califor-  
nia this season: oranges 2533, lemons 115,  
total 2648. Last season to same date;  
oranges 4511, lemons 164, total 4675.  
Northern California; oranges 203, last  
year same date, 845.

## AT THE AUCTIONS

## June 19

New York: 13 oranges, 2 lem. Val.  
3.25-7.15, lem. 7.30-8.60.  
St. Louis: 3 oranges, 2 lem. Val. 4.30-  
6.70, lem. 7.75-10.50.  
Pittsburg: 5 oranges, 2 lem. Val. 3.95-  
6.35, lem. 6.70-7.25.  
Boston: 10 cars. Val. 5.15-8.85, grape-  
fruit halves 1.35-1.70.

## June 20

New York: 15 oranges, 1 lem. Val.  
3.25-7.55, lem. 7.50-8.00, Sweet's 2.95-4.35.  
Philadelphia: 7 cars. Val. 2.20-6.65.  
Boston: 5 oranges, 1 lem. Val. 4.05-  
7.00, lem. 6.95-8.05, grapefruit 1.80.

## June 21

New York: 12 cars. Val. 3.00-7.35,  
Sweet's 4.40-5.50, grapefruit halves 1.40.  
Philadelphia: 5 cars. Val. 4.50-7.30,  
lem. 7.20-7.50.

Boston: 7 cars. Val. 4.00-6.90, lem.  
7.25-7.65, grapefruit 1.30-1.80.

St. Louis: 2 oranges, 3 lem. Val. 4.55-  
6.90, lem. 8.40-9.65.

Pittsburg: 2 oranges, 1 lem. Val. 5.45-  
6.25, lem. 5.20-5.70.

## June 24

New York: 21 oranges, 1 grapefruit, 1  
lem. Val. 3.05-7.45.  
Pittsburg: 5 cars. Val. 5.00-6.35.  
St. Louis: 4 cars. Val. 5.10-6.75, lem.  
6.05-7.90.

Boston: Val. 5.60-7.80, lem. 5.65-8.45.  
Cleveland: 2 oranges, 2 lem. Val. 5.55-  
6.50, lem. 4.05-8.30.

## June 25

New York: 16 oranges, 1 lem. Val.  
4.00-7.80, lem. 7.75-8.30.  
Boston: 6 oranges, 2 lem. Val. 2.80-  
6.80, lem. 3.60-6.25.  
Philadelphia: 3 oranges. Val. 4.25-6.50.

From post card reports to the Los An-  
geles branch of the bureau of markets,  
United States department of agriculture,  
report is made of the following shipment  
of cars of products from California for  
the week ending June 17: Apricots, 173;  
artichokes, 3; cabbage, 28; cantaloupes,  
7; cauliflower, 1; cherries, 37; cucumbers,  
6; dried beans, 10; dried peaches, 3; dried  
pears, 2; dried prunes, 18; green string  
beans, 1; lettuce, 7; logan berries, 28;  
mixed fruit, 76; mixed vegetables, 47;  
mixed fruit and vegetables, 6; onions,  
147; peaches, 46; plums, 62; potatoes, 285;  
raisins, 90; watermelons, 6.

Partial list of California fruit  
and vegetable shipments

MARKET NOTES

Los Angeles, June 26, 1918.

Bureau of Markets, United States de-  
partment of agriculture from its local of-  
fice gives the Cultivator the following:

Apricots

Apricots are bringing \$40 per ton in  
northern sections; local stuff about Los  
Angeles is not yet started to any great  
extent, except for green market, most  
needs are met by stuff coming from the  
North. Apricots are not one of the licens-  
ed dried fruits. Dried apples, raisins and  
dried peaches and prunes the war and  
navy departments are strong buyers for,  
but not for apricots.

Cantaloupes

Receipts of Imperial Valley cantaloupes  
are increasing. Much ripe stock is now  
being offered, which tends to depress the  
market. Standards have declined from  
\$2.50 to \$2.00, with poorer and overripe  
stock running from \$1.25 to \$2.00 accord-  
ing to condition. Local market is begin-  
ning to feel for the first time this season  
the usual effect of receipts of over-  
ripe stock. White rinds, or so-called  
Honey Dew, jobbing from \$2.25 to \$2.50,  
with slow demand.

Potatoes

Old stock is gradually cleaning up,  
prices remaining steady for Shimas and  
a few Idaho Russets, which are jobbing  
at \$1.50. Receipts of home grown new,  
Garnets and White Rose varieties, are  
increasing and jobbing at 50 cents per  
lug box. This new stock is showing fair  
quality, but much of it is poorly graded.  
The general opinion is that the digging  
of potatoes in war gardens is beginning  
to affect the movement of new potatoes  
in the wholesale market and jobbing de-  
mand has declined somewhat during the  
week. Growers of commercial acreage  
are receiving from \$1.25 to \$1.35 per hun-  
dred from jobbers of carload lots, and the  
demand in the Northwest for this new  
stock is moderate. Most of the fields  
are digging much lighter than anticipat-  
ed. The general tone of the market  
shows a slightly stronger tendency.

Onions

Coachella onions are nearly cleaned up  
and the old Australian Brown from  
Stockton are off the market. New stock  
from Stockton not yet in appearance al-  
though the first car is expected within a  
few days.

Peaches

Local receipts have been light. The  
quality has been unattractive and peaches  
of good size and good condition have not  
yet been seen.

## BETTER FARMING

The Samson Sieve Grip Tractor Com-  
pany has issued "Better Farming," a  
most attractive booklet which is largely  
made up of illustrations of the Sieve  
Grip tractor in action in orchards, vine-  
yards, and fields, also used as stationary  
power, and with other illustrations show-  
ing various parts of the mechanism of  
this effective tractor. The title of the  
booklet should prove true to name, for  
the use of the Sieve Grip in farming cer-  
tainly leads to better farming.

## WEATHER CONDITIONS

San Francisco, Cal., June 22, 1918.

Stations Wk. Rainfall—Rainfall Norm. Max. Min.

Eureka .....T 24.34 45.93 58 48

Red Bluff .....00 12.10 24.97 108 58

Sacramento .....T 10.61 20.09 104 56

San Francisco .....00 11.48 22.27 74 50

San Jose .....00 9.38 16.79 94 48

Fresno .....01 10.27 9.68 102 60

San Luis Obispo .....18.06 20.51 94 52

Los Angeles .....00 13.35 15.64 99 64

San Diego .....03 8.90 10.91 83 64

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## Household Department

### SINCE PA QUIT TINKERING

When first we bought our auto, Pa would often lift the hood and tinker with a lot of things he never understood; They gave a pair of pliers with the tools that they supplied, And that little set of nippers was his pleasure and his pride. He tightened this and loosened that, a dozen times a day, Then wondered why the car we owned got stalled along the way.

The carburetor interested Father quite a lot, He changed it when the days were cool and when the days were hot, And when the car was running well and when it seemed to jerk; But Mother said he never gave the thing a chance to work. He fussed with it for everything that stranded our machine; He even blamed it once when we ran out of gasoline.

The monkey wrench was his delight; he'd spend each Sunday morn In taking that old car apart, from muffler to the horn; He'd smear himself with oil and grease and count his labor fun, Then wonder why, that afternoon, the motor wouldn't run. He used to stay at home at night to read his book of rules, Because he seemed to think he had to use that set of tools.

As time went on though, Father learned to leave the car alone; Today he never lifts the hood of that machine we own; So long as it will run at all Pa lets it jog along, He leaves the tools beneath the seat and will not touch a thing, And we are all enjoying life since Pa quit tinkering.

—By Edgar A. Guest.

### THE CONSCRIPT

By Clarence B. Kelland, in Milestones

**Y**OUNG SIMS maintained publicly an attitude of indifference toward the war; but he was far from indifferent. He walked about and worked and ate his meals with fear for a companion — fear that he would be drawn into the war. When conscription became a fact he knew the sensations of the condemned man, for he was 23 years old, exceedingly able-bodied, without responsibilities—ideal soldier material.

Friends had long before enlisted, or had been accepted for training at Plattsburg. Sims knew their example was an accusation pointing at him, but he dared not follow, for he was afraid, physically afraid of the things that war meant to the individual soldier. It was not so much that he was afraid to die; he was afraid to suffer. He was afraid of hardships in the trenches, afraid of wounds. Most especially there lurked in his mind the thought of vicious machine guns pouring upon him a spray of death, and of blood-lusting men rushing down upon him with fixed bayonets.

An uplift of patriotism had laid its hand upon the land. Sims had felt it. He thrilled at the sight of waving flags, at the thought of the greatness of his country in the world's emergency; of the loftiness of her motive in setting men to march behind her flag. It was not that he was a pacifist or a peace-at-any-price man. He believed in the war, in the justice and necessity of it—but was afraid to do his part. Shame was his companion as well as fear.

Now he was running away from the draft. He had slunk out of the town between midnight and dawn and was heading back into the fastnesses of the mountains, a fugitive, a deserter. The stigma of it rode his back and clutched his throat—his country had commanded and he refused to obey. More than once he stopped, turned and faced toward the town, setting his will to drive him back to his duty. But each time fear overrode will and he pointed his steps again toward the mountains, cursing himself bitterly for his cowardice.

"I can't do it . . . I can't go through with it," he groaned through his set teeth.

It was noon before he met a human being on that lonely, little traveled road. Beside the faint wagon ruts sat two big, uncouth young men eating a meager lunch. Across the knees of one was an ancient smoothbore rifle; the other sat within easy reach of a cheap, single barreled shotgun.

"How be you?" said the nearest young man.

Sims nodded in reply.

"Travelin' fur into the hills?" asked the young man with the rifle.

"Quite a ways," said Sims.

"You're headin' wrong to go soldierin' if that's what you're lookin' for," said the owner of the shotgun.

"Are—are you looking for soldiering?" asked Sims.

"Calc'late to be. First off jest one of us was comin' on account of leavin' Ma alone. But she figgered we better both go together. So we fetched our guns and here we be. . . If you



come t' Ma's house along about night you might let on you seen us and we was lookin' hearty and feelin' fine."

"Where does your mother live?"

"Keep to this road till you cross the covered bridge. Then turn to the left and up the hill. Ma perches high," said the young man with a grin. "Calc'late it's nigh to ten miles from here."

"She might allow me to stop there for the night."

The young strangers exchanged glances, then one of them said cordially, "'Course she would. Ma'd be glad to have you."

Sims trudged on, walking easily, his huge frame carried as lightly as a man of half his weight. Somehow his size made his cowardice seem that much more degrading.

Dusk had fallen when he climbed the sharp incline of the road to a little shabby-white house among the spruces. There was a light in the rear. Sims rapped on the kitchen door. There was a moment's silence, then a clear voice said challengingly, "Who's that?"

"Just a young man tramping through the hills," said Sims. "I met your sons this noon—they sent a message."

The door was thrown open and Sims stood face to face with a woman who seemed incredibly young to be the mother of grown men.

"I—" he stammered and hesitated, "perhaps I'm at the wrong house."

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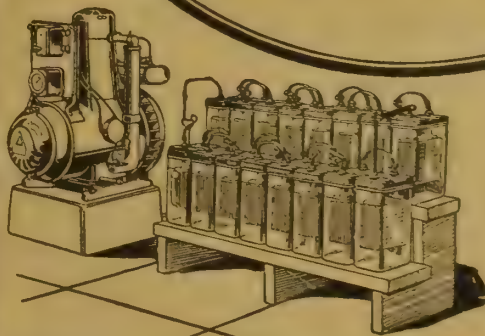
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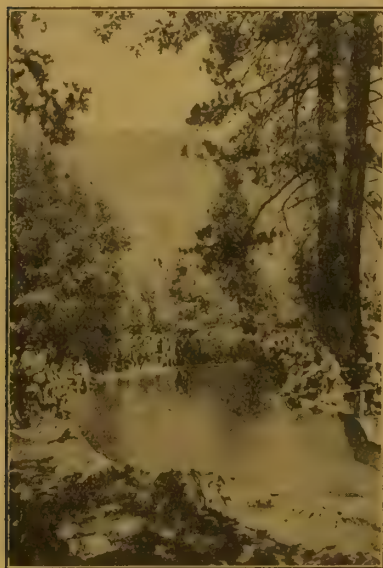


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"No—come in. Them was my boys. One had a rifle, the other a shotgun?"

"Yes. They said to tell you they were all right and feeling fine. . . . They said, too, that you might be willing to give me a bed for tonight."

"My goodness, you're big," she exclaimed as he entered. "'Course I'll give you a bed. Now that the boys is gone I don't mind confessin' I'll be glad to have a man in the house this night—especial one of your size. More so since I clean forgot about goin' down to Manney's and borrowin' a gun. . . . Boys wanted I should keep one of their guns, but I says no to that. You see we been hearin' how the goverment was short of guns and ammunition, so I made the boys take theirs right with them. . . . Set, and I'll put on a drawin' of tea."

"What do you need of a gun?" Sims asked uneasily.

"Oh, I won't need none with you here," she said, "But them Hobbs' Crack men might take a notion to come over and git even, seein' the boys is away. Kind of a bad lot, them Hobbs' Crack men. Got a grudge agin us owin' to the boys puttin' some of 'em in jail for one thing and another. Once in a while they get full and come over to pay us a visit, but the boys gen'ally looks after 'em plenty." She said that with apparent pride.

Sims frowned. It was probable the woman was overstating the peril of her situation, or she would not have let both her stalwart sons leave her to face it alone. 'Hobbs' Crack he had heard of through the wagging tongue of rumor; it was a tiny, sordid, law-flouting settlement back in the hills—and dark tales were told of happenings there. If it were true that Hobbs' Crack harbored a grudge against this household then, thought Sims, there was very real danger. Burned houses, cruelly horsewhipped men and women were whispered of as the victims of Hobbs' Crack's debt-paying. But no such horror could be hovering over this house. No woman could remain tranquil as this woman was; no woman could send away from her sure protection. . . .

"If there's danger of their coming," he said, "I can't understand your sending away your sons—your not keeping even a gun."

"Hobbs' Crack will come—if it knows they're gone," she said simply. "I didn't want the boys should go. No mother would. But, the way we hear it, the country needs them. I thought it over and prayed it over, and it seemed to me like our country deserved pretty well of us. It come to me in the night that if there was anything I could do, or give up, or risk—why, I jest had to do it."

"Do you mean," he asked incredulously, "that, knowing perfectly well the danger you would be left in, you let your sons go away to enlist? You allowed yourself to be left alone and defenseless—because the country needed men? Don't you think you needed them worse than the country?"

"That wasn't for me to judge," she said. "It hain't for any of us to set up our own wants and fears at sich a time. Don't every boy that enlists go into danger? He knows he's like to be killed or wounded. Well, us that stays home shouldn't ask more'n they do. If they're willin' to face death fightin' for our country, we ought to be willin' to face it so's they kin go to fight."

Sims looked around the meagerly, roughly furnished room. It spoke of poverty; it lacked essential comforts; it was not the home of a family which

had prospered or known the smile of fortune.

Sims spoke his thought involuntarily: "What has the country done for you to deserve so much from you?"

"I dunno's I kin explain it to you," she said quietly, "if you don't know. Don't you set a heap of store by your country?"

"Yes," he said.

She nodded. "So does my boys and me. Partly, I guess, it's because it is our country. It's a country that's strivin' to do right in the world. It's a country that's workin' constant to make folks safe and comfortable and happy. . . ." She stopped a moment and looked toward the window as though it were light and she could see off across the hills and valleys and streams and forests that lay there in amazing panorama. "And it's so beautiful. . . ." she said, and stopped.

Sims was convinced. Here was a love of country that would sacrifice its all blindly. . . . He believed now in the danger from Hobbs' Crack. He believed the woman had remained to face it alone as she said she had. He believed it, and shame overwhelmed him. What would she think of him, a craven, a deserter, fleeing from the thing to which she had serenely sent her sons? She willingly faced not only dangers from brutal men, but the struggle for life itself—that two men might serve their flag!

"You'll be tired," she said. "I'll show you the boys' room. You kin sleep there. When I hear you movin' about I'll pertend it's the boys. . . . That'll make me sort of happy."

She took the hand lamp and led the way into a tiny room, neat, kept spotlessly clean by loving hands.

"Here's where they've slept," she said, "almost since they come into the world. . . . I'm playin' they'll sleep here again; but if not—if it hain't to be that they come back from the fightin'—I calc'late I'll know it was for that I bore them and reared them, and I'll be able to set and look out at the hills and thank God I had two to give. . . ." She brushed her eyes unobtrusively with her hand. "You're big," she said. "You'll be goin' to the fightin' too, but I'm glad you're here tonight, for after all I hain't nothin' but a woman. . . . Good night."

"Good night," he said, and stood looking at the door that closed behind her. Shame, bitter, biting shame, was the cup he drank; shame that he was as he was; shame that the fear which disgusted, yet fettered him, would not let him be other than he was. . . . He was afraid even, to stay here. Those men might come! They would come armed, brutal, ruthless. Already in his secret heart, he knew he was going to be guilty of another desertion—he was about to desert this serene-hearted, much deserving woman in the hour of her peril.

(To be Continued.)

### BEHIND THE TIMES

"That is the big dipper."

"Yes, ma."

"And yonder is the little dipper."

"But, ma!"

"What is it, Harold?"

"Have they no individual drinking cups?"

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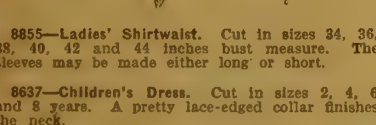
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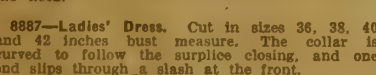
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### HONEY RECIPES

Written for California Cultivator  
By Mrs. R. F. Reasoner

In response to request by subscriber for honey recipes:

#### Honey Cake

Cream three tablespoons sugar with three tablespoons butter. Beat in one egg or two yolks. Add two-thirds cup honey, a pinch of salt, one-half teaspoon ginger, one teaspoon cinnamon, two tablespoons chocolate dissolved in one cup hot water. Add one teaspoon soda, one teaspoon baking powder, one cup barley flour, one cup white flour. Bake in two layers.

#### Honey Caramels

Two cups granulated sugar, one-half cup milk, one-quarter cup honey, one-quarter cup butter.

Mix ingredients; heat, and stir un-

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til sugar is dissolved; then cook without stirring until a firm ball can be formed from a little of the mixture dropped into cold water. Beat mixture until it crystallizes, pour into buttered pans, and cut into squares. Pecan nuts are an improvement.

### WHEATLESS RECIPES

Written for California Cultivator  
By Mrs. C. L. Gardner

#### Wheatless Raisin Bread

One cup white corn flour, three-fourths cup rice flour, three-fourths cup barley flour, one-half cup buckwheat flour.

Sift flours together twice with one teaspoon of salt and five even teaspoons of baking powder.

Stir in one generous cup of raisins. To these dry ingredients add two well beaten eggs mixed with one and three-quarters cups of milk and one tablespoon of Karo syrup. Put in well greased pan and leave in a warm place for 30 minutes. Bake in moderate oven for 45 or 50 minutes.

#### Cottage Pudding

One-half cup rice flour, one-half cup barley flour, one-third cup buckwheat flour, two-thirds cup white corn flour, one-fourth teaspoon salt, three teaspoons baking powder, sift together thoroughly. Beat one egg and half a cup of sugar together, then add to dry ingredients alternately with one cup of milk. Lastly add a tablespoon of melted shortening. Eat hot with liquid sauce.

#### Plain Cake

One-fourth cup shortening, three-fourths cup sugar, two eggs, five-eighths cup milk, one-half cup white corn flour, one-fourth cup buckwheat flour, three-eighths cup rice flour, three-eighths cup barley flour, one-fourth teaspoon salt, three teaspoons baking powder. Beat eggs light, then add sugar to them. Sift dry ingredients together twice, then add to the sugar mixture alternately with the milk. Melt shortening and stir in last. Flavor as desired.



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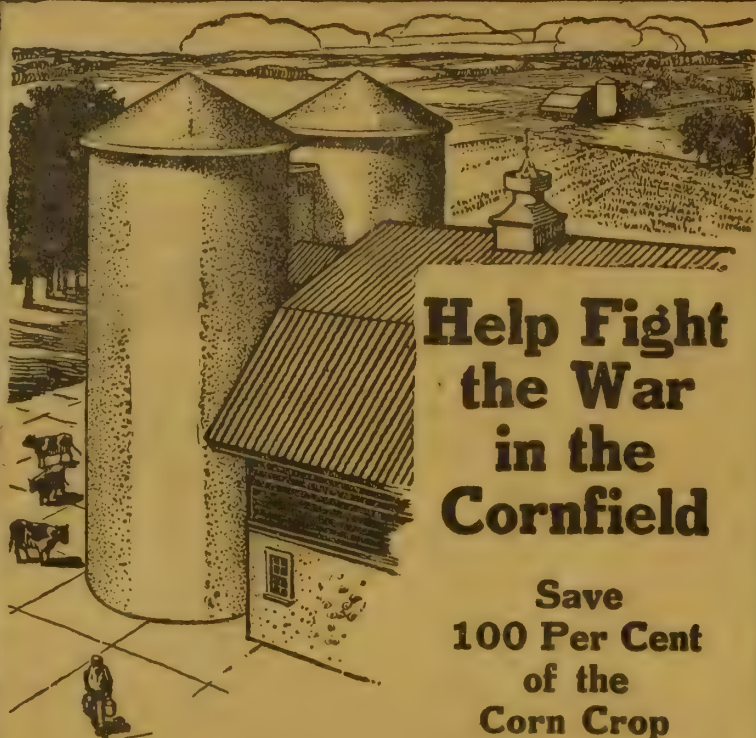
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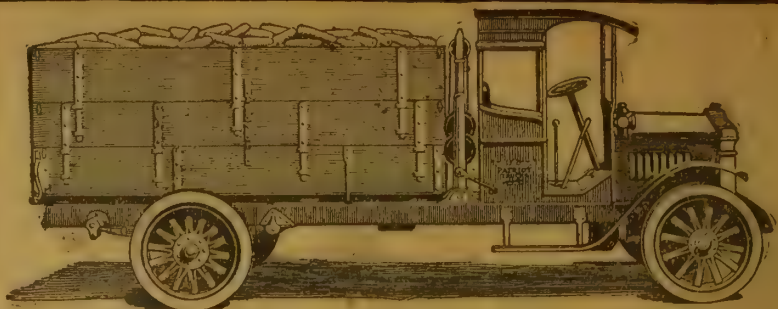
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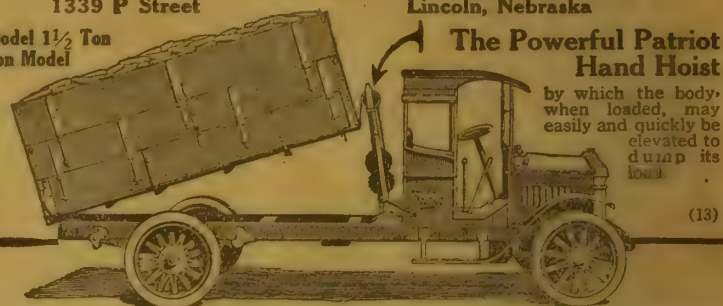
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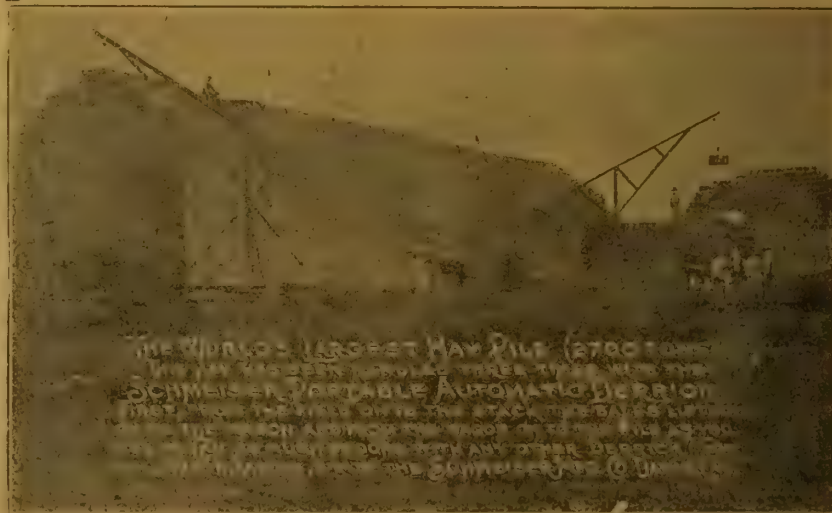


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